

Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level :\n[Hard](#)
- Last Updated :\n29 Apr, 2022

Online Screening round(Jan 2022): There was an online coding assessment in which you had two solve 2 coding questions in 70 min followed by behavioral pattern questions separately. Both coding questions were medium level and I was able to solve almost both of them. After one week of this round, I got a selection mail from their recruitment team for the next rounds. All the interviews were conducted on the Amazon Chime platform.

Interview Round 1(Feb 2022): The interviewer(SDE-2) started with a quick introduction about myself and then asked me to explain one of my projects, followed by some questions on that project. After the project discussion, we moved to the coding questions. I was asked to explain the best approach, write code for it and tell about space and time complexity.

- <https://www.geeksforgeeks.org/sort-array-converting-elements-squares/>
- <https://www.geeksforgeeks.org/delete-leaf-nodes-value-x/>

I was able to solve both questions in the given time and got good feedback from the interviewer. I got a call for the next round of interviews after one week.

Interview Round 2(Feb 2022): In this round, the interviewer(SDE-2) started with my introduction first then proceeded with one of the major projects and some discussion. After that, he started with coding questions with the same approach as followed in round-1.

- <https://www.geeksforgeeks.org/rat-in-a-maze-backtracking-2/>
- <https://www.geeksforgeeks.org/lowest-common-ancestor-binary-tree-set-1/>

I solved both questions with the best approach in very good time. The interviewer was impressed with my performance, so I got called for around 3 interviews.

Interview Round 3(Apr 2022)- BAR Raiser: This round was taken by the Product Manager. He started with a brief introduction and then jumped to coding questions. The same approach was followed for this round as well.

- <https://www.geeksforgeeks.org/reverse-level-order-traversal/>
- <https://www.geeksforgeeks.org/median-of-stream-of-integers-running-integers/>

I did both questions and then he proceeded to behavioral questions.

- Tell about a time, when you were able to complete the given task within a strict deadline.
- Tell about a time, when you overachieved results than what you had expected and what was the result.

Verdict: After a couple of days, HR called me to say you are selected and I accepted the offer letter.

Tips:

- Practice standard coding questions, medium level from GFG and LeetCode.
- Get well versed with skills, projects, and work experience mentioned in your resume.
- Answer behavioral questions with the STAR approach and prepare these beforehand.\xc2\xao
- Amazon off-campus process sometimes takes more time as in my case, but it won\xe2\x80\x99t

be canceled in between.

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Amazon Interview Experience

- Last Updated : \n28 Apr, 2022

Round 1: It was an online assessment. I don't remember the questions exactly but they were medium array questions.

Round 2(Technical Interview): Two coding questions were asked-

- <https://www.geeksforgeeks.org/next-smaller-element/>
- Given a file, a string, and an integer x. Let's say the string is at position y. Then you have to print all the strings from the (y-x) position to the (y+x) position. The string can appear more than once in the file. Give a space-efficient approach for this. I was able to explain my approach. The interviewer was quite satisfied with the approach

Round 3(Technical Interview):

- Return whether the number can be divided into any instances of 6, 9, and 20 or as a sum of all or some instances of all or any two.
- Find minimum element in O(1) time in the stack. Implement stack using linked list.

Round 4(Bar raiser):

- Firstly some managerial questions were asked and then one low-level design question was asked. The low-level design question was about the flight system.

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Amazon Interview Experience for SDE (Dublin) Feb 2022

- Difficulty Level :\n[Hard](#)
- Last Updated :\n27 Apr, 2022

Pattern: Given in September 2021(don't lose hope. I got to interview 5 months after OA). 2 LC medium, behavioral questions, SDE simulation. 3 1-hour interviews(on the same day. 2 interviews without break and 30 mins break before the 3rd interview)

Each interview followed the same pattern:

- 30 mins behavioral/LP questions
- 30 mins code

Interview 1: 30 mins, behavioral/LP questions(about teamwork, how you helped a friend). Followed by the following question:

- given: int[] timestamps and double[] values. For each timestamp, we have values given and we want to aggregate(sum) those values to a resolution of 1 minute. Timestamps are given at a resolution of a second. (hashmap). In the above question, he wanted to give the resolution as a parameter and not hardcode it to 1 minute, and also instead of just aggregating he wanted me to calculate its average. (hashmap<Integer, double[]> where double[] holds sum on 1st index and freq on 2nd and at the end, we would do double[0]/double[1] to get avg.)
- can't remember but was an easy level only

Interview 2: Behavioral/LP questions(about customer satisfaction, tell me a time when you went out of your way to help someone, a time when you did something without asking your manager).

- system design. The question was we would be given some conditions and based on those conditions we had to filter out the files on a file system. (me being the stupid one and with no knowledge of system design I told them that you can have statements in a particular format and we can take arg as String[] instructions and then filter files but he said that was the unexpected solution(by that he meant unexpectedly stupid)). In the end, he told me to make an interface for each filter we wanted to apply).

Interview 3: Behavioral/LP questions(about diving deep). Then he asked following questions:\n

- isSameTree(Node a, Node b) -> self explanatory I guess
- find the missing number. (arr from 1 to N)
- find a complete 3-node binary tree inside a larger tree

Discussed space and time complexity for all.

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Amazon Interview Experience for SDE-1 (On-Campus)

- Difficulty Level :\n[Hard](#)
- Last Updated :\n18 Apr, 2022

Online round: This round consisted of 7 easy debugging questions, 2 coding questions, a lot of behavioral questions, and mathematical aptitude questions. The coding questions for Amazon Online Assessment are almost always repeated. I don't remember the 2 questions I was given exactly but you might find similar questions here https://algo.monster/problems/amazon_online_assessment_questions. Try to do both of them and answer behavioral questions seriously.

Technical Interview 1: The interviewer started with her introduction and then asked me to give my introduction. Then she directly jumped to coding questions.

- <https://www.geeksforgeeks.org/merge-k-sorted-arrays/>
- <https://www.geeksforgeeks.org/reduce-the-array-such-that-each-element-appears-at-most-2-times/>

For the first question, I was able to come up with a solution but that wasn't having the best time and space complexity. Upon being given a hint by the interviewer, I solved it with the best space and time complexity. I was able to solve the second question with the best time and space complexity in one go.

Technical Interview 2: Started the same as round 1, then jumped to coding.

- <https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/>
- <https://www.geeksforgeeks.org/given-sorted-array-number-x-find-pair-array-whose-sum-closest-x/>

Need to solve both the questions with the best time and space complexity. I was able to do the first one easily but for the second one I started with the two-pointer approach after sorting but he was trying to confuse me I guess so he said this might not work. Since I was not sure as well, so I gave him another approach of binary search for every number. He asked me to code the second approach. He was very helpful while I tried to dry run the second approach. The round lasted for about 1 hour 20mins. In the end, I was asked a behavioral question.\xc2\xab

Tell me about a time when you innovated/invented something?

Bar raiser round: Jumped straight to the coding part.

- \xc2\xab<https://www.geeksforgeeks.org/print-all-combinations-of-balanced-parentheses/>

I was able to do the above in the first 15 minutes so then he jumped to SQL. A SQL query based on join and count. Discussion on all the scheduling algorithms. What algorithms I would use for something like Cowin. Modified the questions to accommodate FCFS and priority-based scheduling in the Cowin app. Finally was asked a behavioral question. Tell me about a time you took a risk.? Then we discussed the extra-curricular mentioned in my resume.\xc2\xab

In all the rounds I was given the option to ask any questions at the end of the round, so have some questions prepared. Overall the process took more than 2 months. I'm not from CS/IT and my CPI is also not that great. I was not allowed to sit for a few companies because of my CPI but I did have faith in my skills.\xc2\xab

Verdict: Selected

Tips:

- DSA is important but a lot of questions are very common and are repeated. Refer to this for a starting point <https://www.geeksforgeeks.org/amazon-interview-questions/>
- I was not prepared for the theory part in the last round so prepare for those too.
- Work on communicating with your interviewer.
- Be thorough with everything you have mentioned in your resume.
- Believe in the process when you are working hard, things will work out eventually.

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n24 Mar, 2022

Online Round: There were two coding questions with time complexity analysis.

1. Similar to nearest K coordinates from Origin. (Heap)
2. <https://www.geeksforgeeks.org/minimum-distance-to-the-corner-of-a-grid-from-source/>

In the end there were behavioral MCQs. After 3 days I got an email, which it mentioned that I had cleared the online assessment and will be having a quick connect with HR for further instructions.\xc2\xao

Technical Interview 1: This interview was taken by a SDE2. I was asked one easy question :

- There is an Olympic stadium which was filled by \xe2\x80\x98n\xe2\x80\x99 spectators of different nationalities who came in the stadium in a particular order. Find the 1st spectator to come in the stadium who was the only one from his nationality.

I gave the interviewer a solution of O(n) time complexity in few minutes. But interviewer wanted me to explore different data structures and tell him \xc2\xaoif possible, why and how can we use various DS in this problem and its time complexity and if not possible why not. He also asked me about the implementation of ordered and unordered maps and where to use what.\xc2\xao

Then he asked me few questions on Amazon Leadership Principles:

- Tell me about a time you got a feedback and how did you react to it.
- Tell me about a time you had to dive really deep to handle a crucial situation.

Technical Interview 2: This interview was taken by a SDM and it revolved around CS fundamentals. The interviewer asked me about the subjects I was comfortable with. I said OS/DBMS/OOP/DSA. He started with questions on OS related to scheduling algorithms, processes and threads, multithreading, deadlocks, caching. He asked whether I have implemented cache, I told him I have implemented LRU cache, he asked just the brief of the DS I used. Then asked questions on DBMS related to ACID properties, Normalization and its forms. Then he went with few questions on OOP related to polymorphism, virtual functions, inheritance. In the end he asked few questions on Amazon Leadership Principles:

Technical Interview 3: This interview was taken by a SDE2. I was asked the following questions :

1. \xc2\xao<https://leetcode.com/problems/jump-game/>
2. \xc2\xao<https://leetcode.com/problems/jump-game-ii/>
3. \xc2\xao<https://www.geeksforgeeks.org/connect-n-ropes-minimum-cost/>
4. \xc2\xao<https://www.geeksforgeeks.org/find-repeating-element-sorted-array-size-n/> with time complexity O(logn)

This interview continued for 1.5 hours.\xc2\xao

Technical Interview 4: This interview was taken by a SDM. The interviewer started by asking some situational questions around the leadership principles. He went really deep into the situations I mentioned. He focused on the minute details. Then he asked me about my projects, followed by a question on DSA.

- <https://www.geeksforgeeks.org/subtract-1-from-a-number-represented-as-linked-list/>

At the end he asked if I had any questions.

Verdict: After a week, I received a mail from the recruiter saying **you are selected.**

Tips :\xc2\xab0

- Practice coding questions from GFG and Leetcode.
- Have knowledge of projects and work experience you have mentioned in your resume.
- Practice behavioral questions, don't take them lightly.
- Try to catch the hints the interviewer is giving.

All the best!!

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Amazon Interview Experience for SDE-1(Off-Campus)

- Last Updated : \n21 Mar, 2022

Online round(Oct 2021): There were 4 questions, 2 coding questions along with their algorithm with space and time complexity. Both coding questions were on the easier side. After 1 week of this round, I got a mail from their recruitment team and I have cleared this round.

Round 1(Nov 2021): The interviewer started with a quick introduction and then asked me to explain one of my projects and asked some questions on that project. Then we moved to the coding question.\xc2\xab0

- <https://leetcode.com/problems/longest-valid-parentheses/>
- <https://www.geeksforgeeks.org/find-the-row-with-maximum-number-1s/>

\xc2\xab0He first asked me to explain the approach and then write the code. I did both questions then he asked me the space and time complexities. In the end, he asked if I have any questions for him.

Round 2(Nov 2021): In this round too the interviewer started with introductions then she asked me some behavioral questions like \xe2\x80\x9cwhat do you do when you disagree with someone? \xe2\x80\x9d. Then she asked me about hash functions and some oops concepts. Finally, she asked me if I want to ask something.

Round 3(Jan 2022): This round was taken by SDM. He directly jumped to coding questions. He only asked me one question.

<https://leetcode.com/problems/step-by-step-directions-from-a-binary-tree-node-to-another/>

he asked me to explain the approach and then space and time complexity. I did the question but was told the wrong time complexity.

Round 4(March 2022): This round was also taken by SDM. \xc2\xab0He quickly jumped on my work experience and asked what are difficulties you have faced in your present job, then he asked why I want to join Amazon. Then he moved on to the coding questions.

<https://leetcode.com/problems/partition-to-k-equal-sum-subsets/>

He first told me to explain the approach, when I explained my approach then he told me to code. I could not do the question but my approach was somewhat similar to what was even in the GFG solution. Then like other interviewers, he asked me if I have any questions for him.

Verdict: After 3 days they called me to say **you are selected**.

Tips:

- Practice coding questions from GFG and Leetcode.
- Have knowledge of projects and work experience you have mentioned in your resume.
- Practice behavioral questions, don\x9t take them lightly.
- Believe in yourself.

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Amazon Interview Experience for SDE1 (8 Months Experienced) 2022

- Last Updated : \n15 Mar, 2022

Online Round (Sept 2021): Two coding questions, both were Easy-Medium Level (Don't remember the questions). I had to write the coding approach also along with the code. After this round, I got a call from a recruiter in January 2022, mentioning that I had cleared the Online Test earlier and will they will be moving forward with my candidature. All the interview rounds were taken virtually on Amazon Chime.

1st Interview Round (Feb 2022): The interview was taken by an SDE-II. The interview started with a quick introduction and then moved to coding questions. I was asked two coding questions, both were standard. One was Easy level and the other was Medium level.

- <https://www.geeksforgeeks.org/a-boolean-matrix-question/>

I was asked to optimize the space complexity after I initially explained my approach.

- <https://www.geeksforgeeks.org/connect-nodes-at-same-level/>

I had to give a solution that used O(1) extra space. I was expected to write fully functioning code for both the questions after I explained my approach.

2nd Interview Round (Feb 2022): The interview was taken by an SDE-II. The interview started with my introduction, projects I have worked on, previous experience, etc. After I told them about my projects, I was asked extensively about Relational Databases, APIs, How to maintain consistency over multiple databases, etc. This went on for around 20-25 mins. After this, I was asked one coding question and was expected to write Production Quality code.

- <https://www.geeksforgeeks.org/longest-palindrome-substring-set-1>

I was expected to write complete working code with all edge cases covered. After writing the code, I had to dry run through my code with input given by them. Both the interviews were taken on the same day and after 3-4 days, I got another mail with a schedule for the next rounds.

3rd Interview (March 2022): This interview was taken by an SDM who was part of the team they were hiring for. The interviewer was very friendly and gave an introduction about herself and the product on which the team was working. I was asked many behavioral questions which were based on Leadership Principles:

- A task that you recently did that you are proud of
- Any new thing that you learned recently
- How do you avoid distractions and maintain productivity, etc?

NOTE The interview mail had a few of their Leadership Principles mentioned under Competencies and the interview was based on those only.

4th Interview (March 2022): This was a Bar Raiser Round taken by an SDE-II. The interview started with a quick introduction. Two coding questions were asked. One was a Medium level standard question, another one was a hard question.

- <https://www.geeksforgeeks.org/queue-using-stacks/>

- After I told the time complexity of my approach, the interviewer asked to optimize the code so that the amortized time complexity can be reduced.
- I was asked to write a complete working code which was thoroughly done by the interviewer.
- <https://www.geeksforgeeks.org/find-m-th-smallest-value-in-k-sorted-arrays/>
 - After I gave an initial approach based on merging arrays, I was asked the complexity and the interviewer told me if I can optimize the time complexity.
 - Gave a lot of hints after which I was able to figure out the heap-based solution.
 - I was asked to write the code which was checked thoroughly by the interviewer.
- Two behavioral questions were asked after this which were based on Leadership Principles only.
 - Here again, there were some Leadership Principles mentioned in the mail, and the behavioral questions were based on those only.

Verdict: After a week, I got the call from the recruiter telling me that I was **selected**

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Preparation Tips:

- Prepare for all Amazon standard questions as coding questions are mostly based on that.
- Keep speaking whatever you are thinking when trying to solve a coding question. The interviewers are helpful and will tell you if you are thinking in the right direction or not.
- Do consider all edge cases and special cases when writing code for a solution as they check for that.
- They expect Production Quality code, so use meaningful variable and function names and avoid using names like a, b, x, y, DP, etc.

All the best!!

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Amazon Interview Experience for SDE-1 (Bangalore)

- Last Updated : \n15 Mar, 2022

Round 1(Online assessment): Consisted of 2 coding questions along with a code explanation for each. In code explanation, you need to explain your approach and the time and space complexity. I do not exactly remember the coding questions asked, but one was leetcode easy, and the other was leetcode medium.

Round 2(Technical round 1): The interviewer asked me to introduce myself. Then gave the following coding questions.

- Variation of [prerequisite tasks](#).
- A simple array-based question that used 2 pointer approach.

Round 3(Technical Round 2): The interviewer asked me to introduce myself. Then gave the following coding questions.

- Variation of this question: \xc2\xad<https://www.geeksforgeeks.org/partition-a-set-into-two-subsets-such-that-the-difference-of-subset-sums-is-minimum/>
- [Rotten oranges](#).

Round 4(Bar raiser): The interviewer asked me to introduce myself. Then he asked some questions from my resume.

- \xc2\xadTell me about the project mentioned in your resume.
- \xc2\xadVariation of stock buy and sell. Took more than 30 mins to understand and do this. The interviewer was not clear with his requirements. \xc2\xadFinally did this with recursion.

Round 5(Managerial round): The interviewer was very nice. He interacted with me very well. Asked several behavioral questions. Some were,

- Tell about a time when you did something challenging.
- Tell about a time when you did something innovative.

Tips: Keep practicing daily Practice from GFG and leetcode, that should be enough. Do not take behavioral questions lightly and practice them during the end days before your interview. Make 5-6 stories at least.

Verdict: **Selected**

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Amazon Interview Experience for System Development Engineer (Exp \xe2\x80\x93 6 months)

- Last Updated : \n09 Mar, 2022

Round 1 (Phone Screening): It was a screening round to gauge my resume and also check if I was worth the further interview process for the role. The interviewer started with a basic introduction followed by some questions on the projects mentioned on my resume. Post that, I was asked a few coding questions mentioned below:

1. <https://practice.geeksforgeeks.org/problems/boundary-traversal-of-binary-tree/1>
2. <https://practice.geeksforgeeks.org/problems/add-1-to-a-number-represented-as-linked-list/1xc2xa0>

It was followed by a trouble-shooting question: What will you do if your website is unable to fetch the data from your SQL database?

Round 2 (Tech Round 1): This was the first Technical Round and after a quick exchange of introduction, the interviewer straight away dived into some coding questions:

1. <https://leetcode.com/problems/best-time-to-buy-and-sell-stock-ii/> (further modifications were made and was asked how different my approach would be)
2. <https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/>

Then I was asked some questions on OOP and DBMS concepts. One question which stood out in the interview was to compare how similar/different would the structure of a class be when compared with an entity from the ER Model.

This round ended with a behavioral question based on ownership & customer obsession:

Mention a time when you went above and beyond what was required of you at work?

Round 3 (Hiring Manager): The interviewer started with a quick introduction and asked numerous things about all the technologies and projects that were mentioned on my resume. Then we started with the coding questions:

1. Sort alphabets in such a way that all the alphabets which are more than 1 in number in the given array appear first with their frequency of alphabets to follow and all those alphabets that are single appear at the end in the same order of their appearance. eg: {b, f, a, c, g, a, f, b, b, d} -> {b, b, b, f, f, a, a, c, g, d}
2. Find any subsequence from an array whose sum is zero (The array contains both positive & negative numbers)

Then it was time for some behavioral questions:

1. Tell me about the coolest thing that you have done so far.
2. Tell me about a time you had to do some work under a strict timeline and did not have the time to consider all the options.
3. Tell me about a time when you had a difficult problem to solve.

Round 4 (Tech Round 2): This was the second technical round and after a brief introduction the interviewer directly stepped into some coding questions:

1. A modified version of <https://www.geeksforgeeks.org/check-balanced-parentheses-expression-o1-space/>
2. <https://leetcode.com/problems/two-sum/>

This was followed by a troubleshooting question: What would you do if the webpage that you are currently on blacks out? This was more of something like a discussion with each of the answers I say leading to a new question.

This was followed by a behavioral question:

1. Tell me about a time when you had to do a lot of research to get your work done.

Round 5 (Bar Raiser): A bar raiser is typically your make or breaks as per Amazon. The interviewer here will have a veto at the time of debrief whether to not select you. The bar raiser generally is on various Amazon LP and will also check on your weak topics from your earlier rounds. My interview majorly comprised of some behavioral questions and a healthy discussion about my resume.

1. Mention a time when you had to react quickly in your work. What was the outcome?
2. Mention when you had to dive deep into something to get your work done. I had answered based on a college experience of mine & then the interviewer asked me to think of something that I had done during my work experience as well.
3. Talk about a time when you had taken a challenging project. What was the challenge and how did you overcome it.

After 2 days I got an email from my recruiter telling me that I had qualified the interviews.

Some tips:

1. Be honest with your interviewer and do not mention anything that you do not know on your resume.
2. Prepare some real-life scenarios for every Amazon LP that is there. It will always help you to make note of all the scenarios from your work experience and build a story out of it.
3. Make it a point to clarify the question once asked and also state all your assumptions well in advance.

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Amazon Web Services \xe2\x80\x93 Introduction to Amazon EKS

- Last Updated :n11 Mar, 2022

Amazon Elastic Kubernetes Service(ECS), is a fully managed service that you can use to run **Kubernetes** on Amazon Web Service. *Kubernetes* is open-source software that enables you to install and manage applications at a high scale.\xc2\xao



Its characteristics are:

- **Availability:** In order to ensure high availability Kubernetes executes and scales itself to various AWS AZs.
- **Strength:** Kubernetes automatically scales itself to avoid loads and unwanted control plane issues.
- **Scalability:** It also works with various AWS services to provide security in applications.
 - Amazon ECR for container images
 - Elastic Load Balancing for load classification.

AWS Fargate: It is a serverless compute engine for containers. It works with *Amazon EKS* \xc2\xao or *Amazon ECS*.

Amazon EKS Sections :

Amazon EKS organization contains the following sections: clusters, nodes, and networking.

1. **Clusters** \xe2\x80\x93 Clusters are consists of the control plane and EKS nodes.
2. **EKS nodes** \xe2\x80\x93 Kubernetes nodes run with EC2 in your organization\xe2\x80\x99s account of amazon web service. Each cluster is defined by a unique certificate to schedule portable storage using three ways:
 - Self-Managed Nodes
 - Managed Node Groups
 - Amazon Fargate
3. **Amazon EKS Networking**-EKS operates in a Virtual Private Cloud (VPC) so that it can activate all resources to an existing subnet in a network.

Advantages of AWS EKS :

Following are the advantages of using Amazon EKS:

1. EKS automates load distribution and parallel processing better than any DevOps engineer could.
2. EKS uses VPC networking (explained above).
3. Supports EC2 spot instances using managed node groups that follow best practices.
4. Your Kubernetes assets integrate smoothly with AWS services if you use EKS.
5. EKS allows you to run tools easily.

Amazon EKS Control Plane Architecture:

Each cluster runs only one Kubernetes control plane. The control plane mainly consists of two API servers and three `etcd`. The `etcd` is used for storing Kubernetes data. It manages the scalability of load to have high performance. It identifies the unwanted part of the control plane and can remove it. The control plane cannot be accessed by any other AWS accounts or clusters except for the authorized user.

Working of Amazon EKS:

- Firstly, create an Amazon EKS cluster in the console.
- Now launch the EKS nodes and place all the workloads on AWS Fargate.
- After your cluster is ready, the user can easily communicate by using different types of tools.
- Users can now manage the workloads over Kubernetes.

Pricing of EKS:

The user can pay for both long-term service and short-term service. Long-term is a little bit cheaper than the other one because it sets a commitment from 1-3 years.

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Amazon Interview Experience (Off-Campus) 2022

- Difficulty Level :\n[Medium](#)
- Last Updated :\n28 Feb, 2022

There is four round of interviews.

Round 1 (Online Assessment Test): The online test consists of 2 coding questions to be completed in 70 minutes. The questions are of medium difficulty level and I was able to solve both of them in under 40 minutes.

One of them was a variant of this question <https://www.geeksforgeeks.org/find-maximum-minimum-sum-subarray-size-k/>

Round 2 (Technical Interview): My interviewer asked me to introduce myself and then jumped into coding questions :

- **Question 1:** [Check if the given BST is a sum tree](#)

I gave him an optimized solution and discussed its time complexity.

- **Question 2:** You will start at a point (X, Y) on a grid of dimensions (M, N). Return the no. of ways in which you can cross the border of the grid in exactly k steps.

I initially gave a brute force solution. Later I was able to optimize my code. My interviewer was very friendly he helped me here and there if they were any errors in my code. Overall I was able to solve both the questions in under 50 minutes. Later we had a casual discussion on projects and work culture at Amazon for a few minutes.

Round 3 (Technical Interview): He gave an introduction about himself and asked me to do the same. Later he asked me a coding question:

- **Question 1:** [Find the maximum sum subtree which is also a BST in a binary tree. \xc2\xab0](#)

I solved the question and explained my approach and the time complexity of my solution to him. He then showed me multiple code snippets and asked me to calculate time complexities for each of them. He asked to calculate the time complexity of the [Sieve of the Eratosthenes](#) algorithm.

Round 4 (Final Round/Bar Raiser): We had a discussion on my previous projects for around 30 minutes. He then asked me a few behavioral questions:

- Tell me about a time when you have exceeded expectations.
- Tell me about a time when you have delivered late? If yes what was the reason for the delay?
- Why do you want to leave your current company?
- Why Amazon?

He then asked me to write production-quality code for the following question-
<https://www.geeksforgeeks.org/sort-the-strings-according-to-its-frequency/>

Final Result: Selected.

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Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level :\n[Easy](#)
- Last Updated :\n23 Feb, 2022

I applied for 6 months internship at Amazon in October. I gave Open Access(OA) in November, and in December I got a mail from Amazon that they are considering me for FTE and my interview processes will happen between Jan to April.

Online Assessment: Typical amazon OA with five sections.

Two simple coding questions were asked. Didn't exactly remember the questions but one was easy and one was of medium difficulty. Both were greedy problems.

Round 1: Two coding questions

1. To find the path between two nodes in a binary tree.
2. To find the number of turns that are required in the above path if we start from one node to another.

I was able to write an optimized code for 1st. For 2nd part, he only discussed the approach as I already took some time in the first part. He seemed satisfied with my approach.

Round 2: Two coding questions along with some behavioral questions. \xc2\x96 \xc2\x96 \xc2\x96 \xc2\x96

1. Min k elements of an array variant. Along with it, he asked what if there is a large chunk of data being passed and at the same time, we want to print the min elements. He said how will you handle that case. He said to think outside DSA. I said it is can be done through semaphore by which either we can print data or find min k elements.
2. Minimum platform required for a station if we are given arrival and departure time.

I was able to solve the first question optimally.

In the second question, I gave him optimal code but he asked for spaced optimized approach in which time complexity can be compromised. I somehow managed to give a solution that was not the same which I later found on GFG but I think my approach was correct and he was satisfied.
\xc2\x96

\xc2\x96 **Round 3:** Two coding questions along with a discussion on projects.

1. <https://takeuforward.org/data-structure/implement-queue-using-stack/>
2. <https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/>

I was not aware of the amortized method of implementing queue. I gave a typical solution which always took linear time. But after some hints from him, I was able to come up with an optimal solution in the first go. I was scared that I required a lot of hints to solve this question but I think he was impressed by the way I approached the question and formed the logic there only unlike already knowing the optimal solution.\xc2\x96

I gave the optimal solution for the second question with some errors here and there which was pointed out by him. \xc2\x96 \xc2\x96

Verdict: Selected!!

Tips:

- As you can see none of my interview rounds were perfect. So don't lose your composure and try to build a connection with the interviewer.
- Think out loud so that he/she may help if you are stuck.
- Practice standard DSA and keep revising them.

All the best!!

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Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level :\n[Easy](#)
- Last Updated :\n07 Mar, 2022

I got a mail from an Amazon recruiter for the SDE-1 role. I applied through the Career Site.

Online Assessment round: 2 coding questions were asked. (don't remember exactly), I have got an MD editor and also to explain my approach to questions and time complexities. You need to solve both questions to get a call for an interview.

Round -1 (Coding round): Around 3 weeks later, I received a call from the recruiter that I have 2 interview rounds in the next week on the same day. This round was taken by a senior SDE-2. We introduced ourselves and then he directly jumped into coding questions.

1. Move zeros to last (<https://www.geeksforgeeks.org/move-zeroes-end-array/>)
2. Remove k consecutive chars (<https://www.geeksforgeeks.org/reduce-the-string-by-removing-k-consecutive-identical-characters/>)

We first discussed the approaches to solve the problems and then when I reached the optimized solution to the problem. He asked me to write the code and discussed the space and time complexities.

Round 2 (Coding round): After one hour on the same day, I had the next round of interviews. It was taken by two senior SDE-1. They asked me to introduce myself.

1. I didn't exactly remember the question but it was an application-based modified DFS of graph problem.
2. Count ways to reach nth stairs. (<https://www.geeksforgeeks.org/count-ways-reach-nth-stair/>)

I have explained both the question in 45 minutes. They asked me if I have any questions for them. I have asked them to tell me their experience.

After around a week later, I received a call that I have the next round of interviews on the next day.

Round 3 (Bar-raiser round): This round is taken by a senior manager. We faced a lot of bandwidth issues from his side.

1. He asked me about my recent projects. The approach, the challenges I faced, and their solutions.
2. He asked me some behavioral questions too like Tell me about a time you made a blunder (Technical and personal both).
3. He also asked me what are questions asked in my previous rounds. and then gave me this problem.
4. Reverse zig-zag tree traversal. (<https://www.geeksforgeeks.org/zigzag-tree-traversal/>)

This round didn't go so well. I was nervous about the next round. The gap between this round and the next round was 15 minutes but this round lasted 10 minutes longer. So, I got only 5 minutes between both rounds.

Round 4 (Bar-raiser round): This round was also taken by a senior manager having about twelve years of experience. We started with the Introduction.

1. This was similar to the questions asked in the previous round. He asked me about my recent

- projects. The approach, the challenges I faced, and their solutions. This time he went in-depth.
- 2. Also some HR questions, Why do you want to leave your current company?
 - 3. Why Amazon?
 - 4. Maximum sum path (<https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/>)

A week later I received a call that I got selected.\xc2\xab0

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Amazon Interview Experience for SDE-2

- Last Updated : \n21 Feb, 2022

All the interview rounds happened virtually through Chime.

Round 1 (Online Assessment):

Two coding questions (medium level) were given along with behavioral questions and project simulation questions. In project simulation questions, you will be given a project scenario and you will be asked to select the right decision (architectural and design) for the scenario.

Round 2 (Face 2 Face [virtual] Problem Solving/Data Structures) :

This round is a coding round but the interviewer is more interested in my current project and asked questions in depth about the project and its design and then asked me to do design a Document transmission service.

- Question 1
 - I was asked to implement a Document Transmission service where the clients can upload one or more documents of any size and based on the client\xe2\x80\x99s requirements the service needs to transmit the document to a designated channel (mail, WhatsApp, etc\xe2\x80\x99a6) at the designated time.
 - Asked high-level design for the service
 - APIs for the service
 - Asked the details for the APIs
 - Contract for client level configurations for each transmission channel
 - Scheduler configurations
 - Asynchronous and Synchronous \xc2\x96 implementation of the service
 - Request and Response payloads at all the stages
- Question 2
 - Asked leadership questions related to Customer Obsession and Ownership

Round 3 (Face 2 Face [virtual] Design round) :

This round is a design round with the hiring manager. The round started with questions on the project and the design of the current project

- Question 1
 - Asked leadership questions related to Ownership and Customer obsession.
- Question 2
 - I was asked to implement a News Aggregator (Google News)
 - The News Aggregator should be able to **fetch and receive** news from public and private sources
 - It should be able to crawl feed from RSS \xc2\x96 feed of different sites
 - It should have minimum latency and show the latest news to the user
 - System design for the same

Round 4 (Face 2 Face [virtual] Problem Solving/Data Structures) :

This round is a coding round.

- Question 1

- Asked leadership questions related to Customer obsession and Bias for action
- Question 2
 - Given a directory with log files and max storage limit for the directory, insert new log files into the directory. If the limit is already exceeded, remove the log file with the maximum size and insert the news file
 - Gave max heap based approach and the interviewer is satisfied with the approach and asked to write the solution
- Question 3
 - There are many chickens on a farm where each chicken can be a child AND/OR parent of another chicken. If a chicken is infected with the virus, how many units of time does it take for all the chickens to be infected with the virus. A chicken can infect virus to its immediate parents and children in one unit of time
 - Gave BFS based solution.
 - Traverse through the graph and count one unit of time for each generation

Round 5 (Face 2 Face [virtual] Problem Solving/Data Structures) :

This round is a coding round\|xc2\|xa0

- Question 1
 - Asked leadership questions related to Insist on higher standards
- Question 2
 - Asked a question similar to the chickens\|xe2\|x80\|x99 problem from the previous round, told it was asked in previous rounds so changed the question
- Question 2
 - You are given a list of employer and employee relations. Return a map of each employer and all the employees reporting to him
 - Gave DFS based solution and the interviewer is ok with it

Round 6 (Bar raiser) :

- Question 1
 - Asked leadership questions related to Insist on higher standards.
- Question 2
 - [Longest Consecutive Subsequence](#) in O(N)

Verdict: Selected\|xc2\|xa0

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Amazon Interview Experience for SDE-1 (Off Campus)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n15 Feb, 2022

I was contacted by Amazon recruiter for SDE-1 role.

Coding round: 2 simple coding questions were asked . (don't remember exactly), you need to solve both questions to get a call for interview.

Round 1 (Coding Round): This round was taken by senior SDE-2. She ask me to give introduction about my-self and then directly jumped into coding questions.

1. Find the diameter of binary tree (<https://www.geeksforgeeks.org/diameter-of-a-binary-tree/>)
2. Find the number of islands (<https://www.geeksforgeeks.org/find-number-of-islands/>)

I was asked to write production-level code for both of questions.

I was able to solve both of questions within 30 mins. After that she asked questions from my resume and at the end she gave me one more coding question and i was asked to just describe approach.

- (<https://www.geeksforgeeks.org/the-celebrity-problem/>).

I was able to solve in $O(n^2)$ but it was not optimised.\xa0

Round -2(Hiring Manager Round): This Round started with introduction.

Question asked:

1. Meaning of my name(keyur)
2. Projects are done in previous organisation\xc2\xa0
3. Why you want to leave current Company
4. Why Amazon?
5. Have you resolved any production-level bugs? If yes, what was it and how you approached
6. Write Database query to find customer who has ordered in both Sep and Oct.
7. In the end, he gave me one coding question to
solve\xc2\xa0(<https://codereview.stackexchange.com/questions/181606/determine-if-simple-arithmetic-expression-is-valid>)

Round 3 (Coding Round):

1. Minimum platform required (<https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/>)
2. Similar to Kth smallest number(<https://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array/>)

I was able to solve both the questions. In the end, he asked me behavioral questions. Was there any task that you were not able to complete within the time duration? If yes. What was your mistake and what did you learn from that?

Round 4 (Bar Raiser Round): For the first 30 mins, It was mainly around discussion around my projects. After that, he asked me to design a flight booking portal.

1. What are Apis that you will define

2. What database you will use.

After a week, Got a call from the recruiter that I was selected.

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Amazon Interview Experience (On-Campus)

- Difficulty Level : \n [Medium](#)
- Last Updated : \n 10 Mar, 2022

ONLINE ASSESSMENT \xe2\x80\x93 This Round consists of 4 sections and you need to perform well in all of these.

A) DEBUGGING (20 mins) \xe2\x80\x93 You will be given around 7 debugging questions which will be extremely simple. You only have to correct the code to pass all test cases.

B) CODING (70 mins) \xe2\x80\x93 Questions asked were

1. Based on Sorting (Can\xe2\x80\x99t find problem link)
2. <https://www.geeksforgeeks.org/count-number-of-substrings-with-exactly-k-distinct-characters/>

C) WORK STYLE ASSESSMENT (20 mins) \xe2\x80\x93 There will be a lot of behavioral questions you will have to answer it by moving a slider to the left/right to indicate how well it describes you. You need to answer these questions with care as well as they are equally important for amazon.

D) APTITUDE & REASONING (35 mins and 24 ques) \xe2\x80\x93 There is enough time and no negative marking, so solve all the questions.

INTERVIEWS \xe2\x80\x93

ROUND 1 \xe2\x80\x93 Started with introduction and then we started off with dsa problems

1. <https://www.geeksforgeeks.org/find-height-of-a-special-binary-tree-whose-leaf-nodes-are-connected/>
2. <https://leetcode.com/problems/maximum-number-of-weeks-for-which-you-can-work/>

The first one was straightforward. For the second, the interviewer gave me hints, i was initially thinking in wrong direction but he helped me to get back on the track and i ended up finding the solution and also coded the same.

ROUND 2 \xe2\x80\x93 Started with introduction and then we discussed about one of my projects (around 4-5 mins only), and then we moved to dsa questions

1. <https://www.geeksforgeeks.org/find-a-tour-that-visits-all-stations/>
2. <https://www.geeksforgeeks.org/connect-nodes-at-same-level/>

Both the questions were standard questions, for the first question, i first started with an O(n^2) approach, then we went to O(n) with extra space and at last i was told to optimize the space as well, so i did it and also coded the space-optimized version. For the second one, i discussed only one approach and was asked to code it.

ROUND 3 \xe2\x80\x93 Started with introduction, followed by project discussion in-depth, a lot of behavioral type question based on my project and also i was asked to show a working demo of features that i have implemented, after that we were left with 30 \xe2\x80\x93 35 mins, so only one dsa question was asked.

1. [lru-cache](#)

I was asked to write the production level code in one go, so i started with my implementation using the concept of classes and was explaining each and every line in detail, after completing the implementation, were some follow up questions about making this code more modular, and then i was asked to find out and rectify the bugs in my code if any, i was only asked to discuss about the rectifications that i can do.

Note: No questions were asked from theory subject like OS, OOPS, DBMS, CN but it totally depends on the interviewer, and you can be asked anything, so don't ignore these subjects as well.

TIPS

1. Ask clarifying questions a lot, and always discuss your approach first, don't jump directly to the coding part.
2. Assume that you can be asked anything from your resume in detail.
3. Thoroughly go through amazon leadership principles as most of the behavioral questions were asked from that only or i can say is you will be judged on these principles in every round.

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Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level :\n[Hard](#)
- Last Updated :\n03 Feb, 2022

Status: 2021 graduate

Work: SDE1

Applied through amazon job portal.

Round 1(Online Coding Test): 2 questions, 120 minutes

- Explanation with Time complexity and Space complexity
- Array Manipulation question (Not remembered actually)
- Rotting oranges (LC: medium)

Round 2(Technical Interview): No discussion on projects direct coding question were given

1. You are riding a bus, suppose in the East direction (bus direction will not change). Given the capacity of bus \xe2\x80\x98c\x80\x99 and an array such that [numberOfPassengers, PickUpLocation, DropLocation]. Check if you can drop all the passengers at their destinations. Return true or false

eg:

- a. Bus capacity, c=4\r\n[[3,1,5],[2,2,6]] -> Return false

Explanation: Bus capacity is 4. You pick 3 passengers at location 1, then your bus capacity will be $4-3=1$. Now at location 2, two more passengers are waiting but your capacity is 1 so you can't pick 2 passengers. Hence, dropping all passengers at their destinations is not possible.

- b. Bus capacity, c=11\r\n[[3,2,7],[3,7,9],[8,3,9]] -> Return true

Explanation:

Capacity:11

At location 2: Passengers = 3, Capacity = $11-3=8$ (They will be drop at location 7)

At location 3: Passengers = 8, Capacity = $8-8=0$ (They will be drop at location 9)

At location 7: 3 people will be dropped, Capacity = $0+3=3$,

Passengers=3, New capacity = $3-3=0$ (They will be drop at location 9)

At location 9: All 11 passengers will be dropped ($8+3$).

Hence, you pick all passengers and drop them all. Return true.

2. Given an array, count pairs such that $(arr[i]+arr[j]) \% 60 == 0$

eg. [30,20,150,100,40]\r\nOutput: 3

Explanation : $(30+150) = 180 \ \% 60 == 0$, Count=1

$(20+100) = 120 \ \% 60 == 0$, Count =2

$(20+40) = 60 \ \% 60 == 0$, Count =3

Round 3(Technical Interview):

- Discussion on project
- Similar question with some twist: The twist is instead of sum I need to return maximum product (tree also contains negative nodes {Keep in mind: Product of two negative nodes can give maximum positive product) <https://www.geeksforgeeks.org/maximum-sum-nodes-binary-tree-no-two-adjacent/>
- Reverse nodes in K-groups, LC: Hard

Round 4:

1. Basic introduction
2. Project discussion
3. Operating system question on Internal and external fragmentation, best fit, next fit, worst fit, first fit, paging, virtual memory, different page replacement algorithms.
4. DBMS- Discussion on Normalisation and its type (1NF, 2NF, 3NF, BCNF)

Round 5:

- Introduction
- Discussion on projects

2 coding questions:

1. Print all pair of elements with minimum absolute difference in the array. Something like this
 $\backslashxe2\backslashx80\backslashx93$ [https://www.geeksforgeeks.org/sum-minimum-absolute-difference-array-element/#:~:text=For an element x present,abs is the absolute value.&text=Sort the array of size n](https://www.geeksforgeeks.org/sum-minimum-absolute-difference-array-element/#:~:text=For%20an%20element%20x%20present,abs%20is%20the%20absolute%20value.&text=Sort%20the%20array%20of%20size%20n).
2. Given an array, count pairs such that $(arr[i]+arr[j]) \% 60 == 0$

eg. [30,20,150,100,40] \r\nOutput: 3

Explanation:

$(30+150) = 180 \ \% 60 == 0$, Count=1

$(20+100) = 120 \ \% 60 == 0$, Count =2

$(20+40) = 60 \ \% 60 == 0$, Count =3

(Same question as asked in round 2)

I was not able to solve one coding question in 3rd round. Was expecting a positive result because the last 2 rounds were awesome \xe2\x80\x99. but luck was not with me \xf0\x9f\x99\x82

Upvote if you like :))

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Amazon Interview Experience 1.5 years Experienced

- Difficulty Level :\n[Hard](#)
- Last Updated :\n07 Feb, 2022

I was contacted by an amazon recruiter for the SDE-1 role.

Coding Round: Two questions were asked to be solved in 105 minutes in which we have to write time complexity and algorithm as well.

1. Given a string which has only \xe2\x80\x98(\xe2\x80\x98, \xe2\x80\x98)\xe2\x80\x99, \xe2\x80\x98[\xe2\x80\x98, \xe2\x80\x98]\xe2\x80\x99, and \xe2\x80\x98?\xe2\x80\x99, Determine numbers of ways by which string can be split into two substrings such that characters in both substrings can form a balanced string. You can replace the question mark with any other 4 characters.

```
Input - "[(??) [??["\nOutput - 2
```

2. Given an array that has the amount of rainfall for ith day and an integer k, return indexes(start from 1) of days which are ideal for camping. A day is said to be ideal if the rainfall is in decreasing order prior to considered day and then in increasing order following k days from considered day.

```
Input - day = [3, 2, 2, 2, 3, 4], k = 2\nOutput - [3, 4]
```

I got a call after a week to schedule the first 3 rounds. All 3 rounds happened on the same day.

Round 1(Technical):

1. <https://www.geeksforgeeks.org/find-a-triplet-in-an-array-whose-sum-is-closest-to-a-given-number/>
2. <https://www.geeksforgeeks.org/shortest-path-in-a-binary-maze/>
3. Tell me about time when you dive deeper into understanding a technology that solves a great customer problem and How your solution was better than the previously implemented solution.

Round 2(Technical and Managerial):

1. <https://www.geeksforgeeks.org/lru-cache-implementation/>
2. How to implement threading in C++
3. How HTTPS protocol works
4. How HTTPS is passed to application via server
5. Detailed Project discussion.
6. Tell me about a time when you solve a major frequent issue that was causing a lot of trouble to customers by observation.
7. Tell me about a time when you have made sacrifices while solving a customer problem
8. How indexing and partitioning helps in optimizing DB queries

Round 3(Technical):

1. Merge 3 sorted \xc2\xaaarrays with removed duplicates
2. <https://www.geeksforgeeks.org/merge-k-sorted-arrays/>
3. <https://www.geeksforgeeks.org/subtract-two-numbers-represented-as-linked-lists/>
4. Any scenario when you have controversy with someone with team or business or customer is unsatisfied.

Round 4(Bar-Raiser):

1. Given a grid , with persons standing, some are empty spaces, you need to remove minimum number of people to sure that now two people are adjacent to each other(only horizontal and vertical are adjacent).
2. Given a list of heights of building whose width is 1, find max area enclosed by buildings. Ex [5,2,4,1,1,1,2] ans is 7. <https://www.geeksforgeeks.org/largest-rectangle-under-histogram/>
3. Tell me about a time when You believer something that is quite challenging for you?
4. Tell me about when you took calculated risk?
5. Tell me about a time when you work on tough feedbacks from customer and what to do you learn from it?

All the Best

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Amazon WOW Internship Interview Experience 2021

- Difficulty Level :\n[Easy](#)
- Last Updated :\n24 Jan, 2022

I applied for a 2-month SDE internship role in amazon through the amazon wow program 2021, This program is an initiative by Amazon to promote women in tech.

Round 1(17th August 2021): It was an online assessment on the Mettl platform that was around 1.5hrs long. The 9 sections of this test were: Hands-on coding, Data Structures, Algorithms, Networking, Software Testing, Software Methodologies, Linux, OOPs, and Operating Systems.

Round 2(25th August 2021): It was an online assessment on the SHL amazon platform.

Note: The paper had sectional timing.

1. Debugging section \xe2\x80\x93 we needed to solve 7 debugging questions in 20 min.
2. Coding test \xe2\x80\x93 It has 2 medium-level questions. The difficulty level of questions varies from set to set.
3. Worklife assessment \xe2\x80\x93 It has around 25-30 questions related to work ethics and perspective towards life.
4. Reasoning ability section \xe2\x80\x93 It has 24 questions that need to be answered in 35 mins (the questions were easy).

Interview: My interview was scheduled for 10th October, 24hrs before that I got the interview link. I was super excited at the same time nervous; the interviewer was very understanding and gave me time to get comfortable.\xc2\xab0

- She started by asking a warmup question find-next-greater-number-set-digits. First, I gave a naive approach to the solution i.e., generate all the permutations of the number and then figure out the one which is just greater than the given number. she asked me to optimize the solution and then I came up with an $O(N \log N)$ approach after that he asked me to code it.
- The second question was to check whether a given binary tree is BST or not. I gave a naive approach (second approach in this article).
- Then she asked me to optimize if I can, and I came up with an efficient approach (3rd approach in this article)which required the tree traversal only once she was satisfied and asked me to code, I wrote the code and had a dry run to ascertain its correctness.
- She was satisfied with my approach and way of explanation.
- I was satisfied with my performance and was expecting a positive response, on 20th October I got the selection mail.

Tips \xe2\x80\x93 Be confident, think loud, always dry run your code before you tell the interviewer that you are done and luck plays a vital role so fingers crossed.

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Amazon Internship Interview Experience | Off-Campus 2021

- Difficulty Level :\n[Hard](#)
- Last Updated :\n24 Jan, 2022

Interview Difficulty Level: Hard

Round 1(Resume Shortlisting): Applied on 9 Oct 2021, got test link around 10 Nov 2021.

Round 2(Online Assessment): There were four sections namely, code debugging, coding, workstyles assessment, and aptitude. The code debugging section consisted of 7 code snippets that were faulty and we had to debug them and find the correct output (20 minutes).

- The coding section consisted of two coding problems and the difficulty was of Leetcode Easy-Medium level (70 minutes).
- <https://practice.geeksforgeeks.org/problems/smallest-distant-window3132/1>
- And other ques I don't remember.
- The work styles assessment was based on the leadership principles of Amazon. There was no time limit for this section.
- The last section was based on aptitude and reasoning questions. There were 24 questions and we had 35 minutes to solve them.

Round 3(Technical Interview): The interview started with a brief introduction about myself and what projects and internships I had done. There were three panelists interviewing me. The interviewers directly jumped into coding and I was given three coding questions in phases that I had to solve. The questions were of Leetcode medium-hard difficulty. This round lasted for about 75 min.

1. <https://www.geeksforgeeks.org/count-number-of-occurrences-or-frequency-in-a-sorted-array/> (Had to solve for the best complexity)
2. <https://leetcode.com/problems/course-schedule/> (dry run stepwise)
3. Third Ques was based on binary search which i didn't find anywhere.

Round 4(Tech + HR): This round went for about an hour and 20 minutes. The interviewer was friendly and we had a brief discussion about one project that I made using Machine learning. Then he gave 3 coding questions to solve. The questions were based on DP and trees. I had a good time discussing my approach. He seemed satisfied. He also asked follow-up questions based on the primary questions.

1. <https://www.geeksforgeeks.org/burn-the-binary-tree-starting-from-the-target-node/> (Hard Que took me almost 30 min to solve with best possible complexity)
2. <https://leetcode.com/problems/interleaving-string/> (1-Dp approach was required for better complexity)
3. Since I have spent soo much time on the first two questions interviewers didn't go further with the third ques. (They asked thought process for on what factors someone should approach a typical DSA problem by either recursion or iteratively.)

HR Ques:

1. Why should we hire you? (STAR approach is required)
2. Give me your two biggest weaknesses (STAR approach)
3. How are you planning on improving your weakness and what have you done till now?
4. Any Questions for us (I asked a lot of them)

The Final Results were announced after a long wait of 24 days. I was one among the selects.

Now I would like to highlight some of my preparation tips that helped me crack this interview:

- The very important parameter according to me for selection is your communication skills. It all boils down to the fact of how you express your thought process and ideas. Even if you know a lot of stuff, but aren't able to communicate dynamically, it may lead to rejection.
- Be very clear about your Projects and Work Experience(If any).
- In case you have Work-Ex, then 3 Projects would be sufficient & in case you don't have any Work-Ex, 5 Projects would be sufficient.
- Thorough understanding of the fundamentals related to the project Domain(In my case it was ML & Data Science), Tech stack. Focus more on relating the theoretical concepts with real-life examples.
- Don't miss out on anything you have mentioned on your resume!
- Don't neglect the Core Subjects(DBMS, OOPS, CN, OS) on the cost of Coding. (Core Subjects plays a very vital role in the clearance of the Technical Rounds).
- For Core Subjects, you can completely rely on GfG and Youtube Videos. Focus more on Important Topics first.
- Focus more on Important DSA rather than Complex & Tough DSA. Once you are confident about Important ones, you can switch to Tough Ones.
- Practice more Easy & Medium Level Questions, rather than focusing only on hard ones.
- Strike a balance between Core Subjects, Projects, Coding. (VERY IMP).
- Make your own notes and revise them multiple times. The only mantra to crack any Interview is doing revision multiple times. (I revised the core subjects minimum of 8-10 times so that I can answer them fluently during interviews.) Having conceptual clarity is more important than the number of topics.
- Don't panic if you are not able to answer any questions, just stay calm and try your level best to answer.

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Amazon WoW Internship Interview Experience for Data Engineer 2021

- Last Updated : \n24 Jan, 2022

Amazon WoW is a networking platform for all women engineering students in India that connects them to Amazon leaders, recruiters, and the broader Amazon community.

Online test was scheduled on august 2021

Round 1(Online test on Mettl Platform): It consists of 1 coding question and 40 MCQs covering topics like DSA, OOPs, DBMS, Linux, Networking, Software Engineering, etc.

- I was able to pass few test cases from the coding questions and answered MCQs.
- After few weeks I got an email that I have been shortlisted for Data Engineer interview.

Round 2(Technical Interview \xe2\x80\x93 50 mins):

- The interview happened in amazon chime platform
- Tell me about yourself
- Elaborate the projects mentioned in resume
- He gave me three tables and explained their relation. I was asked to write SQL queries to get results from the table. The questions can be easily answered if we are good at joins.
- A python question related to file handling
- An array question based on merge sort

Round 3 (HR + Technical Interview \xe2\x80\x93 50mins):

- Tell me about yourself
- Had discussions about projects in resume
- Challenges faced during the projects
- How did you overcome the difficulties
- The first 30 mins of interview was mainly focused on behavioral questions
- Then he asked me a SQL questions which can solved by aggregate functions
- Another SQL questions which can be solved by window function

Verdict \xe2\x80\x93 Selected

Be strong in SQL joins and get familiarized in window functions. \xc2\xad

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Amazon Interview Experience for SDE (Off-Campus)

- Difficulty Level : \n[Hard](#)
- Last Updated : \n24 Jan, 2022

I attended a hiring event on *Codechef* for Amazon in March or April \xe2\x80\x99. I managed to solve nearly 50% of the questions. So, after nearly 6 months, I got a mail that my profile has been shortlisted from Codechef.

After attending the preparation session for 3-4 times, finally they scheduled my interviews. There were 3 rounds scheduled on the same day.

Round 1(70 mins-Taken by SDE): The interview started off with my introduction and I was asked some questions about my role at previous job. After that I was asked 2-3 questions on leadership principles. \xc2\xa0\xe2\x80\x93>20mins\xc2\xa0

After this, the interviewer asked 2 coding questions.

1. <https://www.geeksforgeeks.org/decode-string-recursively-encoded-count-followed-substring/>. I discussed the stack approach with the interviewer and after that I coded the solution.
2. <https://www.geeksforgeeks.org/check-if-a-binary-tree-is-subtree-of-another-binary-tree/>

After suggesting brute force approach for this, I had to take several hints from the interviewer for the optimal solution(by comparing inorder traversals of both trees). But, finally I got it right and the interviewer was satisfied.

Round 2(60 mins \xe2\x80\x93 Taken by Technical Program Manager-II): Again, the interview started off with my introduction and I was asked some questions about my role at previous job. After that I was asked another 2-3 questions on leadership principles. \xc2\xa0\xe2\x80\x93>20mins

After this, the interviewer asked 2 coding questions.

1. <https://www.geeksforgeeks.org/fix-two-swapped-nodes-of-bst/>. I discussed the approach with the interviewer first. It took some time for me to explain this: When there is more than one pair in inorder traversal which does not follow the property, $in[i] < in[j]$, which one to swap and why?
2. This one was a very specific question. But, after thinking for a while, I realized it was a basic heap question.

I was able to code both questions within time(40 mins), although I realized I gave the wrong TC for one of the questions.\xc2\xxa0

Round 3(60 mins \xe2\x80\x93 Taken by Manager, Software Development): It started with my introduction. After that, it moved to my CV and I was asked to choose a project mentioned in my resume. I was asking various questions about it, but I didn\xe2\x80\x99t go through my project before interview, so I wasn\xe2\x80\x99t able to answer even some of the most basic questions, I was really embarrassed. After that, they said some leadership principles. All of this took 30 mins.

After this, I was asked one coding question

1. <https://www.geeksforgeeks.org/largest-sum-contiguous-subarray/>. Along with with the sum, I also had to print the elements included in the sum. I tried to do this in single traversal only using Kadane\xe2\x80\x99s. But, the time ran out and I failed to explain the approach properly. I felt terrible after this round and I felt like I botched it.\xc2\xxa0

But, I think because my first 2 rounds were good, I got call for the last round.

Round 4(45 mins \xe2\x80\x93 Taken by Manager, Software Development): It started with my introduction and I was asked some basic questions about my role at current company. After that, I was asked one coding question:

1. Given a string containing of digits, print in the below manner:

```
11 -> one 1\r\n21 -> two 1's\r\n3233 -> three 2's, and three 3's
```

I discussed the approach and coded the solution.

After this, I was asked 2-3 more questions on leadership principles. Overall, I think this round was pretty chill.

Verdict: Selected

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Amazon Internship Interview Experience | Off-Campus 2021

- Last Updated : \n12 Jan, 2022

Interview Difficulty Level: Hard

Round 1(Resume Shortlisting): Applied on 9 Oct 2021, got test link around 10 Nov 2021.

Round 2(Online Assessment): There were four sections namely, code debugging, coding, workstyles assessment, and aptitude. The code debugging section consisted of 7 code snippets that were faulty and we had to debug them and find the correct output (20 minutes).

- The coding section consisted of two coding problems and the difficulty was of Leetcode Easy-Medium level (70 minutes).
- <https://practice.geeksforgeeks.org/problems/smallest-distant-window3132/1>
- And other ques I don't remember.
- The work styles assessment was based on the leadership principles of Amazon. There was no time limit for this section.
- The last section was based on aptitude and reasoning questions. There were 24 questions and we had 35 minutes to solve them.

Round 3(Technical Interview): The interview started with a brief introduction about myself and what projects and internships I had done. There were three panelists interviewing me. The interviewers directly jumped into coding and I was given three coding questions in phases that I had to solve. The questions were of Leetcode medium-hard difficulty. This round lasted for about 75 min.

1. <https://www.geeksforgeeks.org/count-number-of-occurrences-or-frequency-in-a-sorted-array/> (Had to solve for the best complexity)
2. <https://leetcode.com/problems/course-schedule/> (dry run stepwise)
3. Third Ques was based on binary search which I didn't find anywhere.

Round 4(Tech + HR): This round went for about an hour and 20 minutes. The interviewer was friendly and we had a brief discussion about one project that I made using Machine learning. Then he gave 3 coding questions to solve. The questions were based on DP and trees. I had a good time discussing my approach. He seemed satisfied. He also asked follow-up questions based on the primary questions.

1. <https://www.geeksforgeeks.org/burn-the-binary-tree-starting-from-the-target-node/> (Hard Que took me almost 30 min to solve with best possible complexity)
2. <https://leetcode.com/problems/interleaving-string/> (1-Dp approach was required for better complexity)
3. Since I have spent soo much time on the first two questions interviewers didn't go further with the third ques. (They asked thought process for on what factors someone should approach a typical DSA problem by either recursion or iteratively.)

HR Ques:

1. Why should we hire you? (STAR approach is required)
2. Give me your two biggest weaknesses (STAR approach)
3. How are you planning on improving your weakness and what have you done till now?
4. Any Questions for us (I asked a lot of them)

The Final Results were announced after a long wait of 24 days. I was one among the selects.

Now I would like to highlight some of my preparation tips that helped me crack this interview:

- The very important parameter according to me for selection is your communication skills. It all boils down to the fact of how you express your thought process and ideas. Even if you know a lot of stuff, but aren't able to communicate dynamically, it may lead to rejection.
- Be very clear about your Projects and Work Experience(If any).
- In case you have Work-Ex, then 3 Projects would be sufficient & in case you don't have any Work-Ex, 5 Projects would be sufficient.
- Thorough understanding of the fundamentals related to the project Domain(In my case it was ML & Data Science), Tech stack. Focus more on relating the theoretical concepts with real-life examples.
- Don't miss out on anything you have mentioned on your resume!
- Don't neglect the Core Subjects(DBMS, OOPS, CN, OS) on the cost of Coding. (Core Subjects plays a very vital role in the clearance of the Technical Rounds).
- For Core Subjects, you can completely rely on GfG and Youtube Videos. Focus more on Important Topics first.
- Focus more on Important DSA rather than Complex & Tough DSA. Once you are confident about Important ones, you can switch to Tough Ones.
- Practice more Easy & Medium Level Questions, rather than focusing only on hard ones.
- Strike a balance between Core Subjects, Projects, Coding. (VERY IMP).
- Make your own notes and revise them multiple times. The only mantra to crack any Interview is doing revision multiple times. (I revised the core subjects minimum of 8-10 times so that I can answer them fluently during interviews.) Having conceptual clarity is more important than the number of topics.
- Don't panic if you are not able to answer any questions, just stay calm and try your level best to answer.

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Amazon Interview Experience (On-Campus)

- Difficulty Level :\n[Hard](#)
- Last Updated :\n12 Jan, 2022

Amazon visited our campus for FTE recruitment in Aug, 2019.\xa0

Round 1(Online Screening Round): There were different sets of questions. Each set had two coding questions and mcqs based mostly on c/c++.\xa0 My coding questions were 1) <https://www.geeksforgeeks.org/counting-inversions/> and 2) finding the number of derangements.\xa0

Round 2(F-2-F): Started straight away with ds algo stuff. First question:\xa0<https://www.geeksforgeeks.org/k-maximum-sum-combinations-two-arrays/>. Second question was based on topological sort of a directed graph. I had to write code for both questions. Attention was given to code quality and edge cases.\xa0

Round 3(F-2-F): Again, the focus was on ds algo.\xa0

- At first, was given a stream of transactions and the task was to find the kth most expensive transaction. A few approaches were discussed, and then I had to code up the best approach I could come up with.\xa0
- The second question was\xca0<https://www.geeksforgeeks.org/find-number-of-islands/>. Had to code it up. The third question was a modification on finding the intersection between two linked lists. There were other small questions in between, specially pertaining to Priority Queue and its implementation.\xa0

Round 4(F-2-F): Given a hierarchical structure, where a node calls another node for a service, and that node may call other node(s) for a service, find the longest time taken for two \xe2\x80\x98leaves\xe2\x80\x99 of this hierarchical structure to communicate with each other. This was just a modified version of finding the longest leaf to leaf path in a tree-like structure.\xa0

- The second question:\xa0<https://www.geeksforgeeks.org/nuts-bolts-problem-lock-key-problem/>\xa0
- 3rd question was finding the largest island in a grid.\xa0
- There were small other questions as well, like the previous round.\xa0
- Had to code everything.\xa0

Round 5(Bar Raiser):\xa0

- Discussion about CV.
- Why I am sitting for coding profile, being from a non CS/IT background.\xa0
- Then, was asked to implement LRU Cache. Special notice was taken on the code.\xa0
- Then, was asked the trapping rain water problem, but do it with O(1) space and single pass. Had to code up the solution.\xa0

\xa0

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Amazon Interview Experience for SDE-1 | Off-Campus 2021

- Last Updated : \n12 Jan, 2022

Role: SDE1

Source: naukri.com

Online Round: 2 Coding Question with Time Complexity Analysis

1. Similar to nearest K coordinates from Origin. (Heap)
2. Little bit of modification of 2-Sum, but I did in Brute Force way and it passed.

In the Last behavioural based MCQ Test.

After 5 days I got an email in which it mentioned that I will be having a quick connect with HR for Rounds Process.

Round 1:

- Quick Intro
- BST Iterator <https://leetcode.com/problems/binary-search-tree-iterator/> (Medium)
- Basic Calculator <https://leetcode.com/problems/basic-calculator/> (Hard)
- I Solved both but for last one my code was not 100% complete as we were running out of time but I gave the approach and final Time Complexity.

Round 2:

- Paint House [https://www.lintcode.com/problem/515/?_from=%5Bx25e2x80x98ladderxe2x80x99&fromId=%5Bx25e2x80x9916xe2x80x99\]](https://www.lintcode.com/problem/515/?_from=%5Bx25e2x80x98ladderxe2x80x99&fromId=%5Bx25e2x80x9916xe2x80x99]) (Premium on Leetcode, so attaching free Resource)
- BFS on Grid, The question was like you are given 2D Matrix with 0,1 and a starting coordinate from that you have to cover all 1's and tell how much minimum time it will take to do that and if any 1 is left return -1.

Round 3(Behavioural, taken by SDM III):

- This Round was like brief Introduction, and that started with LP Questions
- A Deadline you missed.
- A Goal that you thought you will not be able to achieve but you did.
- A most Challenging Task you did.
- CS Fundamentals Questions, like difference between HTTP vs HTTPS, Thread vs Process, Memory Leak in Java, Classfull IP and its all Classes.
- After about a week I got an email that I am having my Last Round Next Week.

Round 4:

- A Small Introduction
- LP Questions
- 1 Coding Questions (Now for this I want to share that Interviewer itself was in doubt, the question was like you are given a Binary Tree with atmost 2 child and every child can have atmost 2 Parents, and you have to find a Maximum Path Sum from Root to Leaf)
- I asked what is the structure of that Node, So he said what you think. I wrote this:

Java

```
class Node
\xc2\xd0\xc2\xd0
{
\xc2\xd0\xc2\xd0
int data;
\xc2\xd0\xc2\xd0
Node left;
\xc2\xd0\xc2\xd0
Node right
\xc2\xd0\xc2\xd0
}
```

- So he said Yes this is, (Now I was confused how come this can have links with Parent, maybe I am not able to get!)

Sample Test Case:

- So, 1st Solution that I gave was normal dfs based that I try every path from root till every Leaf and in that method I take current_sum and one global_sum and update it accordingly.

Java

```

int ans = 0;
List<Integer> finalAns;
private void dfs(TreeNode root, int csum, List<Integer> ds)
{
if(root==null) return;
if(root.left==null && root.right==null)
{
if(csum > ans)
finalAns = ds;
}
ds.add(root.val);
dfs(root.left,csum+root.val,ds);
dfs(root.right,csum+root.val,ds);
ds.remove(ds.size()-1);
}
public List<Integer> solve(TreeNode root)
{
this.ans = 0;
this.finalAns = new ArrayList<Integer>();
dfs(root,0,new ArrayList<Integer>());
return this.finalAns;
}

```

- Time Complexity: O(more than N) I was not able to figure out but it is I guess $O(N^2)$
- So, he told me to optimise it I told him that I will do something Post Order type Traversal and from left and right I will bring answer. But he told me that this will not work, So I was not able to find something better.

Conclusion: Be Confident in LP Questions, discuss Brute Force first.

Verdict: Rejected

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n11 Jan, 2022

Applied through HackerEarth coding challenge for 6 months+ experienced

Round 1(Hackerearth Round \xe2\x80\x93 Coding Challenge): Two questions were asked to solved.

1. Based on the priority queue
2. Based on the map

I solved both questions within 40 minutes.

After few weeks got a call for scheduling interview rounds.

Round 2 (Technical Interview): Two questions were asked, along with the behavioural questions.

1. First question was based on the binary search
2. Second was a DP problem with binary tree.

I was able to solved both the problems, some questions were asked from the previous experience.

Round 3(Technical Interview \xe2\x80\x93 Taken by a SDE-2): Two questions were asked, along with the behavioural questions.

1. First question was similar to the problem <https://www.geeksforgeeks.org/next-greater-element/>
2. Second question was a DP problem.

The questions were followed by questions from previous experience and behavioural questions.

Round 4(Technical Interview \xe2\x80\x93 Taken by a Senior SDM): Two questions were asked

1. First question was OOPs concept based question, I was given with some features which needed to add in the amazon alexa, and asked to implement the generic and maintainable code, using different oops concept.
2. Second question was similar to <https://www.geeksforgeeks.org/the-celebrity-problem/>, They have provided a single array of people and a function knows(a,b) which return true if a knows b otherwise false.

Some more questions from resume, past experiences, college projects and behavioural based \xc2\x96 were asked

Round 5(Bar Raiser Round \xe2\x80\x93 Taken by SDE-2): Two questions along with some resume based and behavioural questions.

1. First question was based on LRU based, the question was framed in a way that you first need to understand the question itself, and ask different questions.
2. Second question was similar to the problem <https://www.geeksforgeeks.org/find-top-k-or-most-frequent-numbers-in-a-stream/>.

Tips:\xc2\x96

1. Thoroughly go through amazon leadership principals as most of the behavioural questions were asked from that only.
2. Be vocal throughout your interview process, incase if you are going in the wrong direction interviewer might help you.
3. Ask questions to clarify the questions that were asked
4. Always be prepared to dry run the code you have written as interviewer might not code in same language as you do.

After giving all the rounds, a few days later got informed that i was selected.

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Amazon WoW Internship Interview Experience 2021

- Last Updated :n09 Jan, 2022

Difficulty Level: \xc2\x80Medium-Hard

Online Assessment 1:

- Date \xe2\x80\x93 17/08/2021
- Mettl Platform \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
- Time \xe2\x80\x93 90 minutes \xc2\x80
- 9 Sections \xe2\x80\x93 41 Questions \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
- 1 Coding questions + 40 Objectives \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

MCQ Topics \xc2\x80(5 Questions Each Section) \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

1. Data Structures and Algorithms \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
2. Networking \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
3. Linux \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
4. Pseudocode \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
5. SQL Queries \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
6. Databases \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
7. Software Testing \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80
8. Software Engineering \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

Online Assessment 2: Date \xe2\x80\x93 25/08/2021

4 Sections \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

1. Code Debugging (6 Code Snippets) \xe2\x80\x93 20 minutes \xc2\x80 \xc2\x80 \xc2\x80
2. Coding Test (2 Coding Questions) \xe2\x80\x93 70 minutes \xc2\x80 \xc2\x80 \xc2\x80
3. Workstyles Assessment \xe2\x80\x93 20 minutes \xc2\x80 \xc2\x80 \xc2\x80
4. Reasoning Ability (24 Questions) \xe2\x80\x93 35 minutes \xc2\x80 \xc2\x80 \xc2\x80

Interview Round: Date \xe2\x80\x93 10/10/2021

Started with the Introduction. Without wasting any second, he came to the coding part \xc2\x80 \xc2\x80 \xc2\x80

He asked a coding question- \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

1. Given an array of strings. Print first non-repeating string from the stream of strings in the given array.

Input -> ["a", "b", "c", "b", "a"] \r\nOutput -> ["a", "a", "a", "a", "c"]

I gave 3 different approaches \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

Approach 1: Brute Force \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

He asked me to optimize it. \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

Approach 2: I gave the second approach by using a queue and a map. \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

But queue operations needed O(n) time so he asked to optimize it and do it in constant time by using some other linear data structure. \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

Approach 3: I didn't know the solution prior so I kept thinking about it. After discussing and thinking a lot I came up with a solution. \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

I explained my approach by using a doubly-linked list and a map. Then he asked me to code it down. \xc2\x80 \xc2\x80 \xc2\x80 \xc2\x80

I gave the whole working code.

I was finally hired for the Internship at Amazon. I would like to thank GeeksforGeeks which helped me a lot in my preparation.

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Amazon Interview Experience for SDE-1 | 1 Year Experienced

- Last Updated : \n28 Dec, 2021

Applied through employee referral. Got an email for giving coding test within couple of days\nc2\x00

Round 1(Coding Round):

1. First question was similar to <https://www.geeksforgeeks.org/find-k-closest-points-to-the-origin/>
2. Given an array of integers, find number of pairs of elements who have sum less than value \xe2\x80\x9cK\xe2\x80\x9d.\xc2\x00

Tip: Solve coding round questions using brute-force solution.

In a couple of days, got a call for scheduling interview rounds.

Round 2(Technical Interview 1): Taken by Senior SDE with 3-4 years experience.\xc2\x00

1. Questions on current work and leadership principles.
2. Find the smallest value in array larger than a given value X. (Discussed Heap solution as well as Sorting + Binary Search solution, asked to code either of the two from scratch (implement heap data structure or merge-sort/quick-sort) as both will have worst case of O(nlogn))\xc2\x00

Round 3(Technical Interview 2): Taken by SDE II with 2+ years experience.

1. Questions of current work and tech stack currently working on.
2. <https://www.geeksforgeeks.org/sort-linked-list-already-sorted-absolute-values/>
3. <https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/>

After this round, received a mail for further rounds

Round 4(Hiring Manager):

1. Detailed discussion around current work, technologies worked on, reasons to look for change and other managerial based questions.
2. <https://www.geeksforgeeks.org/snake-ladder-problem-2/>\xc2\x00

(Initially started solving using DFS by finding all paths but after discussion, landed on BFS solution)

Round 5(Bar Raiser):

1. Detailed discussion around current work and experience
2. <https://www.geeksforgeeks.org/median-of-stream-of-integers-running-integers/>

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Amazon Internship Interview Experience | On-Campus 2021

- Difficulty Level :\n[Easy](#)
- Last Updated :\n28 Dec, 2021

Amazon came for a pool campus placement on October 2021 for the 6 months Software Development Engineer Role. We had a total of 3 rounds (1 Online Coding on Amazon\xe2\x80\x99s Assessment Portal + 2 Technical Interviews). \xc2\xao

Online test was given by around 1000 students.\xc2\xao

Round 1(Online Test): The first round comprised of 4 sections online questions including aptitude, logical, Coding questions, and technical portions (Test Duration: 90 mins):

- Debugging: We had to choose a language and debug up to 7 questions most probably. Codes were very basic like sorting, etc. I completed 6 of them.
- Coding: There were two medium-hard level questions.
- Work-style Assessment: Just try to answer as an ideal employee. Make sure your answers don\xe2\x80\x99t contradict each other.
- Aptitude: Around 25 questions.

Only 118 students were selected for the next round.

Round 2(Technical Interview 1): Round was on Amazon Chime(Test Duration: 75 min)

1. [Find diameter of the tree](#): I answered it, we discussed edge cases and I coded it. I think he found out that I have already done it before so then he asked to do it instead of when it's not necessary to end the path at leaf nodes. It was a simple change so I did that as well.
2. [Count Inversion](#): I was struggling to come up with a solution, so he told me to think about sort algorithms. I did and got it right eventually. I coded it and we were good to go.

He was constantly asking me to speak out my thoughts. It is very important so that interviewer can understand your problem-solving skills and help you wherever needed.

Not sure how many were selected because they got informed privately, I think the number can be around 30 to 50.

Round 3(Technical Interview 2): It happened the next day. It was also on Amazon Chime(Test Duration: 65 min)

1. [Find n\xe2\x80\x99th node from the end of a Linked List](#): I answered using 2 traversals. Then he asked to do it in single traversal. After some time I got it. We discussed edge cases and I coded it.
2. [Find shortest distance between 2 points in a matrix, where 2 points can be anywhere](#): I gave recursion as an approach, he asked me to give time complexity, which I told $O(4^m \cdot 4^n)$ but I think it was wrong. Then he asked me to optimize it, and I gave him DP solution. He asked how I was sure about it, I told that it follows optimal sub-structure and overlapping sub-problems, he seemed convinced. Time was running out so he told me quickly code it but\xe2\x80\x99a
3. In between he told me to stop and asked me about projects. I told him about my Instagram Clone made in Django, so he asked why Django. I told him the reasons. Then he asked whether I have any questions, I went blank and so I asked a stupid question about meaning of 6M Intern which he answered and we were good to go.

Tips:

- Amazon just want to see whether you have good problem-solving skills. If you show them, you are in.
- Do DSA religiously from the beginning. Use GFG, Leetcode, InterviewBit, and Youtube. These are more than enough. Doing Competitive Programming is very helpful.
- **For frequently asked questions:** Make sure you know the best approaches and edge cases, and write the whole code instead of just reading the solutions.
- Start from brute force and keep on optimizing when asked, in order to show you haven't already done the question before.
- Speak while coding or thinking.
- Repeat the question how you have understood it.
- Find edge cases
- Use STAR method for behavioral questions.

Verdict: Result came out after 10 days. 13 students were selected. 2 were from my college. I was one of them ;)

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Amazon Interview Experience (On-Campus)

- Difficulty Level :\n[Hard](#)
- Last Updated :\n10 Jan, 2022

Online Assessment

- 7 easy debugging questions
- A medium-hard difficulty Tree question.
- An easy-medium difficulty Array question.
- 24 general aptitude questions of varying difficulty levels.
- 45-50 work style based assessment

Technical Interview Round 1: The interviewer gave an introduction about himself and asked me for my introduction. Then he directly moved on to the questions.

Two questions were asked

- <https://leetcode.com/problems/search-a-2d-matrix/>. I gave 3 approaches of varying time complexities from $O(nm)$ to $O(\log n + \log m)$. It's always better to provide all the approaches to the interviewer from brute force to fully optimized than giving the most optimized solution straight away.
- <https://leetcode.com/problems/longest-zigzag-path-in-a-binary-tree/>. I struggled a bit on this question but kept thinking out loud. As there was less time left, the interviewer gave me a hint and I was easily able to explain and code the solution after that.

Technical Interview Round 2: The interview started in a similar way as the 1st round with introductions and then moving on to the questions.

Two questions were asked in this round too

- **It was a simple graph coloring based problem and I easily explained my approach and coded the solution.**
- **Find the length of the longest path present in a graph. The path can start from any node and end at any node.** This question was another way of asking for the diameter of the graph. I explained my approach and coded the solution working in $O(n)$ time. A good explanation of the approach can be found here <https://leetcode.com/problems/minimum-height-trees/discuss/923071/Python-Find-diameter-using-2-dfs-explained/754368>

In both the rounds after every approach discussed, the interviewer asked me about the time and space complexities.

Tips:\xc2\xa0

1. Don't be intimidated by the interviewer, he/she is there to help you reach the solution.
2. Thinking out loud is *very important*.
3. Try to convert the interview into a discussion.

Verdict: About 300 students applied for the online assessment out of which 59 got the interview calls, finally 10 got the internship offers and I was one of them.

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Amazon WoW Internship Interview Experience 2021

- Last Updated : \n28 Dec, 2021

I applied for the **2 month SDE intern** role through Amazon WoW drive 2021. There were a total of 3 rounds for people who applied for 2 months internship program and 4-5 rounds for people applying for 6 months internship program.

Round 1: It was an online test on Mettl Platform of 1 hr 30 mins, consisting of 1 coding question and 40 MCQs, 5 MCQ questions in each section where sections included Data Structures, Algorithms, SQL queries, Linux, Networking, Software Engineering.

- The coding question was a greedy one for me which I was able to complete. After a few days, I got a mail that I have been shortlisted for the second round.

Round 2: It was an online test conducted on the AMCAT platform, consisting of 4 sections.

- The first section (20 minutes) was the debugging section and consisted of 7 very easy code snippets which had to be debugged to get the desired output. I was able to do all.
- The second section (70 minutes) was the coding section and consisted of 2 coding questions. The first question was an Easy level greedy problem for me and the second was a hard-level dynamic programming problem.

1. <https://leetcode.com/problems/maximum-units-on-a-truck/>
 2. Given a string str that represents a large number, the task is to find the minimum number of segments the given string can be divided such that each segment is a prime number in the range of 1 to 106. Example: Input: str = "1234567890" Output: 3 (<https://www.geeksforgeeks.org/split-the-given-string-into-primes-digit-dp/>)
- The third section (20 minutes) was Workstyle Assessment. It was kind of a survey.
 - The last section (35 minutes) consisted of Logical Reasoning questions.
 - I did the debugging and the Logical Reasoning section completely. And was able to do both the coding questions as well. After around 15 days, I got a mail that I have been shortlisted for the interview round.

Round 3(Interview Round): It was a 1-hour interview on Amazon Chime.

- The interviewer started with his introduction and then, asked for mine.
- Then, he straight away gave me a coding question. It was a medium-hard level question based on Binary Tree which was Given a binary tree, find the maximum path sum. The path may start and end at any node in the tree. (<https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/>)
- The interviewer seemed satisfied with my approach and asked me to code the solution in any desired language.
- Then, he gave me another coding problem which was based on Dynamic Programming. I was able to convince the interviewer with my approach and coded the solution correctly for the second problem also. Given a text and a wildcard pattern, implement wildcard pattern matching algorithm that finds if wildcard pattern is matched with text. The matching should cover the entire text (not partial text). The wildcard pattern can include the characters '?' and '*' which matches any single character and matches any sequence of characters (including the empty sequence). (

[https://www.geeksforgeeks.org/wildcard-pattern-matching/ \)](https://www.geeksforgeeks.org/wildcard-pattern-matching/)

- The last question was to find the number of times a sorted array was rotated. ([https://www.geeksforgeeks.org/find-rotation-count-rotated-sorted-array/ \)](https://www.geeksforgeeks.org/find-rotation-count-rotated-sorted-array/)

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Amazon Interview Experience for SDE-I (On-Campus)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n21 Dec, 2021

Online Assessment Test: This test consists of 4 sections.\xc2\xab0

1. Debugging(There will be 7 problems and code. You have to debug that code(both logic and syntax)).
2. 2 Coding questions (Medium level)
3. Behavioral (Very Important) \xe2\x80\x93 Most of the candidates thought this as a formality. Don\xt do that, Amazon give importance to its leadership principles and values. Do read it once before test.
4. Mcqs \xe2\x80\x93 (Aptitude and Cs fundamentals)

There were 35 students selected for interviews.

Interview Round-1: After the introduction, he asked me 2 DSA questions.

1. <https://www.geeksforgeeks.org/program-to-count-number-of-connected-components-in-an-undirected-graph/>\xc2\xab0
I gave him 2 approaches. Firstly using normal DFS and second one using DSU data structures. He asked me to code it by second method.
2. Given an integer array of size n. Find number of ways to select a proper subsequence of size of K, such that it makes a number(basically subsequence shouldn\xt start with 0 and it should be of size of K). First I gave him the approach with simple math (select a index as starting of subsequence and calculate no of subsequence.). Then he asked me tell another approach. I came up with a DP solution. He asked me to code it and then asked me how to minimize the space complexity to linear.

This interview was at 12 am. Then I had to give 5 more interviews for Microsoft and Meesho. I got a call for 2nd round at around 8 am.\xc2\xab0

Interview Round-2: After brief introduction, he asked me about my projects. After 5-10 mins discussion, he gave me 2 DSA questions.

1. <https://leetcode.com/problems/duplicate-zeros/> . He was expecting a linear time and constant space complexity solution. Actually for these questions, if you don\xt know the solution beforehand, it\xt really hard to come up with all the optimizations. He actually gave me a hint and I was finally able to give the solution and code.
2. <https://www.geeksforgeeks.org/minimum-steps-reach-target-knight/>\xc2\xab0
I gave him a straightforward BFS solution. He actually asked me jokingly that how many times I have solved this question before \xf0\x9f\x99\x82

Interview Round-3: I got a call straight after round 2 . It was my 8th interview of the night and I was completely exhausted.

- After the introduction, he asked me about my internship experience and we had a discussion about my work there and the tech stack I had previously worked on. Then he gave me a coding problem. It was a long problem and I took 4-5 mins just to understand the problem. Honestly I had no idea how to solve this. But I was telling my thought process to him. He jokingly said, he feels bad for me that after waking up whole night and after 7 interviews I had to solve this hard problem \xf0\x9f\x99\x81 \xc2\xab0Then he asked me another problem similarly to

Subsequence/subarray with given sum And we had a discussion on this approach. Luckily he didn't ask me to code it. He finally said that he got what he was looking for
\\xf0\\x9f\\x99\\x82 \\xf0\\x9f\\x99\\x82\\xc2\\xa0

Selected!!

Later that evening I got to know that I was actually selected for all the 3 companies I had given interviews. I simply couldn't believe it and was out of words. Honestly I don't think I am extremely good at coding. But I had practiced a lot of problems on leetcode and GfG, I had decent knowledge of CS fundamentals (oops, OS, DBMS, CN). My suggestion for any candidates would be know about your projects(what have to used and why have you used it, what problems have you faced during it), solve a lot of problems, be confident. All the best guys. Work hard, good days are coming \\xf0\\x9f\\x99\\x82

Happy Coding!!!\\xc2\\xa0

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Amazon Interview Experience for SDE-1 (On-Campus)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n17 Dec, 2021

There were a total of 4 rounds (1 Coding Test+3 Technical Interviews)

Round 1(Coding Test):\xc2\xd0

1. <https://practice.geeksforgeeks.org/problems/rotate-by-90-degree-1587115621/1>
2. An array is increasing and then decreasing find the point where it stops increasing.

Round 2(Technical Interview 1): The questions asked were:

1. Given an array and an integer K, find the maximum for each and every contiguous subarray of size k. <https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/>
2. Given an array, print the Next Greater Element (NGE) for every element. The Next greater Element for an element x is the first greater element on the right side of x in the array. Elements for which no greater element exist, consider the next greater element as -1.
\xc2\xd0<https://www.geeksforgeeks.org/next-greater-element/>

Round 3(Technical Interview 2):

1. Given a binary tree, print it vertically: <https://www.geeksforgeeks.org/print-binary-tree-vertical-order-set-2/>
2. Convert a given Binary Tree to Doubly Linked List: <https://www.geeksforgeeks.org/in-place-convert-a-given-binary-tree-to-doubly-linked-list/>

Round 4(Technical + Managerial)

1. LRU Cache Implementation: <https://www.geeksforgeeks.org/lru-cache-implementation/>
2. Then they asked me questions from DBMS, Computer Networks, OS.
3. Then there were some basic Hr questions.

Verdict: Selected

Note- I prepared from Geeksforgeeks company-wise questions that part is a gem and Strivers SDE Sheet (<https://takeuforward.org/interviews/strivers-sde-sheet-top-coding-interview-problems/>)

I would say those who are preparing concentrate more and more on DSA that will help you to get through the interview.

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Amazon WoW Interview Experience for SDE-I 2021

- Difficulty Level :\n[Medium](#)
- Last Updated :\n16 Dec, 2021

Amazon announced only women hiring event on June 2021 (Amazon WOW 2021). There was portal where we had to register ourselves. Then an invite for exam is sent to us.

Written Test:

1. Screening test: Computer fundamentals and 1 easy coding question.
2. Standard amazon placement test (Debugging, coding, workstyles assessment, aptitude)

Interview:

- 1 round for 2months summer internship
- 2 rounds for 6months (January \xe2\x80\x93 June) internship
- 3 rounds for FTE
- The results of test were given on September 7th, 2021. But the interviews are scheduled very late for 2022 passouts. My first round was scheduled on November 17th, 2021. The whole process took 4 months from the first test. Keeping patient is the key.

Round 1(November 17th, 2021): The interviewer was Quality Assurance Manager. It was a 1hour round on Amazon chime, the interviewer gave his intro and asked mine. Then he right away gave the ques.

1. <https://www.google.com/amp/s/www.geeksforgeeks.org/sort-array-converting-elements-squares/amp/>. First, I had to tell my approach then, I had to code.
2. <https://practice.geeksforgeeks.org/problems/burning-tree/1>. I solved both of them. Some time was left and he asked me if I have any questions for him. I asked him about how they decide what kind of projects to be assigned to a fresher. He explained it.

Received a mail regarding round 2 next day

Round 2(November 18th, 2021): The interviewer was SDE II. The interviewer introduced himself and asked for mine. Then he asked me a bit about my intern project. Just some basic ques. Then he gave me ques to solve.

- <https://www.google.com/amp/s/www.geeksforgeeks.org/given-a-binary-tree-print-all-root-to-leaf-paths/amp/>. Here I had to return the paths as an array of linked lists. I stored all paths in a 2d array and created linked lists later.
- Some time stamps were given with call id, and call start time, end time, call failure. We have to calculate total call duration for each call id. It was very simple and due to lack of time I just had to tell him my approach.
- Then he asked me if I had any questions for him. I asked him about the work culture and his experience over there and exactly what kind of projects he work on.

After 6 days I received a call from HR on 24th November informing I have cleared round 2 and I have round 3 on same day. Then again it was rescheduled to next day.

Round 3(November 25th, 2021): The interviewer was a SDM with 5years experience at amazon. She joined 15min late.\xc2\xab0

- She gave her intro and asked mine. Then she asked me to explain my project and write 2-3lines

of basic algorithm I have used for my project. Then she asked about a time when I had tight deadlines and how did I handle it.

- Then she gave me ques to solve. She was in lot of hurry she did not let me explain everything completely. I was cut off in middle while explaning the projects.
- <https://www.geeksforgeeks.org/stock-buy-sell/>. Explained my approach and coded within 5mins.
- <https://www.google.com/amp/s/www.geeksforgeeks.org/given-a-number-find-next-smallest-palindrome-larger-than-this-number/amp/>. This was tough question but luckily I have seen it before in amazon interview experiences on GFG. So I could solve it. I had to write the pseudo code since she was on hurry.
- Then she asked me if I had any questions. I asked about the training given to freshers. She explained about it. Then I asked how did she become SDE I to SDM in 5 years and said that it was really admirable. She gave a compliment that researching on her shows my interest in the field and I am proactive which is exactly needed for this kind of job. Brownie points?. And that concluded the session
- Received an email informing that I am given an offer at Amazon as FTE on December 1st, 2021.Thanks to GFG, Leetcode, Interviewbit.

VERDICT: SELECTED.

Tips:

1. Read the interview experiences as many as possible they help a lot.
2. Always ask questions to the interviewer in the end of interview.
3. Be honest and keep cool.
4. Prepare some behavioural questions before giving the interview.
5. It's better if you have practiced intro and projects out loud to yourself.
6. Practice a lot, cover all the basic problems and practice on GFG, Leetcode, Interviewbit.

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Amazon Interview Experience for Support Engineer Intern

- Difficulty Level :\n[Easy](#)
- Last Updated :\n14 Dec, 2021

I am really glad to share that I have joined Amazon as an Intern.

In this article, i will be sharing my first FAANG(MAANG) Interview Experience, so my resume got shortlisted after applying to Amazon through campus placements.

OA Assessment(Online Round): The first was an OA round, conducted on Cocubes platform

- The test contained 5 sections each containing 5 MCQ questions out of which there was 1 coding section with one question that had strict test cases. The other 4 sections had MCQ questions on DBMS, Networking, DSA and Basics Computing Skills.
- I still remember the coding question well, it was to convert infix to postfix. I attempted the question in Java.

On-Call Tech Round (First Telephonic Round): In this round, the interviewer introduced himself and then he asked me to introduce myself. He asked a few questions about my project. He then asked politely if we could start with the interview. He gave me two questions (Medium and Easy Level). This round lasted 45 minutes. The first question he asked was to swap linked list nodes.

1. Given a linked list and two keys in it, swap nodes for two given keys. Nodes should be swapped by changing links. \xc2\x9a0[Swap Linked List](#) on GfG. I went on with the brute force approach and solved the question, by explaining at each step. The interviewer then asked me to optimise it using a single loop and i was able to do that. I solved this question and interacted with the interviewer explaining him in each step which approach I am using.
2. The second question asked was : [To check if a string is rearranged can it form a palindrome or not](#). \xc2\x9a0As the interviewer was running a bit late, he just asked me to describe the approach \xe2\x80\x99d use to solve this question.

Behavioral and OS+Networking Round (LAST ROUND): So the interviewer was the best!! She was very polite. The interview started with her introducing herself, and then she asked me to introduce myself. The interview started with behavioral questions and this totally depends on your answers. Make sure you go through the Amazon company policies before the round.

After the behavioral round she said let\x80\x99s start with the technical part. The round lasted one hour, and the questions asked were mostly from Networking and OS.

Few questions asked were:

1. What are the HTTP and the HTTPS protocol?
2. What is the DNS?
3. What is the TCP protocol?
4. What is thread in OS?
5. What is a process? What are the different states of a process?
6. What is the difference between paging and segmentation?

After the interview, She asked if I had any questions, I asked how was her experience in Amazon being a Support Engineer?

I got my offer letter after 10 days of the last round.

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Amazon Interview Experience | On-Campus 2021

- Difficulty Level :\n[Medium](#)
- Last Updated :\n14 Dec, 2021

The whole process consisted of one coding round and 3 interview rounds. Due to covid, the whole process was virtual.\xc2\xab0

Online Coding Round: It was conducted on AMCAT and it had 5 sections.\xc2\xab0

- A debugging section, coding questions, feedback, aptitude, and personality assessment.\xc2\xab0
- One had attempt both the coding questions, all debugging questions, and all aptitude questions correctly in order to get shortlisted.

Round 1: The interviewer was a straight-to-the-business man. And started the interview without introduction.\xc2\xab0

- He first asked about this question: <https://leetcode.com/problems/majority-element-ii/>. I gave a brute force solution first, to which he asked TC and SC. He then asked to optimize it. I then explained \xc2\xab0Moore\xe2\x80\x99s Voting Algorithm. He was satisfied with my approach but didn\xe2\x80\x99t ask me to code it.\xc2\xab0
- He then moved on to ask questions on sorting algos. He asked about the best case and worst case TC of quick sort. Then he asked me to code it.\xc2\xab0
- Further, he asked me to implement merge sort. During implementation, he changed the data structure from array to linked list, and asked me to write code for it. As we were running short on time, he told me to stop coding, and started rapid firing questions on TC of merge sort in various scenarios. This went on for about 10 mins.\xc2\xab0
- In the end, he asked if I have any questions. We must ask genuine questions, which show our interest in the company. He then wished me luck for further rounds.

Round 2: This time too, the interviewer didn\xe2\x80\x99t waste time and straight away gave me a problem.\xc2\xab0

- It was basically a problem of graphs, where each node is a string of a given array. And, we had to use DSU to solve it. I told my approach and coded it efficiently. \xc2\xab0He was really impressed and gave me another problem immediately.\xc2\xab0
- It was <https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/>. I first gave a brute force solution of O(nm). He told me to optimize it, then I gave him a binary search solution of O(nlogn) TC. Still he, told me to further optimize it. I wasn\xe2\x80\x99t able to come up with a solution, so he provided a hint. The optimal solution immediately clicked and I told it to him. He was quite satisfied and wished me luck for next round.

Round 3: The interviewer was an experienced guy with over 15 years spent in amazon.\xc2\xab0

- He asked me to introduce myself, and give a brief overview of my projects.\xc2\xab0
- He asked me to share my screen and open the project, as I hadn\xe2\x80\x99t deployed it.\xc2\xab0
- He asked about the implementation of various features and why had I added them. He just wanted to assess how do I handle new projects.\xc2\xab0
- He then moved on to OS questions and started with deadlock. He asked me about various ways to prevent a deadlock, and how does Windows do it. The discussion further went on to scheduling algos.\xc2\xab0

- Post this, he asked me this question <https://www.geeksforgeeks.org/largest-sum-contiguous-subarray/>. I started with brute force, and finally gave the optimal Kadane's algo. He was satisfied with my explanation.
- He then asked if I had any questions for him. I asked about his experience so far with Amazon. He happily explained it for about 5 mins. He then told me that you'll enjoy working at Amazon. This gave me a strong hunch that I selected.

After 1 hour the results were announced and 9 were given the offer including me. I rejected it because I had another offer from Zomato and decided to go with that.

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Amazon Interview Experience

- Difficulty Level :\n[Easy](#)
- Last Updated :\n14 Dec, 2021

Round 1(Online Test):

- Debugging: 7 easy debugging questions
- Question-based on the tree. The difficulty level was medium-hard.
- Question-based on sorting. The difficulty level was easy-medium.
- 45-50 workstyle based assessment
- General Aptitude: 24 questions of varying difficulty levels.

Technical Interview Round 1:

- [Zig-zag traversal of a given binary tree.\xc2\xab0](#)
- [Lowest common ancestor of a given n-ary tree](#)

Technical Interview Round 2:

- [Check if a given binary tree is a valid BST](#). I was asked not to use inorder traversal. So I told him an approach using INT_MIN and INT_MAX which got accepted.
- [Given a stream of integers, find the top K most frequent integers.](#)

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Amazon 6M Internship Interview Experience | On-Campus 2021

- Difficulty Level :\n[Medium](#)
- Last Updated :\n14 Dec, 2021

There was a total of 3 rounds of interviews. One online test and 2 technical interview rounds\nc2\x00

Online Coding Round: \xc2\x00

- 7 easy debugging questions related to algorithms to be done in 20 minutes.
- 2 coding questions with varying difficulty of medium to hard be solved in 70 minutes. I was given the following two problems:
- Least Number of Unique Integers after k-removals.
- \xc2\x0A variation of [Minimum cost to connect all cities](#).
- Questions based on behavior and work style. It takes about 20 minutes.
- 24 reasoning questions to be solved in 35 minutes.

Interview Round 1: The interview was conducted on the Amazon Chime Platform, and it took about 1hour 20mins. The interview started with a basic self-introduction and then the interviewer gave me 2 DSA problems to solve.

- <https://www.geeksforgeeks.org/find-the-smallest-positive-number-missing-from-an-unsorted-array/>
- Given a shell command to execute print what will be the directory path. [Hint: An easy stack-based implementation]
- I solved both questions and was selected for Round 2 (around 30 people out of 100 moved to round 2).

Interview Round 2: The interview was conducted on the Amazon Chime Platform, and it took about 1hour. The interview started with a basic self-introduction and then the interviewer gave me 2 DSA problems to solve. After that I was asked questions from my resume, projects for about 5 minutes.

- <https://www.geeksforgeeks.org/print-all-pairs-with-given-sum/>
- \xc2\x0A<https://www.geeksforgeeks.org/count-number-of-occurrences-or-frequency-in-a-sorted-array/>
- I was able to solve both questions optimally, however, for the 2nd question the interviewer asked to implement the lower and upper bound functions from scratch. I was unable to implement them, unfortunately.

Finally, **16 people out of 30 from Round 2** were selected for 6M intern and I was unfortunately not among them.\xc2\x00

[**Note:** They often ask to implement algorithms like Sort, Binary Search, Lower/Upper Bound from scratch so make sure you are thorough with all the implementation.]

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Amazon Interview Experience for SDE-1 (On-Campus)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n14 Dec, 2021

There were a total of 4 rounds (1 Coding Test+3 Technical Interviews)

Round 1 (Coding Test): This round had 4 sections, debugging, coding, Workstyle Assessment, and aptitude. Debugging and aptitude were easy and didn't even require any preparation.

1. Given an expression in the form of a string $A+B=C$, where any two of A, B, and C were given, you had to find out the value of the third variable.
2. <https://www.geeksforgeeks.org/find-row-with-maximum-sum-in-a-matrix/>

Round 2(Technical Interview 1):

1. <https://www.geeksforgeeks.org/rotate-ring-matrix-anticlockwise-k-elements/>
2. <https://www.geeksforgeeks.org/fix-two-swapped-nodes-of-bst/>

Round 3(Technical Interview 2):

1. Given 2 numbers N and M count the number of set bits in them. He first asked me to make a function that returns the number of set bits of a number, then asked me to code the solution. He wanted the most optimized solution something like this. <https://www.geeksforgeeks.org/count-total-set-bits-in-all-numbers-from-1-to-n-set-2/>
2. <https://www.geeksforgeeks.org/convert-given-binary-tree-doubly-linked-list-set-3/>
3. Then he asked for a few OS and networking questions like the Difference between semaphore and mutex, the Difference between TCP and UDP, and what is Banker's algorithm. Then he jumped to my CV and asked about the Internship I did.

Round 4(Technical and Managerial):

1. Which sorting algorithm would be appropriate to sort a line of almirahs according to their height so that my effort is minimum. (Selection sort)
2. <https://www.geeksforgeeks.org/check-two-nodes-cousins-binary-tree/> in one single pass.
3. Tell me about a time when you were faced with a complex problem and what solution you came up with? Then he asked if I could have done anything different and better.

In the end, there were 8 students who gave 4 rounds and 6/8 were selected including me

Note: I prepared for DSA from Striver's SDE sheet (<https://takeuforward.org/interviews/strivers-sde-sheet-top-coding-interview-problems/>) and from GeeksforGeeks company questions and leetcode.

All the best to everyone who is preparing for amazon.

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Amazon Interview Experience | Off-Campus 2021

- Last Updated : \n28 Dec, 2021

Round 1(Coding Assessment): It has 2 Coding Question of medium-hard level. I gave the test along time back, don't exactly remember the questions but I was able to do only one of them completely.

Suggestion: I would suggest doing coding practice from sites like GeeksforGeeks, Leetcode etc as it will give the confidence to solve problems.

Tips:

- Don't spend too much time on the first question you pick, if you are not able to do the first one try doing the second.
- I got a call for the interview along time later.
- I wasn't prepared for interviewed at that time, I asked for few weeks of time for preparation and they gave me around 1-2 weeks.

3 rounds of Interviews was scheduled one day.

Round 2(Technical Interview Round 1): The interviewer was SDE3, He asked for an introduction.

- Then he asked me a coding question on Complete Binary tree. I didn't know exactly about complete binary tree so he explained me.
- Question: <https://www.geeksforgeeks.org/find-value-k-in-given-complete-binary-tree-with-values-indexed-from-1-to-n/>
- I never did the question before so I took time to understand a complete binary tree and then come with a solution in $O(\log N)$ time complexity. I started with basics and first gave a solution in $O(N)$ time complexity then optimized it later.
- Then he asked me another question related to it.
- Question: Determine number of nodes in given Complete Binary Tree with values indexed from 1 to N.
- He asked me to use the 1st question solution and come up with an optimized solution for 2nd question, which I did quickly.
- He seems okay as I did the second question really quick.

Tips: Don't bother if you haven't heard about the question before, try to understand the question and the interviewer will also drop some hints, try to pick them.

Round 3(Technical Interview Round 2): It was taken by 2 interviewers but only one of them was asking questions.

- Initially they asked for an intro, then about projects I did in my previous company.
- They asked me some leadership principle(LP) questions. I don't exactly remember the LP questions but one of them was like :
- What is the most challenging project you did previously and how did you manage?
- Then he asked me two question:
- Question 1: <https://www.geeksforgeeks.org/lru-cache-implementation/>
- He asked me the approach first and then asked to code, he asked why I used list instead of dequeue? and what is the time complexity of each operation?
- Question 2: <https://www.geeksforgeeks.org/connect-n-ropes-minimum-cost/>
- I did both the question in the most optimized way and wrote the code for both of them.

Tips: Just doing the question isn't important, you should also know why you are using certain data structure and not any other.

While practicing question, try to understand the data structure that you are using.

Round 4(Managerial Round): It consists of basic questions like

- What is acid properties?
- [What is the difference between http and https.](#)
- Then he asked me leadership questions which I don't exactly remember.

Tips:

- In all of the leadership questions, you have to answer using your past experiences and include any of the leadership principles in your answer.
- Try to answer the exact question which is asked from you.

Round 5(Technical Round): They asked me 1 coding question and 1-2 LP questions.

- When did you exceed your deadline for a given task? What did your manager said and how did you manage?
- <https://www.geeksforgeeks.org/find-maximum-meetings-in-one-room/>

Verdict: Selected, I accepted the offer.

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Amazon Interview Experience for SDE-1 | On-Campus

- Last Updated : Nov, 2021

It consisted of 2 rounds, first an online round and then later a F2F interview.

Online Round: The first round consisted of:

- 7 debugging questions (20 mins)
- 24 MCQs (reasoning based) (35 mins)
- 2 programming questions (70 mins)
- Behavioral questions (10 mins)

Programming Questions:

- Given a 2D array ($m \times n$) in which all the rows and all the columns are sorted separately, you have to find an element (given) in it.

Ex : [2 4 8 10 13] [6 11 12 17] [5 7 12 15 18] Find 7 in it.

Approach: I used simple binary search over row and column separately in two loops (just in case anyone of m and n is very large as compared to the other). Time comp. $O(\min(m, n) * \log(\max(m, n)))$

- You are given an array A of size $m \times n$ matrix. It contains 1, 0 where 1 means path is allowed and 0 means path is not allowed. One cell contains 989. You have to start with cell (0, 0) and find out whether it is possible to reach at the cell which contains 989.

Ex: A: {1, 1, 0} {9, 1, 0} {0, 0, 1} Ans : 1

Approach: Simple bfs would do while maintaining a visited matrix to see if the cell has not already been visited.

(similar to [rat in a maze](#) problem).

Technical + HR Round: This round lasted for around 45-50 mins. The interviewer was pretty cool and exchanged pleasantries with me.

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Amazon Interview Experience for Intern+SDE-1 (On-Campus)

- Difficulty Level :\n[Easy](#)
- Last Updated :\n30 Nov, 2021

Round 1(Online Test): it was the first round with 4 sections.

1. Code Debugging test
2. 2 coding questions(70 min)
3. Personality Questions
4. Logical Reasoning

Round 2(Technical Interview 60 min): First, the interviewers introduced themselves and then asked to introduce myself. Then he asked about the projects I did. After an introductory discussion on projects, he gave me 3 coding questions on their personal live code environment.

He asked me to explain the approach first and then code it down. I had to explain the time complexity of each solution and optimal code if possible with lesser time complexity.

1. <https://www.geeksforgeeks.org/find-maximum-number-can-formed-digits-number-reviewed/>
2. <https://www.geeksforgeeks.org/find-the-maximum-element-in-an-array-which-is-first-increasing-and-then-decreasing/>
3. <https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/>

Round 3(Technical Interview 120 min): Similar to the first round there was a brief introduction from both sides. This round was coding plus the kind of HR. After 2 coding questions, I was asked to describe a tough situation that I faced while completing any project of mine, what was my target, what I did to overcome it, and what was the end result.

1. <https://www.geeksforgeeks.org/merge-k-sorted-linked-lists-set-2-using-min-heap/>
2. <https://www.geeksforgeeks.org/convert-normal-bst-balanced-bst/>

Verdict: Selected

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Amazon Interview Experience for SDE-II (Frontend)

- Difficulty Level :\nEasy
- Last Updated :\n16 Nov, 2021

There is hardly any interview experience for SDE-2 frontend profile at Amazon, So, I felt it as my responsibility to write this one. I hope it will give you a glimpse of it and help you.

I have 3+ years of experience in frontend development. I got a call through referral program in September from Amazon Hyderabad. The interview process was as below \xe2\x80\x93

Round 1 (Online Test \xe2\x80\x93 Time: 2 hrs) \xe2\x80\x93 10 MCQ questions on HTML, JS and CSS. 1 Machine coding question \xe2\x80\x93 Make an image carousel in vanilla JS. **Googling is allowed**

Round 2 (F2F Technical \xe2\x80\x93 Time: 1 hr) \xe2\x80\x93 15-20 minutes \xe2\x80\x93 behavioral assessment (2 or 3 behavioral questions). Remaining time \xe2\x80\x93 On a shared text editor (<https://livecode.com/>), asked to make a 5 star rating component using JS, HTML and CSS

Round 3 (F2F Technical \xe2\x80\x93 Time: 1 hr) \xe2\x80\x93 15-20 minutes \xe2\x80\x93 behavioral assessment (2 or 3 behavioral questions)
Remaining time \xe2\x80\x93 On a shared drawing tool (<https://www.invisionapp.com/>), asked to design a frontend system for a newspaper site\x80\x99s home page. The area to work upon are \xe2\x80\x93

1. The design and components of the home page.
2. How to make it mobile friendly? (Ans: PWA)
3. How to make the rendering faster? (Ans: Use of caching, service workers)
4. How to make it highly available in case of heavy load? (Ans: Use of multiple servers)

Make sure you study about all the caching mechanisms and good system design practices.\xc2\xxa0
Refer: <https://www.youtube.com/watch?v=wXRr9fGCBRM>

Round 4 (F2F Technical \xe2\x80\x93 Time: 1 hr) \xe2\x80\x93 15-20 minutes \xe2\x80\x93 behavioral assessment (2 or 3 behavioral questions). Remaining time \xe2\x80\x93 On a shared text editor (<https://livecode.com/>), asked to make a component similar to Whatsapp\x80\x99s last seen. Provided the date, it should show one of the following message-\xc2\xxa0

- last seen just now
- last seen a minute ago
- last seen an hour ago
- last seen a month ago
- last seen an year ago

Other requirements \xe2\x80\x93 Update message dynamically according to the current time.
After my implementation, we spent rest of the time optimizing it.

Round 5 (F2F Technical \xe2\x80\x93 Time: 1.5 hr) \xe2\x80\x93 30 minutes \xe2\x80\x93 behavioral assessment (2 or 3 behavioral questions)\xc2\xxa0

- Remaining time \xe2\x80\x93 On a shared text editor (<https://livecode.com/>), asked to implement a social network system for an organization.\xc2\xxa0
- Working \xe2\x80\x93 The system would allow an employee to log into the application and see

all the employees list. Employees can chat with each other if they are friends.

- Problem statement \xe2\x80\x93 To make someone your friend, you need to have at least one mutual friend. So, a user should be shown the list of minimum employees he/she would have to be friends with to finally make someone his/her friend.
- I told them about finding the shortest path to reach from A to B (did a brute force recursion). After that, he asked me to implement the whole code in HTML and JS. Then a discussion on optimizing the implementation/data-fetching carried on.

Verdict \xe2\x80\x93 Not selected

Tip \xe2\x80\x93 Prepare behavioral questions as many as possible.

\xc2\xa0

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Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n10 Nov, 2021

Recruiter reached out to me on LinkedIn in the month of September stating that Amazon is actively recruiting for SDEs and that my profile matches. She sent me the Job Description and asked me if I wanted to proceed. I did. I am no competitive coder and wasn't even actively preparing for a product based company but I was up for the challenge. I wanted to use these as mock rounds and learn from my mistakes and improve. I've never had a coding interview before despite having 1 year work experience and 6 months internship in a startup. \xc2\x80

Round 1: Online Assessment \xc2\x80

1. <https://leetcode.com/problems/shortest-path-in-a-grid-with-obstacles-elimination/>
2. <https://blog.fearcat.in/a?ID=01350-4d5bbfc5-11e2-4a88-987c-20cdebfbff2c>
3. Describe approach used and write time complexity of above solutions.

Phone Interview with Recruiter: \xc2\x80[Duration: 45 minutes]

1. Tell me about yourself
2. Willing to relocate?
3. Current Team structure at work and responsibilities.
4. What percentage of my job is dedicated to developing new features, maintenance, testing, code review and architecture?
5. Quick sort, merge sort, radix sort, insertion sort and heap sort. Advantages and disadvantages of each. Suitable for which input types?
6. HashTable, HashSet and HashMap differences. Time complexities in best case and worst case.
7. What are hash collisions and what are some methods to avoid them?
8. When to use BFS and DFS traversals? What are some algorithms?

After 2 weeks \xe2\x80\x93 my virtual interviews were scheduled. I practiced on GfG Amazon Interview Sets, LeetCode, Educative.io, etc.\xc2\x80

There were 4 rounds spanning 2 consecutive days.

Virtual Interview \xe2\x80\x93 Round 1: [Duration 1 hour]

1. Favorite principle from Amazon Leadership Principles.
2. Time when I failed after a huge obstacle
3. Time when I succeeded after a huge obstacle
4. When I didn't have sufficient requirements.
5. Design an Office Structure with different classes interactive classes like (Employees, Insurance, Clients) and implement functions for the queries that Interviewer gave.

Virtual Interview \xe2\x80\x93 Round 2: [Duration 1 hour]

1. What I like and dislike about my current employer.
2. Time when I worked against deadlines to get a job done.
3. Set a goal to do better and failed.
4. Honest Review of how I prepared for Amazon
5. Given a Pile of Books store it in an efficient data structure and implement retrieval, insertion and deletion functions \xe2\x80\x93 specific books, random books, set of books. Was asked about

the internal working of Data Structures that I chose and was asked about the time complexity of each. I was asked to write a production ready code which handles edge cases and throws appropriate Exception messages.

(I let some bad inputs slip through which was pointed out by the interviewer and then when I got to solve it \xe2\x80\x93 the time was up. I think this was a bad sign on my end too.)

Virtual Interview \xe2\x80\x93 Round 3 [Duration 1 hour]:

1. Implement an emergency response system with an observer pattern.
2. Time when I couldn't solve a technical problem

(This round was shorter because I was experiencing Internet issues. This negatively impacted my performance \xe2\x80\x93 I was scared and went blank. I think this could be detrimental in my candidacy)

Virtual Interview \xe2\x80\x93 Round 4: [Duration 1 hour]

1. Time when I stepped up and led a team
2. Time when I went above and beyond the said job description
3. Implement code for the Given Venn Diagram of 2 objects and write functions for some properties of intersections like A \xe2\x88\x9a B and A \xe2\x88\x9a B \xe2\x8a\x86 A.

(This was actually a fun round and it got easier once I had an example given to me.)

Verdict: Unsuccessful. But I\xe2\x80\x99m happy I made it this far with moderate prep.

Overall Suggestions: \xc2\xab

- They spend about 30 minutes on behavioral questions and want to get to the depth of it. So get to all the nitty gritty stuff.
- Stay confident with your answer and try to defend it to the best ability. If there\xe2\x80\x99s an error, or edge case the interviewer will let you know. Acknowledge it and work it from there. They want to know that you\xe2\x80\x99d be coachable too.
- Ask loads of clarifying questions, discuss approaches before and if the interviewer asks to proceed \xe2\x80\x93 only then code. I made the mistake of diving code first in one of the rounds and the interviewer asked me to start from the beginning.
- In the 3 coding rounds, you can mess up in only 1 round as it\xe2\x80\x99s a cumulative offer. You should display consistency so that the other 2 interviewers can defend your skillset for the hard round.

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Amazon Interview Experience for SDE 1

- Difficulty Level : [Hard](#)
- Last Updated : [10 Nov, 2021](#)

I was reached by a Talent Acquisition Specialist from Amazon via my [Instahyre](#) profile a month ago for the SDE 1 Position.

Fast forward to that , I was informed that as a selection procedure there would be 5 rounds total (One OA + 4 interviews).

I cleared the OA round. The further interviews went like this.

Round 1 : (Algorithms and DSA)

1. There are N gas stations along a circular route, where the amount of gas at the ith station is $gas[i]$. You have a car with an unlimited gas tank and it costs $cost[i]$ of gas to travel from the ith station to its next ($i + 1$) th station. You begin the journey with an empty tank at one of the gas stations. Given two integer arrays gas and $cost$, return the starting gas station.
2. [Print all the leaves of the binary tree.](#)
3. [Right view of binary tree](#)

Round 2 : (Problem Solving, CS fundamentals and Coding)

1. [Bottom view of binary tree](#) in both BFS and DFS.
2. Given a directory , where files are created , stored and deleted as required. You are given each file's creation time and deletion time. You need to find out the number of total files present at any instant in the directory.

Note: This is a Greedy problem. It's similar to the question [Minimum Number of Platforms Required for a Railway/Bus Station](#). A little brainstorming helped me land to the solution. The interviewer was satisfied with the optimal time and space complexity.

Round 3: (Hiring Manager and Technical)

The interviewer was the Manager and in this round you should expect questions related to HR , Leadership Principles and coding questions as well.

Initially the interviewer asked me for the introduction followed by many situational based questions. They are expecting answers in **STAR Format** (S Situation , T Task , A Action , R Result) which should clearly reflect the 14 Leadership Principles followed by Amazon.

Thereafter , some technical questions were asked followed by one designing question.

- [Design a LRU cache](#) with optimal code.

Round 4 : (Hiring Manager and Technical)

The interview was taken by a SDE 2 belonging from a different office of Amazon.

I was asked to give my introduction and some situational based questions. Thereafter he asked about my past organizations where I have worked on earlier.

In \xe2\x80\x93 depth details and follow-up questions were asked regarding the projects to test my knowledge.\xc2\xa0

1. [Connect n ropes with minimum cost.](#) I used Heap to solve it , so heap related questions were asked.
2. [Algorithm for implementation of Min \xe2\x80\x93 Heap.](#)

Takeaway \xf0\x9f\x98\x89

- For every coding question being asked , write the clean and optimal code with explanations.
- Approach to questions confidently and slowly.
- Keep the interview well-communicative.
- Think loudly and have a \xf0\x9f\x99\x82 on your face. All the best !

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Amazon Wow Interview Experience 2021

- Difficulty Level :\n[Hard](#)
- Last Updated :\n04 Mar, 2022

There are 2 online coding rounds along were there. The first online round has some questions related to pseudo-code also. The second online round has questions related to CN, DBMS, and OS also along with 2 coding questions.

Round 1: Interview

- Given a matrix n*m initially having 0. You keep assigning 1 to given coordinates find no of connected components.
- Given a vector of coordinates.\xc2\xad
- I started by giving a DFS based approach which I optimized by using a map such that for every new coordinate we check if any of its adjacent elements is already present then do not increase the count otherwise increase the count.
- Find a minimum no of transactions to settle a debt.
- <https://www.geeksforgeeks.org/minimize-cash-flow-among-given-set-friends-borrowed-money/>

Verdict: Rejected

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Amazon WOW Interview Experience 2021

- Difficulty Level :\nHard
- Last Updated :\n04 Mar, 2022

Amaze wow is a recruitment drive for women conducted every year.

- 6 months and FTE roles for final year students.
- 2 months intern role for pre-final year students

I applied for 2 month SDE intern through Amaze WOW 2021. There were total three rounds for 2 months internship

Round 1: 1 coding Questions and 40 MCQ covering topics mentioned below

- Data Structure
- Algorithms
- Linux
- Software Engineering
- DBMS
- Networking
- OS
- OOPS

I was able to pass all test cases. This round was open for 16-17th August and On 23th August I got mail for second round

1 hr 30 minutes was allocated for this round.

Round 2: The first section (20 minutes) was the debugging section and consisted of 7 very easy code snippets which had to be debugged to get the desired output. These questions were very easy. You have to try to find out logical error like you should replace `\xe2\x80\x98>\xe2\x80\x99` with `\xe2\x80\x98<\xe2\x80\x99`, one of them was based on selection sort. I was able to debug all 7.

- The second section (70 minutes) was the coding section and consisted of 2 coding questions. The first question was a medium level hashmap problem for me and in the second question, we have to sort list based on different parameters(In this question we have to use comparator interface in java). I was able to solve pass all the test cases of both problems.
- The third section (20 minutes) was Workstyle Assessment.
- Fourth section (35 minutes) consisted of Logical Reasoning questions.

I got mail on 7th September that I was shortlisted for interview.

Round 3: My interview was on 11th October. It was one hour interview on Amazon chime.

2 coding questions

1. <https://www.geeksforgeeks.org/sort-an-array-according-to-absolute-difference-with-given-value/>
2. Construct balanced BST from sorted list.

Always remember that interviewers are always there to help you . Think out loud and discuss your approach with them.

VERDICT: SELECTED

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Amazon Interview Experience for SDE-1 Intern (On-Campus)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n26 Oct, 2021

Round 1(Online Coding Round):

Five components (2.5 hours):

1. **Coding:** 2 LC Medium level story-based problems. One on **Binomial Coefficients** (use DP to avoid TLE) and another on **Heaps**. I passed 10/10 on Q1 and 9/10 on Q2. Practice the past year\xe2\x80\x99s archives extensively to get an overall idea.
2. **Debugging:** 7 questions. Not hard as long as you have a good understanding of any of the OO languages (preferably C++)
3. **Workstyle Assessment (HR)** : 50 questions. You have to move the slider to your inclination for the particular question. Keep in mind the 14 Amazon Leadership Principles while attempting this section. \xc2\x90
4. **Reasoning Ability (Aptitude):** 24 questions. Try to solve as much as you can, as many of the questions are follow-ups of the previous question. \xc2\x90
5. **Feedback Form:** I solved all the questions in the given time frame (and had 20 minutes to spare). Each section has an individual timer, so always check how long a problem is taking to be solved. You have to solve every question to get a chance to clear this round, as the competition was very high. Only **40/1000** candidates were selected from this round. \xc2\x90

In 4 days, I received the invitation for the technical rounds. \xc2\x90

Round 2(Online Round 1): Amazon Chime \xe2\x80\x93 45 mins

The interviewer was very strict on the timing. He stated that he would give two problems, and I was supposed to provide him with the optimized solution in the first go (unlike the usual method of starting from naive and reaching optimized)

1. <https://www.geeksforgeeks.org/in-place-convert-a-given-binary-tree-to-doubly-linked-list/>
2. Given an array of strings with each string denoting a number, find the second largest number without doing type conversion (as the string value can be extremely high, and converting will not be efficient). \xc2\x90I gave him an answer using the strcmp() method. He gave me an edge case, and I fixed it by checking the string size also in the condition. There were only 5 minutes left, so I typed out the program as fast as I could while explaining the logic on the side. He asked the TC and SC, and I answered it right as well. \xc2\x90

I asked him a question based on the culture at Amazon, and after answering it, he wished me luck on the following round, and the interview ended. After this round, I felt much more confident, and the second round was scheduled just 1 hour later. \xc2\x90

Round 3(Online Round 2): \xc2\x90Amazon Chime \xe2\x80\x93 45 mins

This time, the interview started with introducing ourselves to each other. The interviewer asked me about my previous projects and internships. As I had done Open-Source in the past, she asked me about my work\xe2\x80\x99s impact. \xc2\x90I then talked about Javascript, Typescript, and React. She then asked in-depth about a project I put on my resume and about my current internship at a startup (responsibilities, progress in my work, etc.). After this discussion, I was given my first problem.

- Given a complex string with characters going up and down, what must be done to print it. For this, I decided to use a char matrix and figured out the standard pattern of the up and down traversals. I coded it up quickly as I talked through the logic and wrote the complexities within 10 minutes. \xc2\x0
- <https://www.geeksforgeeks.org/a-program-to-check-if-a-binary-tree-is-bst-or-not/>

This problem needed recursion, and I was able to code it up and tell the complexities pretty quickly. \xc2\x0

Since I had completed both questions quickly, she spent the rest of the time asking about various sorting algorithms and their tradeoffs. She then asked me about my favorite data structure (Queue), and we had a long discussion on it. \xc2\x0 After this, I asked her a few questions, and we had a small discussion on the 14 Principles of Amazon. The interview ended on a good note.

I was expecting the 3rd round, but thankfully they had decided my candidature with two rounds. \xc2\x0

Verdict: Selected

Only 8 out of the final 40 were selected for the internship, and gratefully I was one among them. \xc2\x0

Quick Tips:

- Be very strong with your DSA. I had solved around 400 questions in the past year, and 50 questions in the last one week before the interviews.
- You have to solve both questions given in every interview and have enough time to answer follow-up questions as well
- Maintain an aura of calm before your interviews. It can help your mind to think clearly and form connections with your previously solved problems.
- Always keep the interviewer in the loop with your thoughts. Never stay silent. Only then can they help you if you lose track of the problem
- Emphasize clean, modular code with comments. This demonstrates your ability as an engineer. Use appropriately named functions and variables.
- As you code up, think about the edge cases. It will help avoid unexpected issues later on.
- Know your projects, resume, and past experiences. Be ready to tell them in detail about everything.
- Practise DSA with a coding buddy (pair programming). It helps you build the practice of explaining your code, and is a win-win situation.
- If you are preparing for Amazon, the **14 Leadership Principles** are a must.

That will be all. Amazon is not difficult if you are confident in your DSA and development skills. All the Best!

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Amazon WOW Interview Experience

- Last Updated : \n04 Mar, 2022

Amazon wow is special recruitment drive for women conducted in May every year

- Full time roles for final year student
- Internship for pre-final year students.

One need to apply online on the official site once notification are out. Strong resume and profile plays a strong role. So, I suggest to add all the latest achievement and experience to stand out.

Round 1: Has 1 coding question and MCQs 5 from each below mentioned topics.

1. [Data Structure](#)
2. [DBMS](#)
3. OS
4. [Networking](#)
5. [Algorithms](#)

It was time bound round, allocated 1 hour for all in total. Coding question includes 6 test cases, however it was based on array. The question was similar to [this](#).

Round 2: Selected candidates will be informed through email and further instructions will be provided. This round had 6 debugging question and provided language is only java and CPP and not Python. Moreover it had 2 coding questions covering concepts from tree and graph. The question were quite logical but I have never found it on any practice site.

Time allocated for the same is 2 hours. The questions were basic focusing on concept building and algorithms.

Round 3: It is eliminating round. This is Interview round where selected candidates will be provided schedule as per their convenience. Technical Interview will cover 2 questions.

- Tree based question.
- Stack based.

Note: Must follow only behavior of data structure.

Round 4 (Behavioral Interview): Selected candidates will proceed for this round. STAR based approach needed to present the solution for specified problem. Basic questions on OS and system design will be asked.

Tips:

1. Wait and be patient for results
2. Be punctual
3. Don't hesitate to ask question in interview.
4. Be clear and precise.
5. Practice, practice and practice.

All the best \xe2\x80\x99

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Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level :[Medium](#)
- Last Updated :17 Oct, 2021

Round 1: Online Assessment

- Amazon Fresh Deliveries: Given all Locations list of co-ordinates (x,y) you have to find the X closest locations from truck's location which is (0,0). Distance is calculated using the formula $(x^2 + y^2)$. If there is a tie then choose the co-ordinate with the least x value. Sample Input :

```
All Locations : [ [1, 2] , [1, -1], [3, 4] ]\r\nnumOfDeliveries : 2\r\nSample Output :\r\n[ [1, -1], [1, 2] ]
```

- The output list can be in any order. This question was basically K closest points to the origin (0,0) with added tie condition.
- Demolition Robot: Given a matrix with values 0 (trenches), 1 (flat), and 9 (obstacle) you have to find the minimum distance to reach 9 (obstacle). If not possible then return -1.
- The demolition robot must start at the top left corner of the matrix, which is always flat and can move on the block up, down, right, left. The demolition robot cannot enter 0 trenches and cannot leave the matrix.

```
Sample Input :\r\n[ [1, 0, 0], [1, 0, 0], [1, 9, 1] ]\r\nSample Output :\r\n3
```

- This question can be solved by using BFS or DFS.

Round 2: Interviews

Generate the sequence of N magic numbers. A magic number is:

- Consists of digits 4 and 5
- Must be an even palindrome
- [Expression evaluation \(using stacks\). The expression may contain parenthesis or not .](#)

Round 3:

- [Difference between linear and non linear data structure.](#)
- Internal working of the map, including its implementation.
- First non repeating character in a stream of data in O(1) time complexity.
- [Creation of a binary tree.](#)

Round 4: Technical Interview

- [Variation of word-ladder problem.](#)

Tips:

- You must know how to calculate time and space complexities.
- In each round they ask you about the project you recently did/ the project you liked working on most/ most challenging work etc- so you should be prepared well for at least one project with in-depth details.
- Start with the naive approach for each question asked and then proceed with solutions with better space and time complexities.
- Behavioral questions were also asked in each round Some questions asked were :
- Out of amazon leadership principles ,which one you identify yourself with and why ? Give real-life example.
- Was there any situation in which you went out of your designated responsibilities?

All the best !

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Easy](#)
- Last Updated :\n16 Oct, 2021

I had been constantly applying for SDE roles through the amazon jobs portal. Eventually, I got an invite for an Online Assessment in September 2021 for the application I\xe2\x80\x99d applied for in June 2021.

Round 1: Online Assessment

- There were 2 coding problems followed by an approach with time complexity.
- The first question was Demolition Robot; I don\xe2\x80\x99t remember the second question but I solved using Priority Queue. The first coding solution passed all test cases & the second solution failed for one test case.

After 10 days I got a call and the interview got scheduled for next week.

Round 2: F2F Technical Interview

- I was asked to introduce myself and about my projects. Then we jumped onto coding problems.
- <https://leetcode.com/problems/meeting-rooms-ii/>
- Given an array of meeting time intervals consisting of start and end times [[s1,e1], [s2,e2],\xe2\x80\x9a] find the minimum number of meeting rooms required.
- <https://leetcode.com/problems/top-k-frequent-elements/> or <https://www.geeksforgeeks.org/find-k-numbers-occurrences-given-array/>
- I was asked for time complexity and to optimize the code. There was not enough time left because I took more time for the first problem so he asked me to stop coding and just explain the further code. I asked him for feedback but he said HR will contact you. It\xe2\x80\x99s was my first coding interview so I was nervous and couldn\xe2\x80\x99t perform very well.

Round 3: F2F Technical Interview

I had the second coding round on the same day, we had an introduction then jumped onto problems.

- <https://leetcode.com/problems/group-anagrams/> or <https://www.geeksforgeeks.org/given-a-sequence-of-words-print-all-anagrams-together/>
- After discussion, I was asked to write code.
- \xc2\x96 <https://leetcode.com/problems/number-of-islands/> or <https://www.geeksforgeeks.org/find-number-of-islands/>
- After writing coding, I was asked questions on BFS and DFS and time complexity.

This round went so well & the interviewer was happy with me and immediately after Round 2, I got called for the next round after 30 minutes.

Round 4: F2F Hiring Manager Interview

- After an introduction, I was asked designing question.
- Write a program to design vending machine.
- After getting clarification I was asked to write code.\xc2\x96
- There is a stream of numbers containing 0\xe2\x80\x99s and 1\xe2\x80\x99s. Move all 0\xe2\x80\x99s to left and 1\xe2\x80\x99s to right. Note that size is not given.
- After solving it, I asked what kind of projects does fresher gets.

The next day I got the call and the last round got scheduled after 2 days (on Monday).

Round 5: F2F Hiring Manager Interview

- We had little introduction then I was asked 2 coding problems.
- <https://leetcode.com/problems/trapping-rain-water/> or <https://www.geeksforgeeks.org/trapping-rain-water/>
- I explained and wrote code for the Brute-Force approach then I was asked to optimize it.
- It was a new problem to be related to covid but a somewhat modified version of rotten oranges. He told me to take care of all the edge cases, I wrote code then he pointed to read the problem again as `\xe2\x80\x99` missed something, then I took some time and modified the code accordingly.

After 5 days, I got the call saying that I got selected.

Verdict: Selected

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Amazon Internship Interview Experience | On-Campus 2021

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 11 Oct, 2021

Amazon arrived for hiring in the last week of Sept 2021 on our campus for the 6 months Software Development Engineer Role. We had a total of 3 rounds (1 Online Coding on Amazon\xe2\x80\x99s Assessment Portal + 2 Technical Interviews).

Round 1: Online Assessment Round

The coding round comprised of 4 sections:

- Debugging: We had to choose a language and debug up to 10 questions most probably. Codes were very basic like sorting, etc.
- Coding: There were two medium-hard level questions.
- Work-style Assessment
- Aptitude: 25 aptitude questions (most probably)

Round 2: Technical Interview Round 1

- [Next Greater Frequency of Element](#): same as next greater element but print greater frequency instead. I was asked to write only the function.

Eg - 1 1 2 1 3 2 → -1 -1 1 -1 1 -1

- [Design a data structure that does insert, delete, max, min deletes max, delete min operations in less time complexity preferred O\(1\)](#) (with duplicate elements),.I answered accordingly as given in GFG using a doubly-linked list and min and max heaps. But he asked for a more optimized delete min/max operation in O(1) but I wasn\xe2\x80\x99t able to come up. He explained to me that we could use one more data structure to store addresses of the elements in the heaps. I was asked only the intuition.

Round 3: Technical Interview Round 2

1. [Clone a Binary tree having random pointers](#) The structure of the node was already provided.
2. Tell me about any technology that you have started learning or have worked on recently \xe2\x80\x93 Use the STAR method to explain. I was from ECE so I was also allowed to speak about any technology which may be related to ECE too.

Tips:

- Start from brute force and keep on optimizing when asked.
- Speak while coding or thinking.
- Repeat the question how you have understood it.
- Keep track of edge cases.
- Use STAR method for behavioral questions.

I guess they didn\xe2\x80\x99t ask me any theory as I was from ECE and also not much time was left. Don\xe2\x80\x99t take it for granted, it\xe2\x80\x99s just an assumption of mine.

Verdict: Selected

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Amazon WoW Internship Interview Experience 2022

- Difficulty Level :\n[Medium](#)
- Last Updated :\n04 Mar, 2022

I had 2 technical rounds on Amazon Chime. For all DSA questions, I asked about given data types, corner cases, and return type(s).

Technical Round 1

The interviewer introduced himself, and asked me to do the same, he told me to consider this interview as a discussion session.

- The interviewer asked me about my favorite data structure, my answer was Linked list and tree, maybe, therefore, my first question was:
- Given a binary tree root and a linked list with the head as the first node. Return True if all the elements in the linked list starting from the head correspond to some downward path connected in the binary tree otherwise return False. (also known as \xe2\x80\x9d Linked List in Binary Tree\xe2\x80\x9d)
- I told me brute force solution and time-space complexities. He asked me to write the code, I told him that I can improve the approach and told him an improved approach. During the whole time, the moment I was picking the path towards the correct approach interviewer was acknowledging me by saying \xe2\x80\x9cyes you are going in the right direction\xe2\x80\x9d. He was quite impressed with my code and approach.
- [Next greater element](#)
- <https://www.geeksforgeeks.org/next-greater-element/>
- I told him brute force and then improved his approach.
- He asked me to write pseudo code for this question.

The next day received mail for the next round, round was scheduled for the same day.

Technical Round 2

The interviewer introduced herself and asked me to do the same.

- Lowest Common Ancestor: <https://www.geeksforgeeks.org/lowest-common-ancestor-binary-tree-set-1/>
- First I explained the brute force solution, she asked for time and space complexity, then I told her the improved solution and wrote the code and time-space complexities.
- Given an n x n grid containing only values 0 and 1, where 0 represents water and 1 represents land, find a water cell such that its distance to the nearest land cell is maximized, and return the distance. (also known as \xe2\x80\x9d As Far from Land as Possible\xe2\x80\x9d)
- I was able to give a brute force solution (BFS calls for each 0 of the grid)
- She was giving me hints to improve it, but I couldn\xe2\x80\x99t.
- In the end, she asked me to write the code for the approach (brute one) and time-space complexities.

Received positive mail after 8 days.

Verdict: Selected

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Amazon Interview Experience for SDE-1 | Off-Campus 2021

- Difficulty Level :\n[Hard](#)
- Last Updated :\n05 Oct, 2021

Round 1: Two questions were discussed.

- <https://www.geeksforgeeks.org/median-of-two-sorted-arrays/>
- Most frequent subtree sum in a binary tree. (Using hashing and postorder traversal)

Round 2: Coding question

- <https://www.geeksforgeeks.org/boundary-traversal-of-binary-tree/>
- <https://www.geeksforgeeks.org/find-length-largest-region-boolean-matrix/>

Round 3: HM

- Leadership questions, why amazon, etc.
- Design a class Student that can return the percentage of a student.

Round 4: BR

- Leadership questions like project under a tight deadline etc.
- Return the sum of all nodes whose Kth ancestor is even.
- For the maximum length of a sequence in a 2D matrix, you are only allowed to move down or right. Also, a sequence between 2 numbers can be formed only if the consecutive numbers have an absolute difference of <https://www.geeksforgeeks.org/longest-increasing-path-matrix/>

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Easy](#)
- Last Updated :\n05 Oct, 2021

I was interviewed for the SDE-1 role at Amazon and I take this opportunity to share my experience.

Round 1: Coding Assessment:

- Before the technical rounds, I had to complete an online coding assessment (which was relatively easier by Amazon standard).
- Even though I completed this coding round in May, I wasn't scheduled for an interview before the last week of August. I am not quite sure the reason behind such a delay.

Interview Call:

- I was informed about the dates 10 days prior to the interview and they sent me the meeting links (Amazon Chime and Livecode) 2-3 days before the interview.
- They also sent a mail describing their company principles, their expectation from an SDE, and tips and helpful links to prepare for the interview.
- They also confirmed my availability on the day of the interview over a call.

Round 2: Technical Round 1:

- The interviewer introduced himself by describing his role at Amazon before asking me something about myself.
- Then he asked a coding question: [Given a sorted dictionary of an alien language, find the order of characters](#). He first wanted to know my approach before asking me to write a pseudo code.
- I did not know the GFG solution so I tried to solve it by myself. I came pretty close to the original solution, but it wasn't fully accurate.
- The interviewer pointed out some cases where my code will not work and while doing so asked some technical questions related to it: mostly graph, tree, linked-list related.

Round 3: Technical Round 2:

- After one hour of the completion of the first round, the second round began. It started in a similar fashion with both of us introducing ourselves.
- The first coding question I was given was: [Find the Maximum width of a binary tree](#). I was to present a pseudo-code first and once he liked my approach he immediately asked me to write the function.
- I wrote it and he suggested some improvements and then moved on to the next question: [Find Next Greater Element](#).
- I solved it very quickly as I practiced it few days before the interview. He asked me about the time and space complexities of my solution.
- Once both of the coding questions were done, he asked me some behavioral questions as there were some times left.
- He asked if I want to mention any key event as my career highlight. Based on my answer he again asked some questions like what particular issue I found and how I went on to solve it (I probably should have told all the details, but I wanted to keep it short).
- Finally, he asked me if I had any questions for him.

Unfortunately, I did not make it to the further managerial rounds, but it was a nice experience nonetheless and it boosted my confidence as I was able to answer 2/3 coding questions and I

believe that I can surely improve by practicing more. I hope my experience can help other aspiring candidates in their preparation. Good Luck.

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Amazon WOW Interview Experience 2021

- Difficulty Level :\n[Medium](#)
- Last Updated :\n04 Mar, 2022

I applied for the **2 months SDE intern** role through Amazon WOW drive 2021. There were a total of 3 rounds for people who applied for 2 months internship program and 4-5 rounds for people applying for 6 months internship program.

Round 1: It was an online test on Mettl Platform, consisting of 1 coding question and 40 MCQs covering topics like Data Structures, Algorithms, SQL queries, Linux, Networking, Software Engineering, etc.

- The coding question was a slight variation of <https://www.geeksforgeeks.org/longest-palindromic-substring-set-2/> and there was no negative marking for the multiple-choice questions. This round was of 1 hour 30 minutes.
- I did the coding question with all the test cases passed and also did most of the MCQs. After a few days, I got a mail that I have been shortlisted for the second round.

Round 2: It was an online test conducted on AMCAT platform, consisting of 4 sections.

- The first section (20 minutes) was the debugging section and consisted of 7 very easy code snippets which had to be debugged to get the desired output.
- The second section (70 minutes) was the coding section and consisted of 2 coding questions. The first question was a medium level DP problem for me and the second question was a hard level problem based on Disjoint Sets.
- The third section (20 minutes) was Workstyle Assessment. It was kind of a survey and the last section (35 minutes) consisted of Logical Reasoning questions.
- I did the debugging and the Logical Reasoning section completely. And was able to do the first coding problem with all the test cases passed and the second problem partially. After around 15 days, I got a mail that I have been shortlisted for the interview round.

Round 3(Interview Round): My interview was scheduled to be on 19th September. It was a 1 hour interview on Amazon Chime.

- The interviewer started with his introduction and then, asked for mine.
- Then, he straight away gave me a coding question. It was a medium-hard level question based on BSTs, Hashing and Heaps. It took me some time to come up with the approach but finally I was able to give an optimized solution.
- The interviewer seemed satisfied with my approach and asked me to code the solution in any desired language.
- Then, he gave me another coding problem which was based on Dynamic Programming. I was able to convince the interviewer with my approach and coded the solution correctly for the second problem also.
- The interview ended there.

I got a selection mail from Amazon on 23rd September.

For the interview round, Communication is the key. The interviewers are very kind and are there to help you out only. Discuss with them whatever approach comes to your mind. I would suggest being patient and calm during the interview. Think out loud. And always hope for the best.

VERDICT: SELECTED

I would like to thanks **GeeksforGeeks** for being the one-point destination for my interview preparation. Best of luck everyone!

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n05 Oct, 2021

Online Test, 2 Technical Rounds, 1 Hiring Manager Round, 1 Technical Round.

Online Test

1. One easy sorting based question
2. Shortest Path problem(BFS)

Both were doable in the given 90 mins time.

2 rounds of technical interviews were scheduled.

Round 1:

1. K largest Elements of the given array. (Using Heap). As a follow-up was asked to Implement Heap. I was not able to implement the max heap.
2. [\xc2\x0https://www.geeksforgeeks.org/find-the-ordering-of-tasks-from-given-dependencies/](https://www.geeksforgeeks.org/find-the-ordering-of-tasks-from-given-dependencies/). I was able to give the approach but was not able to give the code properly.

Overall the round did not go well. Was my first interview after a very long time, so was kind of nervous. The HR told me the second round had to go really well if I had to move to the next rounds.

Round 2:

1. Given a file having a timestamp and some log in every line. Retrieve all the logs that depict certain errors. (Basically, the coding style was checked here. if we declared the classes properly, constructors, getter-setter methods and the standard naming conventions, modularity, etc.)
2. <https://www.interviewbit.com/problems/stepping-numbers/>.
 - I was able to answer both questions with great clarity. There were many follow-up questions for the 2nd one, she dug into corner cases and was satisfied with the way they were handled.
 - I was pretty confident that the round went really well and hoped to the interview to proceed further. And yes, I did.\xc2\x0

The hiring Manager Round and another technical round were scheduled.

Round 3:

- Hiring Manager Round \xe2\x80\x93 All LP questions, reasons for change, expectations, and other common questions.

Round 4 :

1. Technical Round \xe2\x80\x93 40mins LP questions
2. <https://www.geeksforgeeks.org/total-area-two-overlapping-rectangles/> Easy and done. Have given the approach and coded in 10mins that were left.

Both rounds went well IMO, but it\x80\x99s all subjective. So you are never sure. I was hoping that I\x80\x99d be offered the role, but hard luck, Apparently they had concerns about my

coding(the 1st round that didn't go very well).

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Amazon Interview Experience for Programmer Analyst

- Difficulty Level : [Medium](#)
 - Last Updated : [04 Oct, 2021](#)

Round 1(OA Assessment \xe2\x80\x93 2 hrs):

- It was conducted in HackerEarth.
 - 3 Programming Questions were asked

Round 2(Technical Interview \xe2\x80\x93 1 HR)

- Self Intro
 - Directly stepped into coding and 2 coding questions were asked.
 - Next Greater Element with little tweak in the question (Instead of finding the next greater element we need to find the index of the next greater element If no greater element present then -1)
 - Eg: arr = [72,73,74,70,69,70,75,76,73,72]
 - O/p: \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0[1, \xc2\xa01, \xc2\xa04, \xc2\xa03, \xc2\xa01, \xc2\xa01, \xc2\xa01, \xc2\xa0-1, -1, -1]
 - Two Sum Problem we need to find whether the Sum present in array or not.If present return True as well as the index of the sum else False.
 - Eg: arr = [1,2,3,4,5], Sum = 8 O/P: True [2,4]
 - What is the Challenging task that you made in your academics or in your project.
 - Any Questions to the interviewer

Round 3(Technical Interview \xe2\x80\x93 1 hr):

- Self Intro
 - Asked me to explain the project in depth.
 - Explained about the role of Programmer Analyst.
 - 2 coding questions were asked.
 - Check Whether the tree is BST or Not

- Nth last node in the linked list.

\xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 Eg \xe2\x80\x93 LinkedList = [1,2,3,4,5], n = 3 O/P:
3

\xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 Eg \xe2\x80\x93 LinkedList = [1,2,3,4,5], n = 5 O/P:
1

- How have you dived deep into the project you have done?
 - Any Questions to the interviewer.

Round 4(Technical + Behavioural Interview \xe2\x80\x93 1 hr):

- Self Intro
 - Explanation of all the projects done.
 - Questions were based on technology used in project and behavioural questions which includes Leadership Principles.
 - Tell me about the time when you left the task unfinished
 - Tell me about the time when you faced difficulties in the task
 - How did you collect the data for your machine learning project?
 - Any Questions to the interviewer

Round 5(Final Technical + Behavioural Interview |xe2\x80\x93 1 hr):

- Directly entered into internship experience.
 - Most of the questions were from the project done in the internship.
 - Tell me about a time where you worked with a customer.
 - Tell me about a time where you didn't satisfy the customer requirements.
 - Few questions are from accuracy, precision, recall are the major concepts in ML and DL.
 - Given a Coding question to solve.
 - Given two Binary Trees, check if one tree is a mirror of another tree or not.

- Asked a few questions about the final year Project.
 - Any Questions to the interviewer

Verdict: Selected

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Amazon Interview Experience for SDE (On-Campus)

- Difficulty Level : \n[Basic](#)
- Last Updated : \n04 Oct, 2021

Online Test: There were 4 sections in the online test which was held in the month of August.

- Debugging questions (Easy)
- Coding Questions (Easy-Medium)
- General Aptitude Assessment (Easy)
- Workstyle compatibility test (Read Amazon Leadership Principles to answer accordingly).

I did both questions in the coding round and was hopeful of clearing the online assessment.

Round 1

- My interview was in the afternoon, I joined earlier than my interviewer. My interviewer was currently a Software Development Manager and an ex-Vice President at Goldman Sachs, I was quite nervous after stalking his LinkedIn profile. Anyways, so he joined and he was very polite while talking. He asked me for an introduction and I told him about myself. I mentioned my interest in sketching and astrophysics and then we had a mini discussion on that. That kind of established a rapport with him.
- Then we jumped to DSA problems and he asked me a problem on finding the first index of the non-repeating characters in a string. I told him an approach using the hash map of time complexity O(N). He seemed satisfied by my approach and asked me to write the code. While writing code, he put a lot of emphasis on clean code and in the end made me change the variable names to improve readability. I learned a lot from that.
- After that, he asked me a variation of rotten oranges which was about finding the time by which all patients in a ward will get COVID infected, given there are three types of cells: [0]-with no patient, [1]-Patient with some disease except COVID, [2]- with COVID patient
- I did it with the approach of multisource BFS. The time complexity of my approach was O(m x n).
- In the end, the interviewer asked me to ask some questions and I asked him about his experience at Amazon and \xe2\x80\x9cHow he start with something new which is a requirement for a project he has been allotted\xe2\x80\x9d. After that, he told me \xe2\x80\x9cit was great interviewing with you\xe2\x80\x9d and ended the meeting on a positive note. I was pretty confident that I will be selected for round 2 but didn\xe2\x80\x9t get any notification regarding it the whole day. The next day, HR called me at noon and asked me to join the meeting immediately.

Round 2

- My interviewer was already present in the meeting, I introduced myself and she asked me few questions on internships and one of my projects. The questions she asked were based on DBMS (\xe2\x80\x9cWhy did I use MySQL in my project?\xe2\x80\x9d, NoSQL, Scaling). Then she started asking coding problems.
- [Merge K Sorted Linked Lists](#).
- [Find total number of \(i,j\) pairs in array such that i<j and a\[i\]>a\[j\]](#).
- I could only answer the first question and code it. She seemed satisfied. Then she asked me to just explain the approach to the second question but couldn\xe2\x80\x9t come up with an optimal approach for the second one. She asked me to end the interview as no time was left. I asked her some questions on \xe2\x80\x9cWhat she likes best about working at Amazon?\xe2\x80\x9d, \xe2\x80\x9cIf a new technology is a requirement for a project allotted to the

team, how do you guys go about working on it? \xe2\x80\x9d, \xe2\x80\x9c

- Do you have some feedback for me that I can improve upon in the future \xe2\x80\x9d. On the feedback question, her reply was positive but I had doubts since I couldn\x9t answer the second coding question.

Verdict: Selected

Tips:

- My final advice would be to believe in yourself and answer with confidence. If at any point you realize your approach is wrong then be honest and humble. Smile, be polite, and try to think out loud.

Also, solve as many previous interview questions as possible.

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Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n29 Sep, 2021

In the month of April \xe2\x80\x93 May Hackathon named HackOn was held on the HackerEarth platform by Amazon.

Round 1: Coding Round

Time: 3 questions in 2 hours

- Given a string of 0\xe2\x80\x99s and 1\xe2\x80\x99s. You are allowed to do 2 operations on this string.
- Exor of any 2 consecutive elements and replace them with the result.
- And of any 2 consecutive elements and replace them with the result.
- Our question was to return \xe2\x80\x9cYes\xe2\x80\x9d or \xe2\x80\x9cNo\xe2\x80\x9d. If we can reach 1 after n-1 operations on the string. (Hint-Just check if one is present in the input string)
- Range sum question: <https://leetcode.com/problems/range-sum-query-mutable/>
- I don\xe2\x80\x99t remember but was Leetcode Easy.

Our Idea was not selected but I got a mail-in July regarding the further Interview process. The criteria for selection was all 3 questions must be solved in 1st round.

Round 2: Interview Round 1

This interview was taken by an SDE-1 and was very friendly. Two questions were asked I was able to solve both in 1 hr.

- <https://www.geeksforgeeks.org/maximize-partitions-such-that-no-two-substrings-have-any-common-character/>
- A simple priority_queue question. Multiply 2 numbers and put them back in priority_queue and the answer will be the last standing number in priority_queue.
- Analyzing time complexity was an important part of the interview.

Note: Study heap in detail.

Round 3: Interview Round 2

This interview was taken by an SDE-1 and was very friendly. One question was asked I was able to solve it in 45 minutes.

- This was a variation of the Job Scheduling problem. The task was to compute the time needed to execute all queries. ith query denoted Jobs that arrive at the time i. There can be multiple jobs entering at a time. Our processor can do n jobs at once.

Queries - [[1, 4], [3], [], [3, 1, 2]]\r\nQuery slot - n (eg 2)

- [The problem was then modified with priorities for jobs.](#)
- One question based on Amazon principles was asked. Tell me about one of your learning experiences. (I told him about my internship experience)

Round 3: Interview Round 3

This interview was taken by a senior developer with more than 4.5 years of experience at Amazon. He was very friendly and really tried to understand my approach.

- We had a casual discussion at the start followed by a depth discussion about my internship. (15 min approx)
- <https://www.geeksforgeeks.org/recursively-reversing-a-linked-list-a-simple-implementation/>
- <https://www.geeksforgeeks.org/add-two-numbers-represented-by-linked-lists/>
- I told him we can reverse a linked list using pointer manipulation, but he said he wanted a different approach so I had to try and write recursive implementation on spot. These 2 questions took me 30 minutes
- <https://practice.geeksforgeeks.org/problems/detect-cycle-in-a-directed-graph/1>

The interview was over in 1.5 hr.

Verdict \xe2\x80\x93 Selected

Note :

- Ask good questions to the interviewer. Asking questions is not about you know more about the company, it's about the interviewer replying and enjoying talking to you. Ask regarding what he does in day-to-day like (In work from home office). Or something related to his current project. The hiring process in Amazon is quite slow it takes time, Took me 1 month for 3 interviews and 4 months from giving tests to getting selected.
- I gave more than 15 interviews and so many tests (GS, Amazon, LinkedIn) Was rejected in all. Didn't even get an internship in any reputed firm. (PS: I interned in a small Pune-based startup).

Keep working hard and all the best.

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Amazon Interview Experience for SDE Role | 6-Months Internship + PPO (On-Campus)

- Difficulty Level : \nEasy
- Last Updated :\n29 Sep, 2021

Amazon arrived for hiring in the last week of July 2021 on our campus for the **Software Development Engineer Role**. We had a total of 3 rounds (**1 Online Coding on Amazon\xe2\x80\x99s Assessment Portal + 2 Technical Interviews**).

Here is my interview experience for the same.

Round 1(Online Coding Round): This round was conducted on Amazon\xe2\x80\x99s own Assessment platform, There were MCQs on Aptitude, Basic Programming, CS fundamentals, English Comprehension, and Decision Making along with 2 coding questions of easy/medium difficulty.

- Suggestion for MCQs: Have a sound Knowledge of CS Fundamentals and Aptitude Solving Practice.
- Coding Questions were based on Implementation only.
- Good practice on Implementation based problems involving **Maps, Vectors, Sets, and other C++ STL components is a must.**

Round 2(Technical Interview 1): The platform for the Interview was **Amazon Chime**

The Interviewer asked only 2 Coding Questions in this round:

1. The first problem was, **Given an array of size n having n elements and another array of size n+m having m elements, Sort these two arrays and store the final result in the second array, which should contain the elements of both the arrays.**
 - First I suggested a Brute Force solution by using a third array and then sort them and put them back in the Second array.
 - After that, I suggested a better solution without using a third array, by comparing elements from starting of the first array to the elements at the starting of the second array.
 - After that, he said you are close and then gave me a hint, and I was able to solve the problem successfully.
 - After that, I was asked to code the solution for this problem, which I did as well.
 - And then I was asked to determine the **Time and Space Complexity** of my code.
2. The Second Problem was, **Given a Binary Search Tree, Convert it into a Sorted Doubly Linked List and return the Head Pointer.**
 - This was a **Standard Problem of BST.**
 - I explained my Approach by Traversing from the right to left in the Tree to get the Sorted order of the Linked List.
 - And then I wrote the code for My solution.
 - The interviewer was satisfied with my Code and then asked me to determine the **Time and Space Complexity** of my code.

After this, he asked if I had any questions for him. This round lasted for about 60 Minutes.

Round 3 (Technical Interview 2): The platform for the Interview was **Amazon Chime**

The Interviewer asked 2 Coding Questions and some Behavioural Questions in this round :

1. The first problem was, ***Find the first 100 Prime Numbers.***
 - For this Problem first, I suggested a Brute Force Approach by checking numbers starting from 2 whether they are Prime or Not, till we get 100 Prime Numbers.
 - After that, I suggested a better approach, which is using the [***Sieve of Eratosthenes Algorithm.***](#)
 - He was satisfied with my Approach, after that he made me code the Solution.
 - After that, he asked me the ***Time and Space Complexity*** of my Code.
2. The second problem was, ***Given an array of Strings, find which strings can be combined with other strings in the array so as to make the strings that are present in the array.***
 - For this Problem, First, I suggested a Brute Force Approach using Maps.
 - After that, he asked me for a better approach.
 - After Thinking a while, ***I figured out another Approach using Trie.***
 - He asked me to explain the [***Concept of Trie Data Structure***](#) and why do we use it.
 - After that he asked me to code the solution using Trie.
 - After I completed the code, he asked me the ***Time and Space Complexity*** of my Code.
 - I was, to give the proper logic and explain my approach to him and he was satisfied with my Solution.

After this, he asked me some ***Behavioural Questions which are the Important Part of all the Amazon Interviews.*** Fortunately, I had already prepared for some of the Most asked Behavioural Questions by Amazon. The behavioral questions were,

1. ***What is the most innovative thing you have done?***
2. ***When is the time when you tried something unique, Did you failed or succeed?***

After this, he asked if I had any questions for him. This round lasted for about 65 Minutes.

After around 1.5 Weeks, the Result was declared and ***I was selected for the role of Software Development Engineer (6-Months Internship + PPO).***

My suggestion for the Interviews :

1. Practice all the [***Standard Amazon problems from GfG.***](#)
2. Have a good understanding of the CS Fundamentals in OS, DBMS, CN, and OOPS.
3. Prepare some ***short notes on CS fundamentals and DSA Problems***, which will be useful for last-minute revision.
4. Prepare and notes down answers to some [***Standard Amazon Behavioural round questions :***](#)
 - Tell me about Yourself.
 - What are your Strengths and Weaknesses.
 - Tell me about a hard situation for you, and how did you overcome it.
 - Tell me about a time when you took a risk and failed.
 - Why should we hire you.

At last, always keep calm while giving the Interviews for positive results.

All the best for your Interviews.

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Amazon Interview Experience for Intern + FTE

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 29 Sep, 2021

Amazon visited our college this year. They currently are on a massive hiring spree, and anyone with decent knowledge can get into it. This is my entire experience.

Online Test: It was a 3 hour long online test, which comprised of Code-Output, Debugging, Behavioral, Aptitude and Coding Questions.

- The questions were simple to moderately difficult. Time management was more important than your coding ability.
- There were 2 coding questions, and you needed to solve both of them.

There were a total of 67 interview shortlists. I was one of them.

Interviews Rounds:

Round 1: This was with an SDE 2 at Amazon having more than 6 years of experience.

- The first question she asked was the toughest in all the amazon interviews. The question was: You are given a number, so big that you will need a string to store it. Now, you need to find the next greater palindromic number. I had never seen this question before. I proceeded to tell an approach that would have $O(n)$ time complexity, where n will be the length of the string(a hint would be to traverse the string from the middle). She demanded code as well. I tried, but there were a lot of edge cases with my approach. 45 minutes in, still incomplete.
- She moved to the next question. It was a simple \xe2\x80\x9cMinimum steps required by a knight to move from one position to another in a chess board\xe2\x80\x9d question. I was able to answer within a second. She told me to move back to the first question. She was really helpful and was writing down whatever I was thinking to manage my edge cases too. My code was still slightly incomplete, but she acknowledged it was a tough question. I got selected for the 2nd round.

Round 2: This too was with an SDE 2. He was really calm and asked me to introduce myself first. After that, he introduced himself and then, we moved to the questions.

- The first question was \xe2\x80\x9cFind the median in a stream of numbers\xe2\x80\x9d.
- The second was \xe2\x80\x9cFind the maximum sum in an array, such that you cannot add alternate elements\xe2\x80\x9d.
- The third was \xe2\x80\x9cFind the maximum profit you can get by buying and selling stocks(no limit on the number of times you can sell/buy)\xe2\x80\x9d. I was able to solve all of them within 15 minutes with optimal time and space complexity, with code.
- He moved to the 4th question: You can make 2 operations on an array: Update any index or find the max in a range of the index. Discuss its time complexity. It was a segment tree solution as I knew Segment Trees helped in ranged queries, but I didn\xe2\x80\x99t know much about them. I still somehow tried to give him the optimal approach as I knew merge sort, we just needed to store all the split-up array states. He was impressed with my solution as it was pretty close to a segment tree, and to be honest so was I. I didn\xe2\x80\x99t think I would be able to think of that solution. He didn\xe2\x80\x99t ask the code for it as he understood I didn\xe2\x80\x99t know much about segment trees and urged me to learn about them as well.
- Then, to my surprise, he moved on to the 5th question. This too was a good one. Given an array, all the numbers in it occur in pairs, and all the duplicate elements are adjacent to each

other. However, one element was 3 in number, they were together too. We needed to find that number. I thought of the XOR approach first, but he was expecting a logarithmic time complexity, and O(1) space complexity. I was able to come up with that solution as well with one hint from him(it was: what would you do to verify if the triplet was present in the array or not). If you want another hint, think binary search. It was a great interview. I had a lot of fun giving it. I was selected for the Managerial round.

Round 3: It too was a coding round. It was with an SDE 3.

- He asked me to split a linked list into odd and even halves, without using extra space. I coded it out. Then he asked me to use a function, as now he wanted to split the linked list based on prime and composite. Did that too. Then, he asked me to design a way in which the client can write the condition of splitting the linked list, without affecting the code which I am writing. I used interfaces for it. He was satisfied.
- He then asked me about my projects. My internships. His focus was a lot on STAR paradigms, which thankfully, I had read a day prior to my interview(Situation, Task, Action, and Result). Overall, it was just another Managerial round, with a few easy questions here and there. The final selection list came, and there was my name, along with 8 other students for 6 months internship + FTE. It was one of the happiest days of my life.

For anyone who wants to crack one of these companies, I would recommend you to familiarise yourself with Data Structures and Algorithms. GfG helped me a lot. I remember thinking to myself that the people selected for companies like amazon must be really brilliant, but now that I myself am, I would say it's not that difficult. Just give it your best. A few practical tips would be to get good at writing what you are thinking, debugging your code, and not hesitating to ask for a hint from the interviewer. Good communication skills help too.

Good Luck!

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Amazon Interview Experience for SDE-1

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 29 Sep, 2021

Online Assessment:

- 1 leetcode easy question
- 1 medium leetcode graph: finding the shortest path with mines in between the start and end location provided
- Also required to explain the approach in documentation

F2F Round 1: SDM with huge experience

1. Queue implementation using stacks \xe2\x80\x93 pinpointing on clean code and optimisation/tweaks \xe2\x80\x93 Easy/Med
2. Check symmetry in n-ary(generic) trees- HARD: you can watch a tutorial on Youtube by pepcoding

This round did not go well as I could not figure a full solution to the second question

F2F Round 2: Taken by an SDE 1

- 2 behavioural questions on amazon LP: When you had tough deadlines, and you had to make compromise what did you do?
- TIP: High standards, think out of the box, no compromises, prioritise tasks
- When you worked out of your designated work?
- TIP: ownership principle, teamwork

2 coding problems :

1. Remove elements from sorted Linked List which occurs more than once
2. Binary search Medium+ question \xe2\x80\x93 Sorted array with some swapping between neighbouring elements, now you are given a key to search

ANS \xe2\x80\x93 these are sorted segments \xe2\x80\x93 use Binary search \xe2\x80\x93 find points where swapping might have been done

I was able to solve all questions and gave good behavioural answers as well

Shortlisted for 2 more rounds

F2F Round 3: Taken by SDM with high experience

- 4-5 Behavioural Questions Situation based on LP based on Customer obsession and more
- When you did something extra for customers?
- When you and the client had different POV and how did you solve that ?
- Basically how you handle conflicts
- 1 coding question \xe2\x80\x93 validate sudoku

TIP:

- Getting all edge cases is very important over here and in all the problems before you write the code, get those seemingly obvious/vague/tricky cases cleared. ASK, there is nothing that you

can lose in that

- I was able to solve the coding problem and was prepared for behavioural

TIP: for behavioural, <https://interviewgenie.com/blog-1/interviewing-at-amazon-behavioral-interview-questions>

and more, you can check at LinkedIn

F2F Round 4:

- Discussion on projects, OS, DBMS, CN
- amazon.com link working in the background \xe2\x80\x93 networking?
- Transactions and deadlocks?
- Bankers Algo?
- Threads and processes in OS
- One Coding problem \xe2\x80\x93 Medium/hard
- CONVERT CAT -> MEN
- all intermediary words should be proper dictionary words(which is already implemented, no worries about that)
- In one iteration you are allowed to only change one letter at any position in the word to form the next word
- CAT -> CAN ->MAN -> MEN

TIP \xe2\x80\x93 Recursion

VERDICT: Selected

Few Tips:

- It was an off-campus application, took one month for the process.
- Keep faith in yourself
- Interviewers will guide you to the solution if you get the subtle hints and work in that direction
- Workout with all edge cases
- Do not panic, treat it like a good discussion

Thanks to the YouTubers I followed and GfG

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Amazon Internship Interview Experience 2021

- Last Updated : \n29 Sep, 2021

Amazon Interview experience for Internship 2021. There was 1 coding exam round and 2 technical interview rounds.

Coding Exam: There were 2 coding questions as follows:

- Count the number of distinct pairs in an array that adds up to a given target sum
- A question on linked list modification
- 24 Aptitude Questions, around 80 Psychometric Questions, and 7 debugging questions

Interview Round 1: The interviewer asked to explain the logic and code for the following questions right away:

1. In a sorted array having each number repeated, there is one Unique number. List the different approaches with the help of which you could solve this problem. (I said Linear search, hashing, and Binary search \xe2\x80\x93 I was asked a detailed logic for the binary search approach with complete time and space complexity analysis, with proper code.)
2. Print the zig-zag traversal of a binary tree (I explained 2 methods: One, using queue and stack, Another using 2 stacks)
3. I was asked if I had any questions.

Interview Round 2:

1. Tell your entire journey, challenges faced during your previous internship. Explain the evaluation metrics for the project during your internship (I had an internship in NLP background). Tell about your experience when you had to learn something new, to get out of your comfort zone to achieve something in your life.
2. Coding Question: Given a 2D Boolean array where each row is sorted, find the row with the maximum number of 1s. (I had to explain code the optimized approach)
3. Do you have any questions from us?

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Amazon Interview Experience for SDE 1 (On-Campus)

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 28 Sep, 2021

Round 1: Coding round

- Code Debugging (20 minutes)
- Coding questions (70 minutes): There were 2 coding questions:
[Maximum of all subarrays of size K](#)
 Count all substrings with at most K distinct characters
- Workstyle assessment (20 minutes): MCQ to assess your behavior and your attitude
- Reasoning ability section (35 minutes): basic aptitude questions

Round 2: Technical Interview Round 1

Time: 1hr

I was asked to introduce myself and then he asked me 2 coding problems:

- Given 4 digits, make the largest time in 24 hr format. I initially came up with a greedy solution using backtracking. Although this solution was right, the interviewer asked me to think of another logic as this one was slightly complicated to code with too many conditions. He gave me a hint by saying focus on the number of digits. It then struck me that I can simply find all the permutations of these digits and find the maximum valid time. He was satisfied with this approach and asked me to code it.
- Evaluate division. I was quickly able to come up with a solution using graphs. I was then asked to write a code.

We also discussed the time and space complexities for each of the above problems.

Round 3: Technical Interview Round 2

Time: 1.5hr

The interviewer asked me to introduce myself. Then he shifted to coding problems:

- Given N people's entry time and exit time to a shop. You will then get Q queries. In each query, there will be a timestamp. You need to tell the number of people present in the shop at that timestamp. He also told me that Q will be pretty large.
- The obvious approach was to do some preprocessing that will help me to answer each query efficiently. So based on this, I told him 2 approaches with space complexity O(N) and each query could be answered in O(1). He then asked me to come up with a solution with O(1) space complexity. After thinking for some time, I came up with the following logic:
 In the preprocessing step, just sort the entry time and exit time arrays.

Now for each query, we just need to perform a binary search to calculate the answer.

The interviewer was satisfied with this approach and asked me to code it.

- Create a data structure that performs the following operations in O(1):- insertion, deletion, if exists, get random value. I struggled with this problem for some time. He then gave me some hints. After that, I was able to get the solution. He then asked me to quickly code the solution.
- After these two questions, he started asking me about my project. He asked me some basic questions like:
 - Describe your project
 - What challenges did you face?
 - Did you learn anything while developing the project?

- How did you collaborate with other members of the team?
- What technologies were used to develop this project?

Round 4: Technical Interview Round 3

Time: 1hr

- I was first asked to introduce myself. After this, we had a 15min discussion on my internship followed by a 15min discussion on my projects. Then he asked me a coding question involving OOPS concepts: Let's say that you are the author of a library `Canvas` that is used to make polygons based on the given coordinates. Assume that you have already implemented the `drawing` function. Now, how will I add extra functionalities that are capable of drawing any N-sided polygon? Also, he wanted this library to be implemented in such a way that the user is able to override some of its functionalities. We discussed this problem for some time and I came up with an approach using normal logic and some OOPS concepts. He was satisfied with my approach.

I was offered FTE+Intern.

Tip:

- Make sure that you convey your ideas effectively to the interviewer. Also, listen to the interviewer carefully when he is saying something. There is a high probability that he wants you to think in a particular direction.

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Amazon Interview Experience for SDE-1 | Off-Campus 2021

- Difficulty Level :\n[Easy](#)
- Last Updated :\n28 Sep, 2021

Round 1(Online Assessment): This round was on the HackerEarth platform. Two coding questions of medium level.

Round 2(Technical Interview 1): After two months of online assessment, my first and second technical interview was scheduled on the same day.

- This interview was taken by SDE2
- Firstly she introduced herself and asked me to introduce myself.
- After that, she asked three behavioral types of questions.
- And then she gave me a coding question which was something related to this question
<https://www.geeksforgeeks.org/minimum-number-swaps-required-sort-array/>
- I was able to solve that question and was finally done with this round.

Round 3(Technical Interview 2): After two hours, my second interview was scheduled on the same day.

- This interview was also taken by an SDE2
- He introduced himself and asked about me.
- And he jumped into coding questions.
- He asked me two coding questions.
- The first question was related to Lowest Common Ancestor in a Binary Tree and he has added some edge cases.
- The second question was a trie data structure-based question related to finding words in dictionary type.
- On the same day, I got a call from a recruiter that my next round is scheduled for the day after tomorrow.

Round 4(Technical Interview 3): In this round, the interviewer is a Software Development Manager at Amazon.

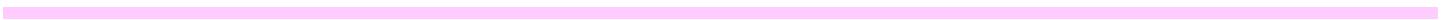
- First, he introduced himself and told me to introduce myself.
- He asked me about the projects which I have done.
- And he jumped into coding question
- The question was: Design a data structure that inserts, deletes the topmost element in O(1) time and also finds, delete middle element in linear time.
- I started solving it using Stack but he suggested me to use Deque, I was not able to solve the delete middle element function in O(1) time using deque.
- After that, he asked me to write a SQL query.
- After that, he asked some behavioral types of questions.
- The interview Ended.

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Amazon Interview Experience for SDE 1 | On-Campus

- Last Updated : \n28 Sep, 2021

Round 1: Online round

The test was conducted on amazon\xe2\x80\x99s platform. It has 4 sections:

1. Code Debugging (C, C++, Java ,6 \xe2\x80\x93 7 Questions) 20 minutes
2. Aptitude and Reasoning Ability,35 minutes
3. Workstyles Assessment, 20 minutes
4. Coding Round,70 minutes

The first 3 rounds were fairly easy, but you should be fast enough to solve in given time constraints. There were 2 coding problems that were similar to the below given.

1. <https://leetcode.com/problems/maximum-units-on-a-truck/>
2. <https://practice.geeksforgeeks.org/problems/minimum-platforms-1587115620/1>

Interview Rounds:

Round 2: Face to Face Interview

1. Introduce Yourself and asked some questions about what I have said in the Introduction.
2. <https://leetcode.com/problems/palindrome-linked-list/> and also asked some variations of it
3. <https://www.geeksforgeeks.org/minimum-steps-reach-target-knight/> and also asked variations of it which are discussed on below-given link <https://leetcode.com/discuss/interview-question/322837/Google-or-Onsite-interview-or-Knight\xe2\x80\x99s-Shortest-Path-on-an-Infinite-Chessboard>

Round 2: Face to Face Interview

1. Introduce Yourself.
2. <https://www.geeksforgeeks.org/rearrange-given-array-such-that-each-elements-is-not-equal-to-mean-of-adjacent-elements/>
3. <https://www.geeksforgeeks.org/find-height-of-a-special-binary-tree-whose-leaf-nodes-are-connected/>
4. Standard Managerial / HR question was asked

Round 3: Face to Face Interview

1. Introduce Yourself.
2. <https://www.geeksforgeeks.org/minimum-cost-to-merge-all-elements-of-lis>
3. <https://www.geeksforgeeks.org/bottom-view-binary-tree>
4. As always One standard Managerial question asked

Result: Selected for 6 Months Internship

Tips:

- The Interviews were conducted on Amazon Chime(A video calling platform).
- The Interviews were of 45 min -1 hr each.
- Any particular advice: Before the Interview, please refer to the Leadership Principles of Amazon. And for each and every problem you have to write code in your favorite language and

you should also be able to convey your thought process and dry-run through the code. Time complexity and Space Complexity is a must for every problem.

- A big Thank you to GeeksforGeeks for transforming me from a reader to a writer.

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Expert](#)
- Last Updated :\n28 Sep, 2021

I applied to the Amazon Jobs portal. Received a link for Online Assessment on Hackerrank.

Round 1 :

- Sort a list of prime and non-prime orders(<https://leetcode.com/discuss/interview-question/1261316/amazon-qa-sde-1-new-grad-2021-batch-india>)
- Find the Shortest path from the source to destination on a grid (<https://www.geeksforgeeks.org/shortest-distance-two-cells-matrix-grid/>)
- Write a brief on time, space complexities, and approach used to solve both questions
- Followed by Some 30 Behavioral MCQ questions

Tips:

- Prepare Amazon Interview experience questions on GeeksForGeeks and Leetcode Amazon tag problems. Will receive notification call/mail if we get Shortlisted
- I had 3 rounds which were conducted on Amazon Chime \xc2\x9a0

Round 2:\xc2\x9a0Interviewed by an SDM

- Tell me about yourself
- Your favorite project and why it is so?
- Tell me an experience when you have to disagree with your manager
- Tell me an experience when you had to redo the work and how you handled it
- Design an approach for glowing different combinations of LEDs(Red, Blue, and Green) \xe2\x80\x93 Focused on OOPS concept and SOLID principles

Round 3 :

- Tell me about yourself
- Behavioral question
- Given a pair of Northern and Southern cities which are separated by a river. Find the number of bridges possible to connect the pairs without Intersection- based on Longest Increasing Subsequence

Round 4 :

- Introduce yourself
- Behavioral questions \xe2\x80\x93 When you helped others in your team voluntarily
- Find the number of eligible cities that can be covered with the given budget \xe2\x80\x93 where eligible cities are the leaf nodes of a tree \xc2\x9a0
- First Non-repeating character in a data stream \xc2\x9a0

Tips : \xc2\x9a0

- Relax and answer confidently
- Prepare on LEADERSHIP principles \xe2\x80\x93 Practice STAR method while answering Behavioral questions
- Ask questions \xc2\x9a0

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Amazon Interview Experience for SDE 1 (Experienced)

- Last Updated : \n28 Sep, 2021

I had applied through Amazon Diversity Hiring Challenge for women at Hacker-earth.

Round 1: Online Coding Test

- There were two coding questions that had to be solved in 3 hours. I was able to solve one completely and one partially. After around a month, I received a mail from Amazon that I was shortlisted for the interview. My first two rounds of technical interviews were then scheduled after a week.

Round 2: Technical Interview 1

- The interviewer was SDE-2 at Amazon. The interview lasted for an hour.
- It started with a brief introduction. Then she directly moved to the coding questions:
- <https://www.geeksforgeeks.org/print-all-subarrays-with-0-sum/>
- I solved this question using hashing.
- <https://www.geeksforgeeks.org/rearrange-characters-string-no-two-adjacent/>
- I solved this question using a priority queue.
- Then she asked me two leadership questions:
- Tell me about a time when you had to make a decision under pressure to meet a deadline.
- Tell me about a time when something unexpected came up. How did you deal with the situation?

Round 3: Technical Interview 2

The interviewer was SDE-2 at Amazon. The interview lasted for an hour.

- It started with an introduction and then he asked me two coding questions. Given a set of mapping A->B, where A is getting infected with covid-19 through B. I had to tell who was the first person to start the infection. Eg, 2->3, 3->4, 5->6, 7->6, 6->1. So here 1 will be the answer. I solved this question using a set.
- <https://www.geeksforgeeks.org/maximum-product-subarray/> I solved it in TC O(n) and SC O(1). Then he asked me to send him a write-up of any one project that I've worked on in my organization.
- Both the rounds were held on the same day and on the basis of the combined results of both the rounds, I was shortlisted for the third round that was scheduled after a week.

Round 4: Hiring Manager 1

- The interviewer was Senior SDM at Amazon. The interview lasted for an hour.
- It started with a brief introduction of the interviewer and then he discussed the project that he was working on. He then asked me to tell him something about myself. After that, he asked me to choose any one project that I have worked on at my current firm, and then we had a discussion on that for around 30 min.
- He then asked me to tell about a time when I had to choose between different options available and then decide which one works the best. I discussed one of the projects I did in college and the discussion lasted for around 20 minutes.
- Then, he asked some questions on core subjects: asked me to write one SQL query, OOPS concepts, and the difference between interface and abstraction.

After around 10 days, I got a call for the last round of interviews.

Round 5: Hiring Manager 2

The interviewer was SDM at Amazon. The interview lasted for an hour.

- The first coding question was: Given a chessboard where you are at the bottom left corner. Tell me the number of different ways to reach the top right corner. We had a discussion on edge cases. Then I gave a solution using BFS and he asked me to write the code for it, but that was best suited to find the smallest path. He told that the question will be solved using a greedy approach. Since I was not able to solve it completely, he switched to the next question.
- <https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/> I solved this question using binary search and he was satisfied.

Then he asked one leadership question.

Verdict: Selected! After two days, I got a mail that I was selected.

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Amazon Interview Experience for Programmer Analyst 2021

- Difficulty Level :\n[Basic](#)
- Last Updated :\n14 Sep, 2021

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Amazon Internship Interview Experience | On-Campus 2021

- Difficulty Level :\n[Easy](#)
- Last Updated :\n06 Sep, 2021

Round 1: Online Assessment:

1. **Debugging:** Solved 7/7, time limit was 20 minutes.
2. **Coding:** [xc2\xxa0](#)
 - <https://leetcode.com/discuss/interview-question/241808/Google-Two-sum-closest>
 - Problem-based on binary search.
3. **Worklife assessment:** Don't know the time limit, was sufficient. (The mail mentioned it would be 20 minutes but there was no timer in this section).
4. Aptitude: 24 questions in 30 minutes.

Round 2: Interview

There was only 1 round of interviews for Summer Internships, duration ranged from 30 minutes to 80 minutes. Most were over around 50 minutes.

- The interviewer introduced himself and then asked me to introduce myself.
- My interview lasted for only 30 minutes
- He told me that my interview was going to test me on my coding and problem-solving skills.
- First, he asked me what a Linked List is.

3 Coding questions followed:

- Swap Nodes in pairs <https://leetcode.com/problems/swap-nodes-in-pairs/>, He asked me to write the structure of the Node class for the Linked List first. Then I gave him an iterative approach. He told me to code it. As I started writing the code, I thought recursive would be cleaner, I said the same to him, and he told me to code whatever approach I want. I coded the recursive implementation. Once I was done, I told him that the code is done, just let me dry run it once. He said, let us do it together, he gave me input, and I took him through every line of the code, what value was being stored in each variable after each line, I wrote all of this down in the comments, he was satisfied with it and moved on to the next question.
- Print all subsets of the given array <https://leetcode.com/problems/subsets/>. I gave him a backtracking approach and told him how my code would execute on a given set of 3 elements, once he was satisfied, he asked me to code it. Once I was done with the code, I had to again take him through the dry run of the code on the same set of 3 elements, the recursion went very deep during the dry run, I got a little confused after 3 subsets were printed but I was able to go through till 4 or 5 subsets, he was satisfied then.
- Level Order Traversal of Binary Tree <https://www.geeksforgeeks.org/level-order-tree-traversal/> Since my first 2 questions were on the easier side of the medium questions, I figured he might give me a harder question now, but to my surprise, he gave me the easiest question possible. I told him the queue implementation, he gave me a binary tree, I showed him by writing down the queue state in each iteration and printing the output. Once the complete level order traversal was done he told me to code it.

Tip: If you're explaining the dry run of a recursive code, maintain a call stack, and keep pushing all the function calls onto the stack, I didn't do this so I got confused when I backtracked as I forgot what the last call was after 4 levels.

After the code was done he said that will be it, do you have any questions for me? I asked him

about the tech stack used at amazon and at his team.

Verdict: Selected

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Amazon Interview Experience for SDE 1 | Off-Campus

- Difficulty Level : \n[Medium](#)
- Last Updated : \n06 Sep, 2021

I applied at Amazon via their job portal for various positions. I had been applying continuously for various SDE-1 positions for over a year at Amazon before I finally received a link for their Online Assessment. So if you are not receiving a link for the online Assessment then don't be disheartened, keep applying, they will have to give up in front of your determination and perseverance.

Online Round :

There were two questions:

1. The first one was a simple array question and it could be solved using the brute force method.\xc2\xa0
2. The second question was based on finding the shortest route between two points on a grid. It could be solved using the BFS algorithm.

I got full marks for the first question, and for the second question, I got 16/20.\xc2\xa0

Most of my fellow batch mates who received the OA link got full marks in both questions, so I wasn't expecting an interview call. But guess what? Out of all the students only I received an interview call. So never forget that your resume plays a very important role in you getting selected. So always make your resume very carefully and tailor it according to the job description.\xc2\xa0

I received an interview call from HR after 45 days. I was invited for 2 interview rounds. These were purely technical rounds and were taken by SDE-2s. The HR would try to set up the interview in a short time, but take your time and ask for a minimum of a week\xe2\x80\x99s time and a maximum of two weeks\xe2\x80\x99s time for preparation. The interview was conducted over chime and a shared code editor.

Round 1: Interview Round 1

1. There was only one interviewer and they will first introduce themselves and then ask you to introduce yourself.
2. The first question was \xe2\x80\x93 <https://www.geeksforgeeks.org/find-a-peak-in-a-given-array/>
3. The second question was \xe2\x80\x93 <https://www.geeksforgeeks.org/sort-linked-list-already-sorted-absolute-values/>
4. For both, the questions first tell them the brute force solution and then explain the optimized method.
5. They will ask you to make slight optimizations that won't necessarily change the time complexity but can save computations.
6. Explain to them the time and space complexity.
7. Then he asked me what was a technical challenge I faced in my project. Follow the STAR method for giving your answer.
8. Think out loud. Ask for feedback during the questions and ask for clarification if you didn't understand any part.
9. In the end, he asked me if I had any questions. Be sure to ask some questions that would leave a positive impression on the interviewer.

Round 2: Interview Round 2

1. This was again taken by an SDE2 and started with a brief introduction.
2. The first question was \xe2\x80\x93 <https://leetcode.com/problems/asteroid-collision/>
3. The second question was \xe2\x80\x93 <https://www.geeksforgeeks.org/find-subarray-with-given-sum-in-array-of-integers/>
4. Always discuss edge cases and be as interactive as possible with the interviewer.
5. Again keep a question ready that you would want to ask the interviewer.
6. Be organic in your conversation with the interviewer.

Round 3: 3rd and 4th Interview Round

1. Both these rounds were managerial rounds.
2. The interviews started with a brief introduction of what domain the managers were working in. You should pay a lot of attention to these introductions as asking some questions related to their domain at the end would fetch your really good points.
3. Both the managers dived right into my internships, and my projects. These questions should be answered keeping in mind the LEADERSHIP PRINCIPLES using the STAR technique.
4. In the 3rd round, I was even asked to draw the system design of my projects and he asked my very targeted questions regarding the design, something which I had not prepared very well, but luckily I knew the projects well and was able to adapt at the moment. So be sure to have in-depth knowledge about your project and if you are not sure about some project then it\xe2\x80\x99s best to avoid talking about it.
5. I was also asked to design the Tiny URL problem. So it is safe to prepare design questions too for interviews.
6. A few fact-based questions were asked in the 4th round. How are google maps able to show the traffic density at a location.
7. At the end both the managers asked me if I had a question, and I was able to ask a really good question, as the manager answered it for 7-8 minutes and praised me for asking it.
8. We often underestimate the power of a really insightful question asked at the end, this is an opportunity to showcase to the manager that you are more than just another coder and that you think and care deeply about the work and the organization.

After about 5 days I received an offer from Amazon.

In the end, I would say that it took me more than 200 applications to get an interview call at Amazon, so don\xe2\x80\x99t be disheartened by setbacks and failures. Use them to improve yourself and grow as a person.\xc2\xao

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Amazon Internship Interview Experience | On-Campus

- Difficulty Level :\nHard
- Last Updated :\n03 Sep, 2021

Round 1: Online Test

This test was conducted on the AMCAT platform. This round was of 2.5 hours and comprised of 4 sections:

Debugging Round:\xc2\xa0

- This round comprised of 7 debugging questions and we were allotted 20 mins to solve them. The debugging questions were fairly simple. Students could choose whichever language(C++, Java, C) they were comfortable in to attempt the debugging questions. For this round, I would suggest one have a sound knowledge of the very basics of programming. One should know the difference between pre-increment and post-increment operators, various sorting algorithms, conditional statements, and the implementation of basic data structures.

Coding round:

We were given two coding questions and were allotted a total of 70 mins for this round. There were different sets of questions. Questions in my set were as follows:

- Given an N-ary tree with each node assigned a value, return the reference to the node which has the highest average of all the values included in its subtree and itself. This was a fairly simple problem if you have a good understanding of trees and their traversals.
- I solved this question in a bottom-up manner. I had created a class Pair that had two properties Total value of all the nodes present in a given node\xe2\x80\x99s subtree, Total elements present in the given node\xe2\x80\x99s subtree
- One object of the \xe2\x80\x98Pair\xe2\x80\x99 class was associated with each of the nodes and was passed up to the parent for the required calculations and computations.
- Given a string, find the number of a distinct set of partitions that can be made such that each partition is a prime number <https://www.geeksforgeeks.org/count-of-ways-to-split-a-given-number-into-prime-segments/>
- This was a good question as it involved quite a heavy implementation of sieve, backtracking, and dynamic programming for time optimization.

Leadership Principles:\xc2\xa0

- This round comprised 60 leadership questions. It is comprised of various situational questions and tests your reactions towards various situations. It also checks your leadership principles, your overall moral values, your priorities, and what you are as a person overall. Each question had a slider where you had to slide the slider to the level you consider to define you the best. This round was of nearly 20-30 mins.

Aptitude:\xc2\xa0

- There were 24 aptitude questions and was of about 30-40 mins in duration. The questions were fairly simple. Logical Reasoning and conclusion-based questions are one thing I\xe2\x80\x99d suggest the students practice a little bit to gain speed and clarity.

Nearly 250 people had sat for the first round and 55 were shortlisted for the interviews.

Round 2: Interview Round

This is generally a 50-60 minutes interview round. This is taken on the platform Amazon Chime.

- My interviewer started off by giving a small introduction of himself and asked me for mine. In my introduction, I had explained my growing interests in the field of web development so he asked me a little about my projects and the tech stack(MERN) I used.
- How has the MERN stack resolved the issues you faced earlier.
- Why ReactJs? (Reconciliation, Virtual DOM, Diffing Algorithm, Reusable Components)
- How is ReactJs better than its competitive frameworks?
- Why NodeJs? (Single-threaded, Non-blocking I/O, Event Loop, Asynchronous tasks, JavaScript-based)
- What do you mean by single-threaded, non-blocking I/O?
- What is an event loop?
- Difference between SQL and NoSQL databases
- Why MongoDB?
- The basic idea of my project
- How would you resolve issues faced in Cowin App?

After a 20 minutes long discussion on my project, he moved on to the DSA questions

- Given a stream of infinite characters(not necessarily alphabets) return the first non-repeating character in a stream whenever asked. I explained to him the basic approach using a Queue and HashSet/HashMap. However, he wanted a more optimized approach where both the input and output functions were to be performed in O(1) time. I was stuck in this but the interviewer was very friendly and gave me a lot of hints. The interviewers always see if you are able to reach the approach to follow the hints they give you very rigorously. Finally, I could solve it using a Doubly Linked List using a concept similar to LRU Cache.
<https://practice.geeksforgeeks.org/problems/first-non-repeating-character-in-a-stream1216/1>
- A very standard Breadth-First Search(BFS) question where I was given good and rotten cells and each rotten cell could rot the nearby good cells in 1 unit of time. Calculate the time taken to rot all the good cells. <https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/>
- He finally asked me If I had any questions for him. I asked him about the work culture at Amazon. The work-life balance at Amazon and feedback if any(don't ask this).

Finally, 25 students were offered the summer internship at Amazon and I was lucky to be one of them.

Verdict: Selected

Tips:

- Go through the previous year's Amazon questions. It can easily be found on the GeeksForGeeks portal.
- Go through the Leadership Principles of Amazon. Will help you a lot.
- Keep communicating with the interviewer and let him know about your approach. Ask for edge cases and keep your confidence high.

I would like to thank GeeksForGeeks for helping me through my preparation journey. All these questions are already present on the GFG portal. Go through them thoroughly.

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Amazon Interview Experience for SDE 1 (6-Months Experienced)

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 01 Sep, 2021

I applied for SDE1 Role in Amazon March 2021. Selection process completed till Mid-June. I will try to give all the details in this Article.

Apply \xe2\x80\x93 I visited Amazon career page, there I found some roles for SDE1 (6 months experienced). I messaged 3-5 people working in amazon for referral through linkedIn. I attached my resume and job Id in the message. And one generous person referred me for the same. In 1 week, recruiter contacted me. and I got a coding round link.

Coding Round \xe2\x80\x93 Coding round was of 45 min. There were 2 coding questions, both were of customized sort function.\xc2\xa0

- In Interviews, Expectations for every coding question asked was explanation, optimized coded solution, time & space complexity. Take your time, but do every question properly. Show your perfection. There will also be interviews with only 1 coding question asked.\xc2\xa0
- Prepare a professional scenario, instances for questions related to Leadership principles.

Round 1 \xe2\x80\x93 He started the interview with a small introduction of both of us. He asked about OOP concepts. He asked about my current project, learnings in my current company. He asked about vertical and horizontal scaling, small definitions. Coding questions:

1. <https://www.geeksforgeeks.org/segregate-0s-and-1s-in-an-array-by-traversing-array-once/>. I easily did this question in my first attempt. So, he also asked to solve this problem <https://www.geeksforgeeks.org/sort-an-array-of-0s-1s-and-2s/> I did it completely too.
2. There is a manager who needs to manage tasks and schedule them. Tasks have a dependency on one another. For this, the solution was topological sorting. <https://www.geeksforgeeks.org/topological-sorting/> I wrote the solution. The interviewer caught the edge case. i.e. Topological sorting is only applicable to the acyclic graphs. I missed this case. I wrote the correct code in the end.\xc2\xa0

Round 2 \xe2\x80\x93 Round 2 happened on the same day. Interview started directly with the coding questions:

1. <https://www.geeksforgeeks.org/length-of-the-longest-substring-without-repeating-characters/>. I gave the most optimized solution in my first attempt. I did two mistakes in my code. It was pointed by the interviewer. I resolved it.
2. <https://www.geeksforgeeks.org/inorder-successor-in-binary-search-tree/>. This question was new to me. We both discussed for the solution. At the end, we developed O(h) time complexity solution. I wrote the solution. He was satisfied.

Leadership Principle questions: How you gained your interest in coding? What you managed the preparation for amazon with company work?

Round 3 \xe2\x80\x93 Interviewer was hiring manager. He started the interview with small introduction of both of us.\xc2\xa0

- Then, He jumped to coding question: <https://www.geeksforgeeks.org/add-two-numbers-represented-by-linked-lists/>. I wrote the correct code in my first attempt. Then, he discussed

how much the code will change, if there numbers are float. He wanted me to give answer in modular way. Discussion and writing pseudo code went long. So, only 1 coding question was solved.

- Leadership Principle questions: How you handle tight deadlines ? How you handle conflicts in work?\xc2\xa0

I asked about my feedback to the interviewer. He said:

1. I assumed that, every node will have 1 digit. Number is an integer, not a float. Number is always positive, not negative. I should have asked these questions to him.
2. I wrote function named as \xe2\x80\x9ccadd2ll\xe2\x80\x9d. He advised me to write it full as \xe2\x80\x9ccadditionOf2LinkedList\xe2\x80\x9d.
3. He told me the minimal code alterations for float numbers.

Round 4 \xe2\x80\x93 This was the bar-raiser round, most important round of the interviews. He thoroughly asked me about my work in current company.

- Leadership Principle questions: Situations, where you did more than expected? How you handle tight deadlines?\xc2\xa0

Then, He asked me this coding question:

1. Convert given doubly linked list to spiral ordered binary tree.

eg. 1-2-3-4-5-6-7-8\r\n 1\r\n 2 3 \r\n 7 6 5 4\r\n 8

At first, I was giving confusing solution. Then he asked me which data structure to be used to traverse binary tree in spiral order. From there, I got the correct solution. i.e. Traversal of doubly linked list and the reverse of <https://www.geeksforgeeks.org/level-order-traversal-in-spiral-form-using-deque/>

I wrote the complete, error-free code in one go. Interviewer was impressed with me.

Result: Selected for SDE1 profile. Thanks to GeeksforGeeks.\xc2\xa0

Tips \xe2\x80\x93\xc2\xa0

1. Study lots of amazon interview experiences. It will help.
2. If you covered all the edge cases in the code, and your code is correct. Then, interviewer will really be impressed with you. Dry run your code, before submitting to interviewer.
3. Give proper, complete names to function and variables.
4. If you have doubts for the question. Do ask it. Interviewers will be happy to answer.
5. Propose a solution to interviewer at first. If he is fine with it, then start coding.\xc2\xa0
6. Think a question before-hand, that you can ask to interviewers at the end.\xc2\xa0
7. Luck plays an important role. So, be consistent in your practice and in applying in jobs. All the dreams, will come to you one day.

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Amazon Interview Experience for SDE-1 | Off-Campus 2021

- Difficulty Level :\nEasy
- Last Updated :\n02 Sep, 2021

I got this opportunity through my college email, which was sent by Amazon India Campus SDE. I applied and I got the Test link.

Round 1: Online Assessment

This is a written test, which contains several sections:

- Code Debugging (Automata Fix) :
 1. This section contains 7 questions and is given 20 minutes of time. We have to find the mistake in the given code and we have to fix and run the code. If all test cases passed. Then it\xe2\x80\x99s correct.
 2. I have done all the given 7 questions in the given time. Most of them are related to sorting and counting frequency type of coding questions.
- Coding Test:
 1. \xc2\xabGiven two coding questions, easy to medium level questions.
 2. The first question asked is: <https://www.geeksforgeeks.org/count-number-of-substrings-with-exactly-k-distinct-characters/>
 3. The second question asked is similar to: <https://leetcode.com/problems/most-frequent-subtree-sum/>, We have to find maximum subtree means, which is the sum of subtree/number of nodes in a subtree.
- Logical Reasoning: This round contains basic Logical reasoning questions.
- Behavioral Questions: In this section, all questions are related to situation questions. Like they\xe2\x80\x99ll give you two situations, we have to select one.

Round 2: Interview 1\xc2\xab

- There were two interviewers one is SDE-1 and another is SDE-2.
- Firstly they introduced them and asked me to introduce myself.
- They directly jumped into coding questions.
- The first question is: Asteroid Collision, I solved it. I had few mistakes but he made me correct it.
- The second question is 3Sum, I first gave brute force and I gave optimized using sorting. They asked to directly code as we are running out of time.
- And finally done with round \xc2\xab01.

Round 3: Interview 2\xc2\xab0

- After 15min, I got a call from the coordinator that my second interview will be at 11:30 am, on the same day.
- I joined the interview, he was a bit late, as he didn\xe2\x80\x99t any information that there is an interview for him, he joined 15min late.
- He introduced himself and asked about me.
- And he jumped into coding questions.
- He asked me two coding questions.

- The first question is: Sudoku Solver
- As I have solved this question already, I solved it using backtracking.
- As there is still time remaining, he asked me another question which is related to the graph.
- I misunderstood the question and solved the misunderstood question.
- In the end, he got to know that I didn't understand the question properly.
- He asked for which question, I have solved.
- He said that's ok, you did something.
- I thought I wouldn't go to the next round.
- But I got mail that my 3rd interview is at 5 pm on the same day.

Round 4: Interview 3

- In this round, the interviewer is a Software Development Manager at Amazon having work experience of almost 12 years.
- First, he introduced himself and told me to introduce myself.
- He asked me about the projects which I have done.
- He went deep into like technologies, I have used.
- This discussion about the project went around 30 minutes.
- And he jumped into coding question
- The question is Validate Arithmetic Expression, Which is similar to [Balanced Brackets](#).
- I tried to solve it, and I dry run it with few test cases, and it worked with those test cases.
- And he said ok, That's it from my side.
- And asked Any questions??
- I asked about his experience at Amazon and what kind of projects will be given to freshers.
- He really explained it very well and he is very patient.
- We had a very nice conversation at the end, while he was telling about his interview experience which is 12 years ago.
- The interview Ended.

After almost a week I got a call from the recruiter that I got an offer for SDE role at Amazon.
The offer letter is attached below.

VERDICT: ACCEPTED

Tips:

1. Do Leetcode and solve as many problems as possible and understand each and every question and try optimizing the solution after doing the brute force.
2. Interviewers are there to see your problem-solving skills, not the output, so understand the approach while solving a question.

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Amazon Interview Experience for SDE-1 2021

- Difficulty Level : \n [Medium](#)
- Last Updated : \n 25 Aug, 2021

I xe2\x80\x99m a B.Tech CSE graduate from a Tier-1 college (Batch of 2020) with 1 YOE. I recently interviewed for an SDE-1 role at Amazon. The recruitment process included 5 rounds in total as follows:

Round1(Online Assessment): I had to solve two questions within a period of 90 minutes along with writing my approach and time complexity of the solutions. The Questions were:

1. This was a variation of <https://www.geeksforgeeks.org/given-sorted-array-number-x-find-pair-array-whose-sum-closest-x/>. I was able to solve it within minutes and took the proper time to explain my approach. (All test cases passed).
2. This was a variation of <https://www.geeksforgeeks.org/given-two-sorted-arrays-number-x-find-pair-whose-sum-closest-x/>. Although the underlying concept was simple, it required some work to bring the input to the required format (e.g. use of custom sort). I was able to solve this as well in 30 mins. but only 70% of my test cases passed and I wasn\xe2\x80\x99t able to fix the bug in my code. I took time to explain my approach properly though which I knew was correct.

The online assessment also included a separate behavioral objective questions round.

Round 2(Technical Round 1): Although I got the notification about me passing the online assessment just after 2 days, my interview was not scheduled for about 40-45 days. This happened because the recruiter had somehow missed my name. So, if you\xe2\x80\x99re not getting called up for an interview, please contact the recruiter and let him know about the same.

The duration of this round was 60 minutes. The first 5 minutes were for the introduction and then we jumped on straight to the questions. I was asked two DSA questions in this round:-

1. <https://www.geeksforgeeks.org/find-the-element-that-appears-once-in-a-sorted-array/>. I gave an O(n) solution at first and explained myself really well. Then the interviewer asked me to optimize it further and I said that since I haven\xe2\x80\x99t taken into account that the array is sorted, we could optimize it using binary search if we can figure out the necessary conditions to discard half of the search space. The interviewer gave me a hint and I figured it out. I was asked to write proper code for this.\xc2\xao
2. <https://www.geeksforgeeks.org/remove-duplicates-from-a-sorted-linked-list/>. This was also a straightforward question. I was directly asked to write the code. We did a dry run and rectified one mistake. After that, we tried different edge cases, which all passed.

In the end, the interviewer also asked me -> What is multi-threading ?, Give me an example of where it is used and What are the resources shared b/w multiple threads.

The interviewer was extremely nice and the whole interview felt more like a discussion.

Round 3(Technical Round 2): This round was almost extremely identical to the first round. Five minutes of intro followed up by two DSA questions:-

1. <https://www.geeksforgeeks.org/trapping-rain-water/>. The interviewer presented a variation of this question. Although I had done this question before(who hasn\xe2\x80\x99t ?), it took me a long while to understand he was asking for this, because he was extremely vague about the question. He didn\xe2\x80\x99t even give me a question actually, he just gave me input and

output, again the input was vague so I had to ask a lot of questions to get the question clarified. In the end, he shared a pictorial representation with me and I gave him the answer within 5 minutes (coded for it as well). I gave him a $O(n)$ space complexity answer though and because we had spent too much time on this, I just told him the optimized approach but didn't code for it.

2. <https://www.geeksforgeeks.org/bottom-view-binary-tree/>. I had just 10 minutes to explain this question + write a clean code + clarify the doubts that the interviewer had. I explained to him the approach, the data structure I would use(Used a Hashmap with key as horizontal distance and value as a pair of vertical distance + node value). The interviewer said why do you need to keep track of vertical distance, wouldn't the nodes in a preorder traversal be coming in the order of increasing depth. I explained to him that in a denser tree, or a tree where left and right children are protruding too far, that wouldn't be the case. I wrote the code for this, while he was on a call with his manager. He didn't ask any more questions (but he looked confused, I wasn't too sure if he had understood my approach clearly).

In the end, I asked him one or two questions about his experience with Amazon, and he told me quite a lot of things, we ended up talking like half an hour extra after the interview. He was a pretty chill guy.

Note- None of the interviewers till this stage had more than two years of experience (in the industry). I

Round 4(Hiring Manager Round 1): The interviewer was a Software Engineering Manager and had experience of almost 20 years. This round was all about my past experience and projects. The duration of this round was 60 minutes too. We started with introducing ourselves and then jumped on to my roles and responsibilities in my current role. As we discussed my project(s), he asked me a lot of behavioral/LP questions in between, here are a few ones I remember:-

- Tell me about an instance when there was a high-risk production issue and you stepped up to resolve it.
- Tell me about an instance when you worked on a code-intensive task and you gave valuable inputs to improve it.
- A few more questions were along the same line but I don't remember them.
- In the end, he asked me one design question, which was to come up with the data structures I would use to create a game like this https://www.transum.org/software/River_Crossing/
- I proposed the classes I would create for our character, and how I would store a denylist for each character (ones that can't be together). He was not too satisfied with my approaches but we didn't go too deep into this question anyways because we were overtime already.

In the end, before leaving he asked me the reason I was looking for a change.

Round 5(Hiring Manager Round 2): The interviewer was a Software Engineering Manager and had experience of almost 13 years(all at Amazon). The interviewer asked me whether I have had technical rounds, I said yes and then he said that he was not gonna focus on whatever has been covered. This round was all about him being trying to do the LP analysis on me. He asked about 5-7 situational/behavioral/LP questions for me. A few of them are:-

1. Tell me about a time when you over-delivered.
2. Tell me about a time when you disagreed with your team and had an impact.
3. Tell me about the time when you had a hard time doing a task and what did you learn from the experience.
4. Tell me about an instance where you had to compromise on the best practices to deliver

something on a time crunch.

5. Tell me about a time when you did something good for a customer.
6. Tell me about a time when you asked for feedback from a customer and how did you incorporate that.
7. Tell me about a time when the customer disagreed and you had to understand their point of view and work towards finding a solution.

I had a hard time explaining scenarios where there was customer interaction simply because my job didn't directly involve me talking/affecting the customers.

In the end, I asked him about Amazon's culture and what he thinks of one of the newly added leadership principles (no reverse xD).

Thoughts:

- Lately, Amazon interviews have been inconsistent with what they tell you it would be like.
- People who have had experiences, where they were, were asked at least 2 DSA questions in all rounds, and a few minutes of behavioral/LP questions in each round. Then there me who have had just two technical rounds(which is true according to what they tell you since according to the format only first two rounds are technical).
- Additionally, even though for an SDE-1 no one expects you to be answering system design questions, but in one round or the other, you can expect one/two Low-Level Design questions in which they care more about the data structures that you decide to use.
- The emphasis of Amazon with respect to identifying a person's behavior and whether they would be a cultural fit at Amazon or not is tremendous and is growing day by day. Although you could be someone that is very good at problem-solving but might not be a cultural fit in their eyes, and the reverse is true as well. You need to be good in both departments.

Results:-

Result awaited.

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Amazon Interview Experience for SDE1 | On Campus

\xe2\x80\x93 Aug 2021

- Difficulty Level :\nHard
- Last Updated :\n24 Aug, 2021

Round 1:

This was an online test. It consists of 5 sections.

1. **Debugging:** We have to select a language before attempting this section. There were 7 questions. This section was easy and questions were mostly on sorting, removing an element from an array, etc.
2. **Coding:** There were two questions. One was easy (<https://www.geeksforgeeks.org/given-an-array-a-and-a-number-x-check-for-pair-in-a-with-sum-as-x/>) and the other one was <https://leetcode.com/discuss/interview-question/699973/goldman-sachs-qa-turnstile>.
3. **Aptitude**
4. **Behavioral**
5. **Feedback**

Round 2:

The interviewer was SDE2. He introduced himself and asked me to introduce myself. He then jumped into coding questions.

1. This question was based on topological sorting. Given several courses in a college. Each course may have a prerequisite course that you have to complete in any of the previous semesters if you want to complete the current course in the current semester. The courses which have prerequisites completed or courses that have no prerequisites can be completed in one semester. Return the minimum number of semesters to complete all courses. Discussed the Breadth-First Search approach and coded the same. He then asked about the time complexity (time and space complexities are very important, learn to calculate them and tradeoffs between them)
2. \xc2\x80<https://www.geeksforgeeks.org/rearrange-characters-string-no-two-adjacent/>\xc2\x80 Haven\xe2\x80\x99t solved this one before. Discussed with him the intuition that the maximum frequency characters are the most important here and we should arrange them apart first. I kept on discussing and finally got the idea to solve it by using heap (take top 2 frequency characters and arrange them side by side. Decrease their frequency and insert them again into the heap). He asked me to code it out and then asked me the time complexity. I said O(N log N) as we are using the heap (It was a blunder). But he asked me to think again. After some time he gave a hint that we can have a maximum of 26 characters in heap. Then I told that the time complexity is O(N) (for getting the frequency of characters) since heap operations are of O(1) time.

Then he asked me whether I had any questions for him. I asked him how would be the work for an SDE1 and workload in the company.

Round 3:

I introduced myself to the interviewer and then he jumped into the questions.

1. \xc2\x80<https://www.geeksforgeeks.org/decode-string-recursively-encoded-count-followed-substring/>\xc2\x80 discussed the stack approach. He then asked me to code and a dry run for a given

test case. He asked me the time complexity. I told it is $O(N^*$ maximum k value in the string).

2. This was a hard question. There are N cities, and M roads (bidirectional) connecting them. Given start city, end city, and an initial tank value (V). Traversing each edge would cost one unit of tank value. However, few cities are called fuel cities, we can full the tank to its initial value when we reach them. Return a boolean representing whether we can reach the end city from the target city or not. Haven't solved this kind of problem before, I asked him to give me 2 minutes to think and come with an approach. After that, I discussed the Breadth-First Search approach where I would store the city and tank value in a queue and traverse in a conventional Breadth-First Search manner by maintaining a 2D visited array. He then asked me to code. After that, he showed me a test case where this approach would be failing. Then I discussed with him and told him that we can revisit a city if we have a tank value more than the last time. He asked to modify the code.

\xc2\x0

Round 4:

The interviewer was a senior engineer. He was very friendly and he told me this round will consist of coding and behavioral questions.\xc2\x0

He gave me a string which is basically an HTML document and asked me to return a boolean value representing whether the given HTML document is valid or not. I then came up with a valid parenthesis approach (opening an HTML tag should have a respective closing HTML tag adjacent to it). He then showed a test case where there is a body tag embedded within the head tag and told that even this should return false. Then I asked for some time to think. After that, I told that I construct a tree or a graph that represents the proper DOM structure that is valid. Then I told that whenever I encounter a tag I will check that its parent in the given document is valid or not by looking up the adjacent nodes or parent (in case of tree). He was impressed with that and asked to code it out. I couldn't complete the code within time. He then asked some questions on my projects and asked what was the most difficult thing I have encountered while doing my project, how did I handle it. And he asked what would I do when I got stuck in a project, whether I ask my mentors/seniors or do it myself.\xc2\x0

\xc2\x0

At last, he asked me whether I had any questions for him. I asked the same questions

\xf0\x9f\x99\x82

(show them how much you are interested in joining the company whenever you got this chance)

I was offered a 6-month internship and FTE at the end of the hiring process.

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Amazon Internship Interview Experience | On-Campus 2021

- Difficulty Level :\nEasy
- Last Updated :\n10 Mar, 2022

Coding Round:\xc2\xa0

1. 7 easy debugging questions related to algorithms to be done in 20 minutes.
2. 2 coding questions with varying difficulty of easy to medium to be solved in 70 minutes. I was given the following two problems:\xc2\xa0
 - A question on arrays that can be solved greedily.
 - A variation of <https://www.geeksforgeeks.org/value-to-be-subtracted-from-array-elements-to-make-sum-of-all-elements-equals-k/>
 - <https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/>
 - An easy question using an implementation of Dijkstra\xe2\x80\x99s Algorithm.
3. Questions based on behavior and work style. It takes about 20 minutes.
4. 24 reasoning questions to be solved in 35 minutes. They\xe2\x80\x99re a bit easier than NTSE Stage II MAT questions.

Interview: There was only one round of interviews. The interview started without any formalities. I was given a live code link. The panel consisted of 2-3 individuals joining in and out, but only one of them was interacting with me. Two easy questions were asked during the interview.

Question 1: An apparently tricky question that could be solved greedily.

Question 2: <https://www.geeksforgeeks.org/find-number-of-islands/>. The interviewer further asked if this could be done by using constant extra space.

The interviewer asked if I had any questions. I asked questions like how algorithms are used in the field they\xe2\x80\x99re working and what teams do what kind of tasks.

Finally, 13 people, including me, were selected out of 41 shortlisted students.

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Amazon Interview Experience | On-Campus 2021

- Difficulty Level :\n[Medium](#)
- Last Updated :\n22 Aug, 2021

Screening Round: The screening round for amazon has a variety of questions:

1. *Debugging questions:* Very very easy, you don't need to prepare for this.
2. *Coding questions:* There was a total of 3 questions, 1 easy and 2 medium-level questions. I don't remember the questions.
3. *Work style assessments:* It's basically an MCQ to assess your behavior and your attitude
4. *Aptitude questions:* Prepare from GeeksForGeeks

Round 1: The interviewer was SDE1 and he was friendly. He introduced himself and asked me to introduce myself. After the introduction, we jumped right into coding questions. He asked 2 questions:

1. <https://practice.geeksforgeeks.org/problems/rotten-oranges2536/1>. Initially, I couldn't recognize the problem as Multisource BFS, he gave some hints, then I applied Multisource BFS to solve it. He made me write the code.
2. <https://practice.geeksforgeeks.org/problems/special-stack/1>. I had seen this question before. So I easily solved it. I had to write full code. He seemed satisfied with my code.

Then he asked me if I had any questions for him. Use this opportunity to convey that you are really interested in the company. I had prepared for this question the previous night. So I asked questions like: *how long does it take for SDE1 to get promoted to SDE2* *which office do you work in* *was your experience in the initial days when you joined amazon*. The interview went well. I had managed to establish a connection with the interviewer in that 1 hour of discussion. I knew I will get selected for Round 2.

Round 2: In round 2 there were two people both SDE1s. The round started like any typical interview; the interviewers introduced themselves and asked me to introduce myself. Then they asked a behavioral question: *If you want to choose between best-solution (but infeasible-solution) and substandard-solution (but feasible-solution) which one would you choose. Give supporting evidence by narrating an event in your life where you had to make such a decision*

Then we started with programming questions

1. <https://www.geeksforgeeks.org/place-k-elements-such-that-minimum-distance-is-maximized/>. I discussed the approach first. They seemed convinced with the approach so they asked me to code it up. After coding it up, they even made me walk through the code using an example. They were satisfied.
2. *Given a random array what algorithm would you use to sort it?* I said, *there are several sorting algorithms to sort a random list, each has its own pros and cons. We have to choose the right algorithm for the given situation*. Then he asked me the time complexity of some popular sorting algorithms. Then they asked, *which sorting algorithm would you use if all the numbers in the array are in the range [0, 100]*. The answer is counting sort.

After these two questions, the interview was officially over. They asked me if I had any questions for them. I asked questions like: *How workload at amazon*, *If you are not familiar with the technology which is being used in the projects allotted to your team, how do you go about dealing with it*, *Did you notice any flaws in the way I communicated my ideas while solving coding question*. We had a great discussion. They were very happy with me. I knew I will get selected for Round 3.

Round 3: This time, the interviewer was a senior software engineer (SDE3). He was very cool. He was actually in Bermuda shorts when he was taking my interview LOL. I felt his conversation was more engaging than the other interviewers from the other rounds. No wonder he is an SDE3.

- The interview started with a casual conversation. He told me about his history, and the team he works for at Amazon, etc. We spent some good 15 minutes talking casually. I could tell that he is enjoying talking to me. Then the actual interview started. He said he is going to assess my behavior and problem-solving abilities. He allowed me to choose whether I wanted behavioral questions or coding questions first.
- I was having an engaging conversation with him and I didn't want to break the streak. So I said, *I would like to have behavioral questions first*. Then he asked some standard questions listed here https://www.amazon.jobs/en/landing_pages/in-person-interview
- Then he asked a coding question: *Given an html-document check if the hierarchy of tags is valid or not*. I started off with the idea of the stack. But he hinted that Tree could be a better data structure for this. Then I represented the hierarchy of tags in the form of a tree and I explained to him how I might go about solving it. I had solved similar problems before, so I was basically exploring how I could solve them. I wasn't sure how to solve it. I couldn't solve it completely. I was just beating around the bush. After some time the time was up so he interrupted me. I was totally unsatisfied with how I solved the problem. I thought I had made a negative impact. I was doubtful about getting selected. But I guess my answers to behavioral questions saved me.

VERDICT: SELECTED

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Amazon Interview Experience for SDE 1 | Off-Campus

- Last Updated : \n20 Aug, 2021

I applied for SDE1 on the Amazon job portal. After few days, I got an exam link from Amazon. In the exam, there were 2 coding questions(DP, Greedy) and 2 descriptive questions in which we have to explain how we approached the above 2 questions and write about their time and space complexities.

After few months, I got an Amazon Interview preparation call, in which they explained the whole interview process.\xc2\xao

Interview Round 1: The interviewer was SDE2 and made me comfortable by telling about himself and asking about myself. Then he asked about my projects, it was a long discussion and took 25 mins.

- Then he asked a coding question: <https://www.geeksforgeeks.org/boggle-set-2-using-trie/>. I first told him the DFS approach and then optimized using trie. We discussed all the edge cases and time complexity. He seemed impressed by my approach.

I had the next interview scheduled just after this.

Interview Round 2: The interviewer was SDE2 and she directly started with coding questions.

1. The first question was: <https://practice.geeksforgeeks.org/problems/search-in-a-rotated-array4618/1>. I started with brute force and then explained O(nlogn) \xc2\xao solution using Binary search. After some, I told her the O(n) approach.
2. The second question was: <https://practice.geeksforgeeks.org/problems/search-in-a-matrix17201720/1>. I solved it using binary search.

After few weeks my next rounds got scheduled.

Interview Round 3: The interviewer started with a briefing about himself and then asked about myself.

- Then he asked, have you ever faced a problem with a deadline?
- Then asked the question: <https://www.geeksforgeeks.org/minimize-cash-flow-among-given-set-friends-borrowed-money/>. I haven\xe2\x80\x99t seen this question before, so I took 4-5 mins to think. Then I explained to him my approach using DFS and bottle-neck. We discussed all the edge cases and time and space complexities. Although its preferred approach is greedy, I was able to do it in the same time complexity using DFS. \xc2\xaoHe was happy with my solution.

Round 4 was scheduled the next day.

Interview Round 4:

1. The interview started with the coding question:
<https://practice.geeksforgeeks.org/problems/add-two-numbers-represented-by-linked-lists/1> He said don\xe2\x80\x99t modify the input, so I used recursion with some conditions. He was impressed with the solution.
2. Then he asked another question: <https://practice.geeksforgeeks.org/problems/print-a-binary-tree-in-vertical-order/1>. I explained the approach using preorder traversal, then he said it will give a wrong answer for some cases so I used level order traversal. He also asked me to tell efficient and optimized data structure for this problem.

3. Have you ever learnt something on your own.
4. On what technology do you want to work.

Then he said we will let you know in 7 days.

After 7 days I got a call from HR that you got selected.

Keep solving problems, gain basic knowledge of all CS Subjects. Go through Amazon Leadership principles and have faith in yourself.

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Amazon Interview Experience for SDE-I

- Difficulty Level :\nEasy
- Last Updated :\n20 Aug, 2021

1st Interview-

- Swap Kth node from beginning with Kth node from end in a Linked List
<https://practice.geeksforgeeks.org/problems/swap-kth-node-from-beginning-and-kth-node-from-end-in-a-singly-linked-list/1>
- Check if two nodes are cousins in a Binary Tree:
<https://practice.geeksforgeeks.org/problems/check-if-two-nodes-are-cousins/1>
- Project-related questions

2nd Interview(Held on same day)-

- In a binary tree for every node you have to check whether it is even or not. If even then print its kth child.
- OS-related questions like. Thrashing, paging, scheduling algorithm,
- DBMS-related question \xe2\x80\x93 indexing, SQL vs no-SQL.
- Project-related questions

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Amazon Interview Experience for SDE

- Difficulty Level :[Medium](#)
- Last Updated :[20 Aug, 2021](#)

Round 1(Online Assessment): This round usually consists of two coding questions, for which you have to write the code as well as give a proper explanation in a separate window. The time for this round is approx 1 hr

Questions asked were:

1. Sort a list of orders of prime and non-prime orders (<https://leetcode.com/discuss/interview-question/1261316/amazon-qa-sde-1-new-grad-2021-batch-india>). I did this by simply passing my custom comparator to the standard sort function. It is easy but it has some edge cases, that took a bit of my time.
2. Optimize Memory usage (<https://leetcode.com/discuss/interview-question/373202>)

After this, you will have to do some behavioural MCQ type questions.

In all the upcoming rounds I was asked both behavioural and coding questions therefore I will try to include both of them.

Round 2: This round started with my introduction and current project. After this interviewer inquired about a time when I have to do some unexpected complex work and how I handled the situation.

Coding questions:

1. [Given a binary tree calculate the sum of all the left leaves](#)
2. [Implement LRU Cache](#). The interviewer purposely left this question vague by just quoting `Implement LRU cache`, therefore I asked many clarifying questions and slowly came to an optimal solution using a doubly-linked list and hash maps.

Round 3: This round also started with my introduction and current work.

Coding questions:

1. Evaluate an arithmetic expression that is given as a string, the expression will only contain numbers and the four operations +, -, *, /

Input: "3*2+5"\r\nOutput: 11

I decided to solve this question using two stacks, and storing all arithmetic operators and numbers in different stacks with rules:

low precedence operator can be pushed on a high precedence operator

When an operator is popped out then two numbers are also popped out from the other stack

so my algorithm was basically this:

- initiate two stacks as **operatorStack** and **operandStack**
- scan through the expression
- if a number is found push it into **operandStack**
- if an operator is found and the top of **operatorStack** has low precedence than this current operator, push in into **operatorStack**
- if an operator is found and the top of **operatorStack** has high precedence than this current operator, then keep on popping out operators from the **operatorStack** until the top has low or equal precedence than the current operator. With each operator popped, you have to pop two numbers from the **operandStack** and apply the popped operator on these two numbers and push the result back onto the **operandStack**, something like this:

```
op = operatorStack.pop()\r\nnumber2 = operandStack.pop()\r\nnumber1 = operandStack.pop()\r\noperandStack.push(result)
```

notice here the second number is popped first.

- after the scan of expression, pop the remaining operators from **operatorStack** with the same above rules
- Your final answer will be the top of the **operandStack**.

There is one more simple approach, convert the infix expression to postfix and evaluate it simply with one stack.

2. [Calculate the minimum number of jumps required to reach the end of an array](#)

I gave two approaches for this question, one $O(n^2)$ and the other $O(n)$

Since there was very little time left (around 15mins), I had some difficulty in explaining the $O(n)$ approach, but the interviewer was convinced and asked me to code that out.

After this some computer science-related questions were asked like:

1. What type of databases you have used
2. What is the difference between SQL and NoSql Databases and for which type of query both are optimized?
3. Difference between thread and process
4. Why is communication faster in the thread as compared to process (because thread share same memory space)
5. What are locks and semaphores

Round 4: In this round for approx 30 mins the interview asked behavioural questions and he really wanted detailed and deep answers for all of them. I am quoting the ones which I can remember:

- A complex feature you have worked upon, what challenges you faced, how did you handle each of those
- A time when you faced close and stringent deadlines, how did you meet them
- How did you learn the technology you were working on, what steps did you take?
- How did you improve on yourself? etc
- In the next 30 mins he asked this coding question: [Find a pair of numbers from an array whose sum is closest to zero](#). For this, I used sorting and two pointers approach

Round 5: Again in this round approx 30 mins were consumed by the behavioural questions, and similar to the previous one, he also wanted detailed and deep answers

Coding questions:

1. [Intersection of two linked lists](#): I gave two approaches for this: first one: using two for loops and the second one: using hashmap
2. [Symmetric Binary Tree](#) I solved it by doing a parallel dfs for both the child of the root and comparing the node at each level.

Some Tips:\xc2\xa0

- Don't try to take too much time in explaining the first question if it was easy because usually the interview also wants to ask a second question and hence you will be left with very little time to explain and code the second question.
- Be honest in all the behavioural questions because they ask many counter questions on your answer, and if you have made it up, it will surely fall apart at some time.\xc2\xa0

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Amazon Interview Experience for SDE-I (On-Campus)

- Difficulty Level :\nEasy
- Last Updated :\n20 Aug, 2021

The hiring process for Amazon consisted of 1 Online coding assessment + 2(or)3 Virtual Interview rounds. So, in total there were 3(or)4 rounds. There were minimal eligibility criteria of 6 CGPA and no backlogs.

Online Coding assessment: This consisted of 4 time-locked sections to complete in 2 hours. Could switch questions within the section.

- **Section 1:** Code debugging \xe2\x80\x93 7 ques, 20 mins
- **Section 2:** Coding \xe2\x80\x93 2 ques, 70 mins
- **Section 3:** Workstyle assessment \xe2\x80\x93 20 mins
- **Section 4:** Reasoning \xe2\x80\x93 24 ques, 35 mins

I solved all 7 debugging questions, passing all the test cases, and I also solved both the coding questions, passing all the test cases. It is better to spend enough time on the Workstyle assessment test, as it carries value too. The reasoning section was solvable in the given time. I got shortlisted for the next round. There were nearly 40 students selected for the next round.

Round 1(Virtual Interview \xe2\x80\x93 Coding): The interviewers introduced themselves and asked me to introduce myself too. Then they directly dived into coding questions. The session was on Amazon chime and LiveCode.

1. <https://practice.geeksforgeeks.org/problems/print-anagrams-together/1>
2. <https://practice.geeksforgeeks.org/problems/row-with-max-1s0023/1>

An optimized solution was expected for both the questions. First, the approach had to be discussed with the interviewers and once they were satisfied coding the required function alone was sufficient. Dry running the code will give an edge.

Round 2 (Virtual Interview- Resume, Coding and behavioral): The interviewers introduced themselves and asked me to introduce myself too. Then I was asked to pick one project from my resume and explain it in detail. After that, one coding question was asked :

1. <https://practice.geeksforgeeks.org/problems/minimum-cost-of-ropes-1587115620/1>. First, the approach was discussed. After an optimized solution was coded by me, I was asked to do a dry run and explain the code.

Next, two behavioral questions, related to Amazon\xe2\x80\x99s leadership principles were asked. This is an important part of the interview. Experiences from the past have to be narrated, with relevance to the leadership principles. It\xe2\x80\x99s best to follow the STAR approach.

1. Tell us about a time when you felt you needed more expertise to complete a task.
2. Tell us about a time when you went out of your comfort zone to complete a task.

Then, again another coding question was asked.

1. <https://practice.geeksforgeeks.org/problems/add-two-numbers-represented-by-linked-lists/1>. Similarly, an approach had to be explained, and optimised code was expected.

In both rounds, I solved all coding questions with an optimized solution. I also gave detailed

narratives for the behavioral questions. It's best to prepare an answer for standard behavioral questions to save time and create a better impression. Some of the candidates who finished round 2, went on to round 3. But, that was not a decider/qualifier round.

I was offered a 6-month internship at the end of the hiring process.

I practiced coding using the practice questions available in GeeksforGeeks. This was the best resource for me to improve my coding skills. I also prepared CS fundamentals from the various articles available in GeeksforGeeks. Thank you so much GeeksforGeeks.

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Amazon Internship Interview Experience (On-Campus)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n29 Jul, 2021

Amazon visited our college to pick SDE-Interns for 6 months duration. There were 3 rounds totally which are described below,

First Round (Online Test): This round is an online test which consisted of 4 sections namely Coding MCQ, Problem Solving using data structures, Behaviour questions, Logical Reasoning.

1. **Coding MCQ** is really easy if you have knowledge in control statements, logic change in a part of code (Eg. To find sum of digits). \xc2\x0
2. **Problem Solving using data structures** consists of 2 coding questions to be solved in 90 minutes, both problems were of medium difficulty mainly based on binary search, linked list, trees, graphs. Try to cover all the test cases and pass them. Have an eye on the time to complete both problems in 90 minutes. \xc2\x0
3. **Behaviour questions** consists of around 30 behaviour questions with 4 options, you have to pick the appropriate decision you would pick for the given situation. *For Example, If you feel stuck at your work what would you do? a. Reach out to a team member immediately b. Reach out to a team member after trying myself for some time.* Try to answer responsibly for every question.
4. **Logical Reasoning** consists of some aptitude questions. You get enough time to work out and answer the questions.

Don't get nervous at any section, try to utilise each and every minute!!

Second Round (Technical Interview 1 \xe2\x80\x93 60 mins): In this round, I was asked 2 Data Structure questions (N-ary tree and binary heap). I couldn't remember the questions but both the questions were of medium difficulty you can search for them in GeeksforGeeks. \xc2\x0

- The interviewer will definitely help wherever you get stuck. \xc2\x0
- Remember to clarify relevant doubts before you approach a problem. \xc2\x0
- Share your thought process continuously on how are you going to approach the problem. \xc2\x0
- Keep your explanation precise and try to optimise the approach by calculating time and space complexities. \xc2\x0
- If interviewer does not get satisfied, try to think alternative approaches. \xc2\x0
- Whichever solution impresses the interviewer, implement that solution and try to cover all possible test cases by doing a dry run for the test cases. No theory questions were asked in this round. \xc2\x0

Third Round (Technical Interview 2 \xe2\x80\x93 60 mins): In this round, there were questions from my interests that I have put in my resume(Eg. Explain ACID properties in DBMS). \xc2\x0

- Also, I explained the projects that I have put in my resume and I gave an overview of what I did in the project, what I learned throughout the project development. \xc2\x0
- Then they asked 2 data structure questions (binary search and tree). I got stuck at some places, but the interviewer was so friendly to set me up in the right direction. \xc2\x0
- Discuss with the interviewer at regular intervals. The rest of this interview is similar to Technical Interview 1.

- I couldn't point out the problems that were asked in my interviews because it was completely new and unable to find them in any coding portal. You can look other Amazon interview experiences in GeeksforGeeks to get an idea for the level of problems asked in Amazon. You will find a similar pattern of problems and prepare for them as well.

Tips to crack the above rounds :

First Round: Candidates will be filtered heavily in this round.

- So, utilize the time properly.
- Try to cover most of the test cases in coding questions by optimizing the solution.
- Answer responsibly for the behavior questions.

Second and Third Rounds: In the interviews, only if you can able to solve both the coding questions you will be considered.

- Try to give multiple approaches to a problem.
- Know to calculate time and space complexities for the solution especially for the recursive solutions.
- Implement your solution in your preferred language and cover all the possible test cases. Optimization is must!
- Try to give as many data points by discussing with the interviewer. Try to finish of each problem before 30 minutes (Telling approach, Optimising approach, Implementing approach). Finally, show your interest in the company by asking relevant questions at last.

I was able to get selected for the 6-months internship. Hope my experience helps you too!!

My Personal Notes

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n20 Aug, 2021

Got an offer from Amazon! Here is my experience.

I do not have a degree in CS and learned on my own (no Bootcamp). You can achieve anything you want to if you work really hard. I had several portfolio projects on my resume and was contacted by a recruiter.

Technical screen (online):

- Find the two smallest numbers in an array
<https://practice.geeksforgeeks.org/problems/find-the-smallest-and-second-smallest-element-in-an-array3226/1>
- Given a max distance, find the two numbers that added together are closest to the max distance

I must have done well because I skipped the phone screen and went on to the final interview round. I had an option of scheduling two weeks later and 5 weeks later. I didn't know data structures/algorithms prior to this and chose the slot 5 weeks later so I could have time to learn them.

Final interview questions:

- <https://practice.geeksforgeeks.org/problems/longest-common-prefix-in-an-array5129/1>
- Maze traversal
- System design: What kind of classes and object-oriented design would you create to take in CSV, tsv, and JSON objects, parse them, and enter them into a database? (This was a very hard question for me, but I didn't researched system design a ton because I knew it wasn't a deal-breaker for an SDE-1).
- Behavioral: they will grill you about your projects. Research the LPs and come up with a list of ~10-12 situations that fit them. Rehearse them. Look up common amazon LP questions and make sure you can answer them. They will grill you about your projects too. What would you have done differently? Be prepared to dive deep into them.

I did well on most questions (I was able to answer them) and struggled on the last one.

Advice (especially helpful for self-taught programmers who don't know DS/Algo well):

- I studied ~9 hours every single day. Make sure you know all the data structures on the cheat sheet they send you. Start watching youtube videos, and when you see related topics, write those down. Have a running list of all the topics you need to know. Have a running list of all of your questions. Make sure you go through them ALL.
- Do several Leetcode problems a day. Spend 45 min trying to solve it before you look up the solution. Make sure you actually understand the solution even if takes a few days. Ask your friends to help you. Come back to those questions a week later and see if you can solve them.
- Figure out the biggest priority topics by looking at recent interview experiences on GeekforGeeks/elsewhere. I saw that trie questions had been recently asked and knew this was a priority. I also knew it was hard for me to solve maze problems, and that they do get asked, so that was a priority too.
- Take notes on EVERYTHING. Go through your notes and write a review. What are a few bullet

points of how you solve each problem? That way when it comes time to interview, you can remember \xe2\x80\x9cl create a recursive function for this that takes in __\xe2\x80\x9d.

- Do NOT get discouraged. I thought for sure I wouldn\x9t get it because I couldn\x9t get any of the problems on the first try, and though they were very hard to learn and understand. The difference is, in the interview, they give you hints along the way. So if you get stuck, you\x9ll be able to keep moving forward. You can do this!!!
- Don\x9t be defensive in the interview. Check your ego. Let them give you suggestions and *take* them. It\x99s a dialogue with your interviewer.
- Try to learn as much as possible while being able to retain that knowledge. Take care of yourself, but push yourself up to that limit, and know that your interview experience can dictate your salary too.
- You. Can. Do. This. It will be so frustrating at times along the path but that\x99s no indicator of the final result. Good luck!!!

My Personal Notes\narrow_drop_up

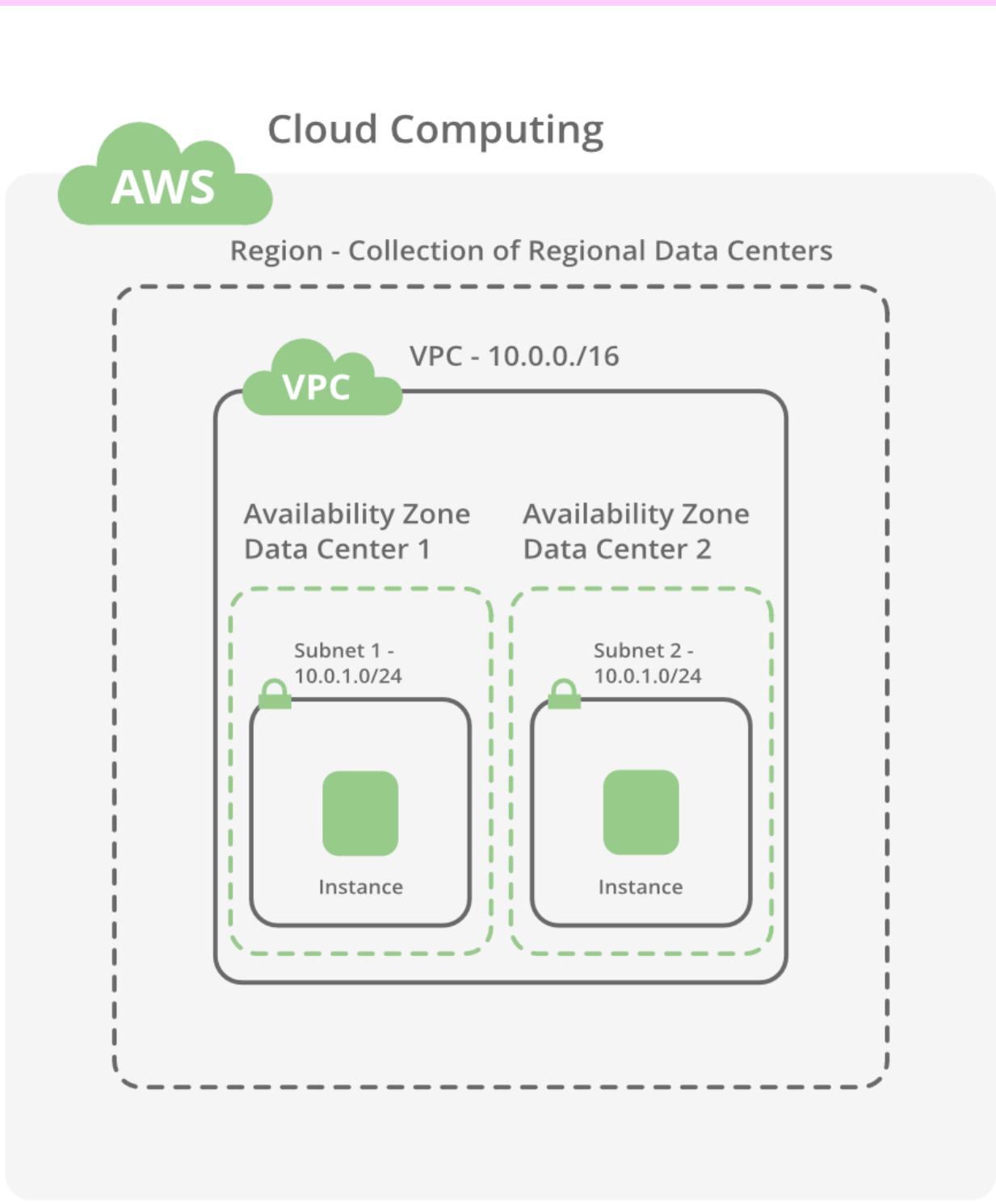
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Amazon VPC |x80|x93 Security in Amazon Virtual Private Cloud

- Difficulty Level :[Medium](#)
- Last Updated :[28 Jul, 2021](#)

This article revolves around all the security services available under Amazon [VPC](#). Along with the basic security infrastructure of AWS cloud, VPC also comes with several advanced security services embedded in it. All these services are incorporated with VPC to ensure the maximum attainable security on AWS premise. Let us have a deeper vision of **Security in the Amazon Virtual Private Cloud.**



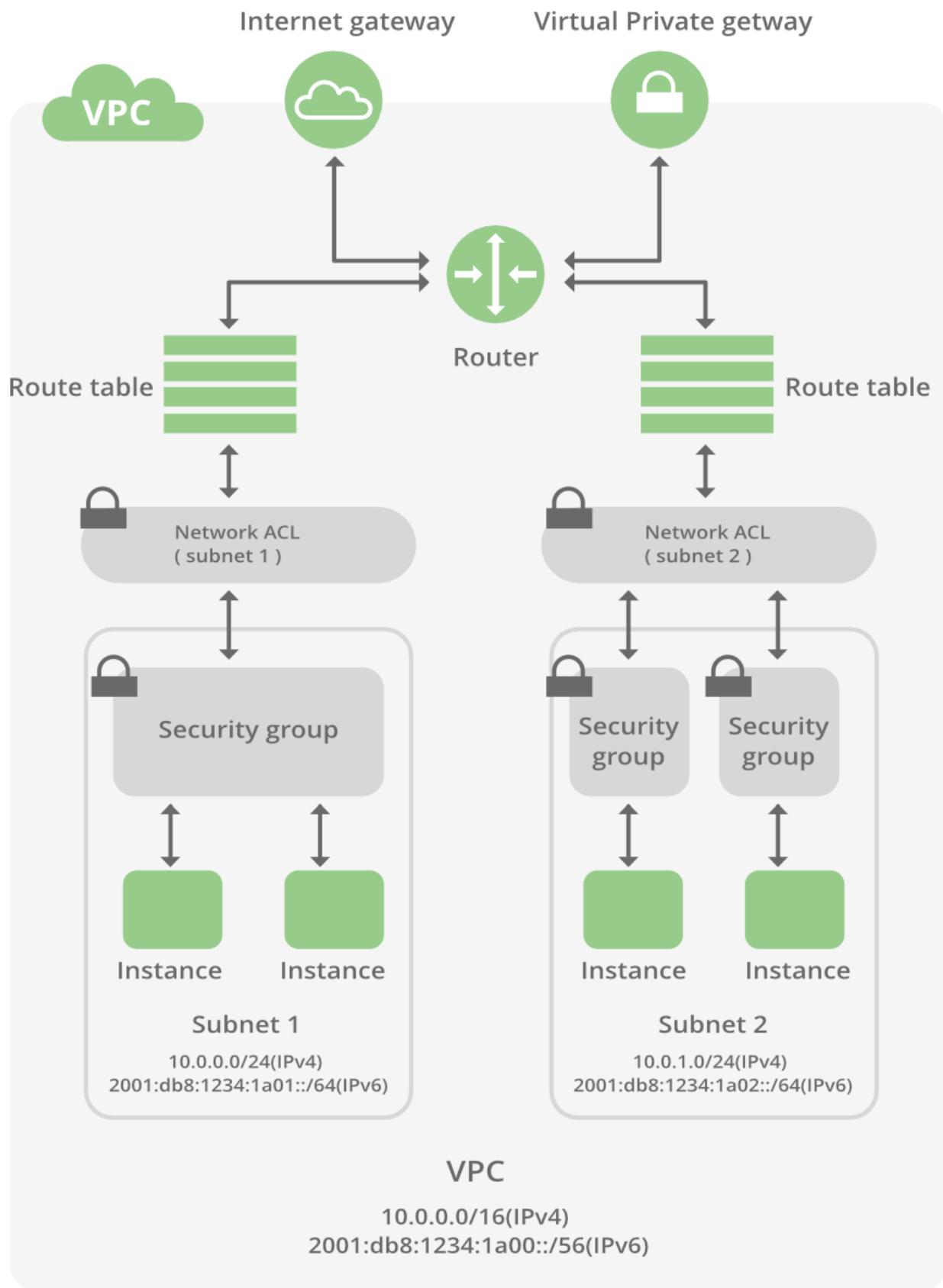
Observe the attached image and refer to the points written ahead.

Multiple levels of security:

It is clearly stated in the given diagram that, a VPC secures its components on various different levels. This increases the overall security of the [VPC](#). For instance, refer to the attached image and understand the pointers.

- A private IP address has been temporarily dedicated to the VPC (**1st level of security**) no other organization or individual can access this particular range of IP addresses unless it has been reallocated to them.
- Each subnet (**in case of private subnets**) lying inside the VPC has its own unique IP address in between VPC\xe2\x80\x99s IP address range allotted to it by the user. (**2nd level of security**) Thus, none of the subnets can be accessed by any other unauthorized user in the word. Only the public subnets are accessible to the audience.
- The launched EC2 instances and S3 buckets inside these subnets come with their default security constraints as well. (**3rd level of security**)

These were the various security levels inside the VPC.



To increase the total reliability of the VPC, **security groups** are created.

Security Groups are nothing but virtual firewalls designed for protecting all the EC2 instances residing under different subnets. We can assign one or more security groups to an instance launched in the VPC depending upon the user\xe2\x80\x99s requirement. Even if you forget to assign a security group to the instance you have launched, Amazon VPC itself associates the new instance with the default security group.

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Amazon VPC |x80|x93 Launching an EC2 Instance into a VPC

- Difficulty Level :[Medium](#)
- Last Updated :[28 Jul, 2021](#)

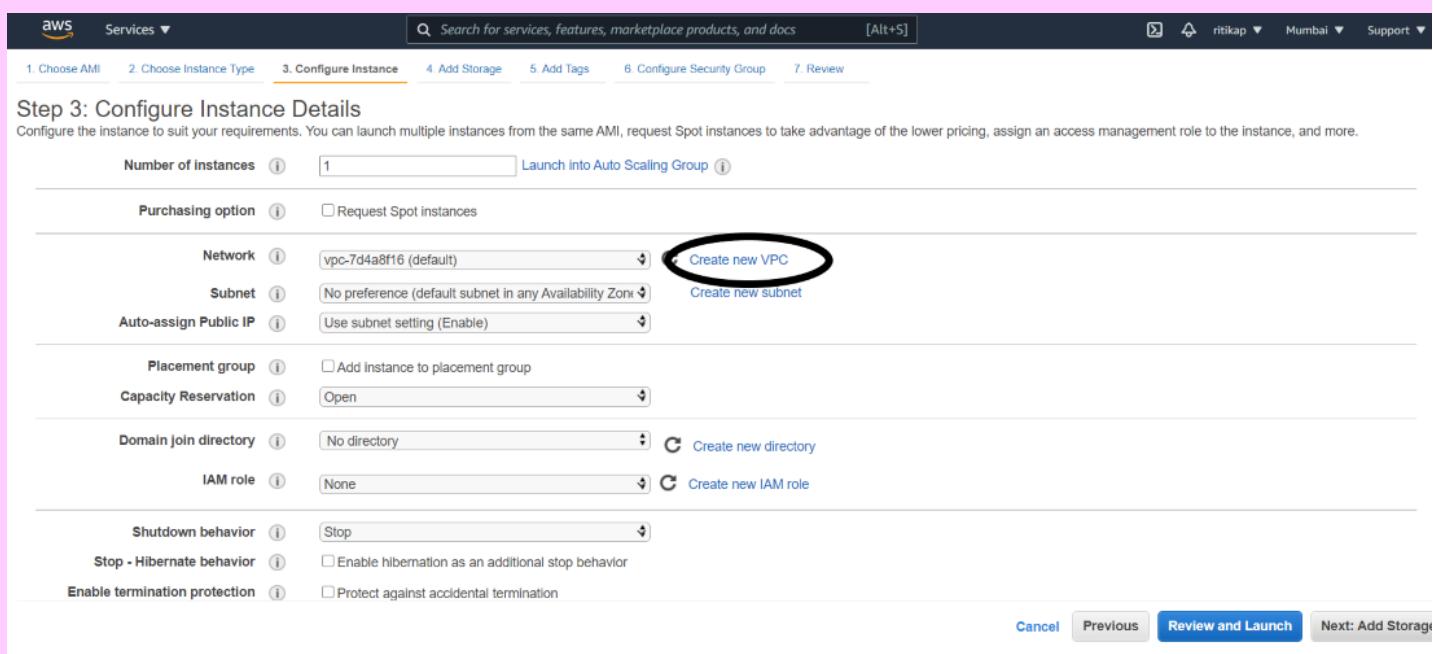
This article will cover all the aspects of **Launching an EC2 Instance into a VPC**. As we are already aware of the basic process of launching an EC2 instance on AWS, launching it into VPC is almost the same. Every EC2 instance launched on AWS is by default launched inside the default VPC of that particular user. To know more about the basic protocol for launching an [EC2](#) follow the linked article.[xc2|xa0](#)

We know the process of launching an EC2 instance via the management console.[xc2|xa0](#)

Now, let us look at the process of launching an EC2 instance into another VPC rather than launching it in the default one.

Start by the same process of creating a new EC2 instance, and if there is any confusion while doing that refer to [this](#) article.

Follow the steps until **STEP 3 |xe2|x80|x9cConfigure Instance Details|xe2|x80|x9d** occurs. Before proceeding to the next step either select [|xe2|x80|x9cCreate a new VPC|xe2|x80|x9d](#) or from the list of existing VPCs, select the VPC for your new EC2 instance. Please refer to the image attached ahead for a better understanding of the concepts.

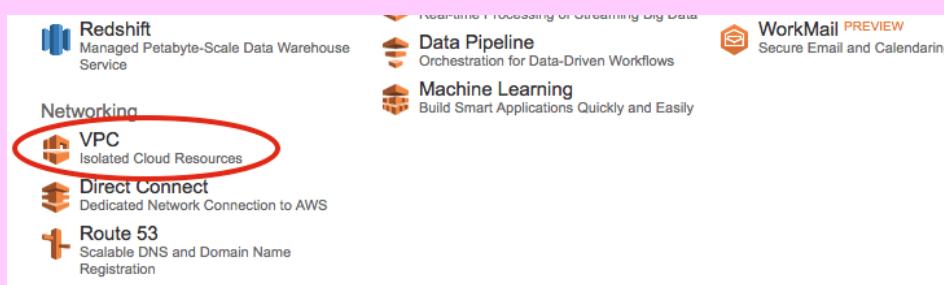


Once you are redirected to the next window. Simply change all other configurations as per your requirement and launch the EC2 instance.

And if you choose [|xe2|x80|x9cCreate a new VPC|xe2|x80|x9d](#), after getting redirected. Create a new [VPC](#) with all your desired configurations. And follow a similar process while launching the EC2 instance.[xc2|xa0](#)

The process of **creating a VPC** is discussed ahead.

Step1: From the AWS management console, select **VPC**. Refer to the attached screenshot.



Step 2: After getting directed, click on [|xe2|x80|x9cStart VPC|xe2|x80|x9d](#). Like this

The screenshot shows the AWS VPC Dashboard. At the top, there's a navigation bar with 'AWS', 'Services', and 'Edit' dropdowns. Below it, the 'Resources' section has a 'Start VPC Wizard' button, which is circled in red. Other buttons include 'Launch EC2 Instances' and a note about launching instances in the US West (N. California) region.

Step 3: Now, you will be given multiple options to choose from in the navigation pane. From them select the **VPC with a single subnet** option to go with. And finally, click **Select**.

Step 1: Select a VPC Configuration

This screenshot shows the 'Step 1: Select a VPC Configuration' screen. On the left, there are four options: 'VPC with a Single Public Subnet' (highlighted with a red circle), 'VPC with Public and Private Subnets', 'VPC with Public and Private Subnets and Hardware VPN Access', and 'VPC with a Private Subnet Only and Hardware VPN Access'. To the right, there's a description of what each type of VPC offers, followed by a 'Creates:' section and a 'Select' button. A red arrow points from the 'Select' button to the configuration fields in the next step.

Step 4: After this, complete the final step. From the next window, cross-check all the details of the subnet and give a **name** to your VPC. And finally, click on **create VPC**.

This screenshot shows the 'Step 2: VPC with a Single Public Subnet' configuration screen. It includes fields for 'IP CIDR block*', 'VPC name', 'Public subnet*', 'Availability Zone*', and 'Subnet name'. A note at the bottom says 'You can add more subnets after AWS creates the VPC.' Below this, there are sections for 'Add endpoints for S3 to your subnets' and 'Enable DNS hostnames*' with radio button options. At the bottom are 'Cancel and Exit', 'Back', and a large 'Create VPC' button. A red arrow points from the 'Create VPC' button to the success message in the next screenshot.

In a while, your new VPC will be successfully created. You can verify it by tapping on **Your VPC** in the VPC dashboard.

This screenshot shows the 'VPC Dashboard' with a 'Your VPCs' link highlighted with a red circle. The main area displays a success message: 'Your VPC has been successfully created. You can launch instances into the subnets of your VPC. For more information, see [Launching an Instance into Your Subnet](#)'. At the bottom right of this message is an 'OK' button.

In this way, you can simply create a VPC and launch instances in it. If you are also a free tier account holder, make sure you delete all the instances before logging out of your AWS account. This will help you in reducing the bill amount.

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n19 Aug, 2021

Hi everyone,

Hope everything is well with you. Today I'm going to share my amazon interview experience for the role of SDE-1. Hope it'll help you in preparing for your next coding interview. So without further ado let's get started.

I applied for the role of SDE-1 through amazon jobs portal. Next I got an invite for Online Assessment (OA).

Online Assessment: There are two parts of online assessment.

First part consisted of couple of questions based on data structures & algorithms

1. First question https://leetcode.com/problems/maximum-units-on-a-truck/
2. Second question https://practice.geeksforgeeks.org/preview-problems/701942

Second part consisted mainly on behavioral aspects.

Round 1: This round was mostly a discussion on previous company project that I worked on, some behavioral questions based on Amazon leadership principles, some technical questions.

Some of the questions that I could recall are as follows :-

- Difference between process & thread?
- What are deadlocks and what are the necessary conditions for deadlocks to happen?
- Some real life applications of thread & process
- Tell me about a time when the requirement was not clear to you? What you did and what was the final outcome?
- Let's discuss about a complex project that you worked on. What was the final outcome and what you learned? There were some follow up questions on web sockets based on my answer.
- Difference between synchronous I/O and asynchronous I/O?
- Some questions based on Node JS non blocking I/O

Round 2: This round was mixture of coding questions and behavioral questions.

1. The behavioral question was: Have you experienced pressure at work? Describe such situation
2. Lowest common ancestor in binary tree and then lowest common ancestor in binary search tree.

<https://practice.geeksforgeeks.org/problem-page.php?pid=700236>

<https://practice.geeksforgeeks.org/problem-page.php?pid=700221>

We discussed on edge cases like

- What if the input node values are not present in the tree
- one of the input node or both are null
- root node is null

3. Shortest unique prefix of all words in an array

<https://practice.geeksforgeeks.org/problem-page.php?pid=706447/>

We discussed on edge cases like:

- If input array is empty
- If any word is empty
- what if there are duplicate words in the input array (the interviewer told that all words are distinct)

Round 3: This round was mixture of coding questions and behavioral questions.

1. The behavioral question was: Tell us about a time when you missed a deadline or productivity target? What was the business impact and what you learned from it?
2. Given an increasing series first and then decreasing find the first element which starts decreasing

Let's say there is an array [0, 10, 20, 30, 40, 10, 5, 1] -> answer is 40 since from 40 it starts decreasing

We discussed on many edge cases like

- series is increasing only
- series is decreasing only
- decreasing series first and then increasing
- series where increasing first then decreasing and then increasing again and then decreasing

Let's say an array [0, 10, 20, 30, 25, 20, 40, 60, 50, 30] -> firstly it increases, then decreases and then same repeats, so answer in this case will be 30

3. Given an array of integers, find maximal product triplet

<https://practice.geeksforgeeks.org/problems/three-great-candidates0515/1>

Let's take an array [1, -4, 3, -6, 7, 0] -> answer will be 168 (-6 x -4 x 7)

We discussed on edge cases like

- If input array contains less than three numbers
- input array containing only negative numbers
- input array containing both positive and negative numbers

Round 4: This round consisted of coding questions, behavioral questions and some technical questions

1. The behavioral question was: Tell us about a time when you had to solve a complex task under strict timeline? What was your approach and how you solved it?
2. Given two strings s and t of lengths m and n respectively, return the minimum window substring of s such that every character in t (including duplicates) is included in the window. If there is no such substring, return the empty string.

<https://leetcode.com/problems/minimum-window-substring/>

Clarified on some questions like

- If length of string s is less than length of string t

- If either string s or t is empty
3. Find a triplet in an array whose sum is closest to a given number.

<https://practice.geeksforgeeks.org/problem-page.php?pid=702023>

Let's take an array say [-1, 2, 1, -4] and sum = 1 -> the triplet will (-1, 2, 1)

We discussed on edge cases like

- What will be the output if triplet is not present
- If there are multiple triplets, then which triplet to print (interviewer confirmed you can return any triplet)
- what will be the output if input contains less than 3 numbers

Technical questions:-

- Difference between child process & thread process
- What are the different transport layer protocols?
- Difference between TCP & UDP
- Real life application of binary search tree

Final Verdict: Selected

So here are few tips to share which are as follows:-

- Recall your previous work experience, your graduation days, achievements. This is required especially to answer behavioral based questions
- While answering behavioral questions use STAR method to answer.
 - S (Situation) (What was the situation)
 - T (Task) (What was the task undertaken)
 - A (Action) (What you did or what was your approach to solve the task)
 - R (Result) (What is the end result)
- Always discuss brute force approach first and then work your way up towards optimal solution
- Discuss time and space complexity of both brute force and optimal solution
- Discuss about the edge cases as well
- Having solid and excellent understanding of data structures will help you a lot in coding interviews
- Please practice 1 coding problem daily. Leetcode and Geeksforgeeks are really great platforms to practice coding problems
- Do not forget to add your achievements as well while in the interview
- Believe in yourself and you're half way there.
- Set short term goals as small step taken today yields to bigger step for tomorrow.

Finally I wish you all the best. Good luck. Thanks and take care.

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Amazon Interview Experience for SDE-1

- Difficulty Level :[Medium](#)
- Last Updated :[20 Aug, 2021](#)

Hi All, Initially, I have found the Amazon SDE job requirement on LinkedIn then I applied on the Amazon job portal for the same. I got an email for round one after two weeks.

Round 1: It was conducted online and needs to implement the coding on the HackerRank platform. There are 3 sections of the assessment.

1. Coding challenge (2 scenarios) and Coding approach (elaborate why you code the way you do) 105 minutes
2. Workstyle survey 15 minutes
3. Feedback survey 5 minutes

Questions asked were:

1. [Given n number of sorted files, the task is to find the minimum computations done to reach the Optimal Merge Pattern.](#)

Sample Input: nn = 6, size = {2, 3, 4, 5, 6, 7}
Sample Output : 68
Approach: This

2. Given a matrix with values 0 (trenches), 1 (flat), and 9 (obstacle) you have to find the minimum distance to reach 9 (obstacle). If not possible then return -1. The demolition robot must start at the top left corner of the matrix, which is always flat and can move on the block up, down, right, left. The demolition robot cannot enter 0 trenches and cannot leave the matrix.

Sample Input : [1, 0, 0], [1, 0, 0], [1, 9, 1]
Sample Output : 3

All test cases passed for both so that I expected for the second round. After 15-20 days I got a mail from HR for an Amazon Chime Interview. There will be 2 rounds on that day only.

Round 2:

- Question 1: [Search a Word in a 2D Grid of characters it can be possible in 8 directions](#)

Here I took more time to solve this problem and approached the brute force approach. The interviewer didn't ask for an efficient approach since I have crossed the time limit.

Round 3:

In this round questions asked all about arrays and string

- Question 1: [Reverse words in a given String](#)
- Question 2: [Print all pairs with given sum](#)
- Question 3: [Count pairs in an array whose sum is divisible by K](#)

Here The Interviewer expects an efficient solution for all the questions but I gave the efficient solution for question 1 alone.

Next week I got a call from HR, badly I am not shortlisted for the upcoming rounds anyway I got an experience. It could suggest everyone should try to work on problems for efficient approach.

All the best!

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Amazon Interview Experience

- Difficulty Level :[Medium](#)
- Last Updated :[01 Sep, 2021](#)

I have applied to Amazon via LinkedIn. Finally, I got a mail stating that I can give my online test on Hacker-rank platform.

Round 1: It is an online round on hacker-rank. Two coding questions were asked. We need to write time complexity and space complexity as well.

1. Optimizing Alexa Suggestions

In this question 1 list is given with x and y coordinates and an integer X is given. We need to find X restaurants near the customer from location (0,0).

Example 1 : \r\nlocation: [[1,2], [3,4], [1,-1]], \r\nX=2 \r\nnO/P: [[1,-1], [1,2]]

2. Device Application Pairs

In this question device capacity, foregroundAppList and backgroundAppList is given. We need to find the foreground and background pair which optimally utilizes the device capacity. List has set of pair where first integer represents id and second integer represents amount of memory required.

Example 1 :\r\ncapacity = 7, \r\nforegroundAppList: [[1,2], [2,4], [3,6]], \r\nbackgroundAppList: [[1,2]] \r\nnO/P: [[2,

After 15-20 days I got call from HR for amazon Chime Interview. There will be 3 rounds on that day only. The rounds were held in next week.

Round 2: It is taken by Manager.\xc2\xab0

- There is discussion on project, leadership principles and Java concepts.
- Incident when you deep dive, etc
- Process and threads
- How google.com works when we type it in URL.
- Multiprocessing, multitasking, multithreading, etc

Round 3: It is taken by SDE-1. Two codes were asked. I was able to solve both.

1. <https://www.geeksforgeeks.org/iterative-letter-combinations-of-a-phone-number/>
2. <https://www.geeksforgeeks.org/minimum-steps-reach-target-knight/>

Round 4: It was taken by SDE-2. Two codes were asked. I was able to solve both.

1. A question similar to: <https://practice.geeksforgeeks.org/problems/kth-largest-element-in-a-stream2220/>
2. <https://www.geeksforgeeks.org/unique-paths-in-a-grid-with-obstacles/>
3. A question based on dp to find ways to move from one cell to another.

After 3 weeks I got reply that I will have bar raiser round after 1 week.

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n18 Jun, 2021

Hi Guys, sharing my Amazon drive experience for SDE 1 role 2021.

Round 1(Online Test): Online test containing 4 parts:

- A. Error correction: A code will be given, and you need to correct the errors so that it gives the desired output.
- B. Coding: 2-3 codes from medium to hard level.
- C. Workstyle assessment: This will contain situational questions.
- D. Reasoning.

Round 2(Interview 1): 2 questions, 1 hour. The interviewer was very cool and comfortable, was SDE1.

Questions asked were:

1. There are cars on the x-axis of different sizes. Cars are represented by an array of integers where the direction is represented by the sign of the integer and the size is represented by the absolute value. If the cars collide, the smaller car gets destroyed. All the cars move with equal velocity. Find the final set of cars that will remain. (Soln: Use stack)
2. Given a binary tree, find the maximum sum of the elements such that no two node elements are taken from consecutive adjacent layers. After I solved this, the question was modified to find the maximum sum such that no two adjacent node elements are taken in the sum.\xc2\xad

Round 3(Interview 2): 2 questions, 1 hour. Interviewer was not a very good one, probably SDE2.

Questions asked were:

1. Given a binary search tree, replace all the node elements with the sum of the elements greater than it.
2. Given a linked list, sorted according to the absolute value of the nodes, sort it by actual values.

Round 3(Interview 3): 1 hours. Interviewer was 6 years of experience in Amazon and SDE 3. He was very friendly.

1. Started with a light discussion about the interviewer, and then about me.\xc2\xad
2. Discussed the projects.\xc2\xad
3. Asked me a situation where I faced technical problems and how I managed them.\xc2\xad
4. Asked me a technical question for implementing a database with key value pairs that can be stored efficiently where the key and value pairs are only valid for a specific time. Modified the version of the question every time to make it more efficient. It includes implementation of hashing, dictionary, garbage collection, and heap.
5. N. B. In all the interviews, you are required to tell the approach first and if the interviewer is satisfied, then only you will be able to write code. All the interviews were on the amazon chime platform for audio-video and shared whitespace for writing code. No language bar.

Tips: All the interviews were based on data structures. You can always ask the interviewer for clarification.

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Amazon Interview Experience for Programmer Analyst 2021

- Last Updated : \n16 Jun, 2021

I appeared for the Amazon Programmer Analyst Hiring process in Pool-Campus 2021 with no previous work or internship experience. There were a total of 5 rounds (1 Online Coding + 4 Technical Interviews). The interviews were virtual due to the pandemic.

Round 1 (Online Coding): \xc2\xab0

This round was conducted on the HackerEarth platform and contained 10 MCQs based on java and 3 coding questions. The difficulty of these questions was medium and I was able to solve 2 of the coding questions completely.

Round 2 (Technical Interview):

All the interview rounds were conducted on amazon chime and live code was used to solve the coding question. \xc2\xab0

- The interviewer started with his introduction and asked me the same.
- We had a short discussion on my projects.
- Then he gave me a code snippet and asked me to debug the code. I was able to fix the code pretty easily.
- Then he gave me this question to solve <https://www.geeksforgeeks.org/even-numbers-even-index-odd-numbers-odd-index/>, I initially gave a naive solution but later was able to give an optimized solution with a hint from the interviewer.
- The next question was similar to <https://www.geeksforgeeks.org/stock-buy-sell/> but I was asked to maximize loss due to lack of time he asked me the approach instead of the entire code.
- Few programming languages based questions were asked.
- A couple of behavioral questions.
- At last, he asked if I had any questions for him, I asked few relevant questions.

Round 3 (Technical Interview):

- The interviewer introduced himself and talked about the work he does then asked me to do the same.
- He was interested in one of my projects and asked few related questions.
- Then he gave me two coding questions to solve
- Similar to <https://www.geeksforgeeks.org/find-expression-duplicate-parenthesis-not/> but I had to remove the duplicate parenthesis from the string.
- and <https://leetcode.com/problems/binary-tree-zigzag-level-order-traversal/>
- I asked a couple of relevant questions at the end.

Round 4 (Technical + Behavioral Interview):

- The interviewer started with his introduction and asked me the same.
- A brief discussion on my projects. He was interested in every minor detail from technologies to algorithms used.
- Behavioral questions like
- What changes did you fight for?
- What is something you are proud of?
- What mistakes did you make?

- How do you see yourself in 5 years?
- and few I can't remember.
- I asked few position-related questions at the end.

Round 5 (Technical + Behavioral Interview):

- This round was similar to the previous, Introduction followed by project discussion.
- Few questions related to basic Computer Science concepts.
- A lot of behavioral questions and also a few follow-up questions to my answers.

All the Interviews lasted 1 hr and the interviewers were very friendly.

Few Tips:

- Read as many interview experiences as possible.
- During the coding round, keep talking to the interviewer regarding your approach, assumptions, time complexity and ask questions to narrow down the problem.
- Write clean production-ready code by considering edge cases.
- When asked about projects try to explain every small detail as possible.
- Go through Amazon's leadership principles most of the behavioral questions are related to those.
- Answer behavioral questions using the STAR (Situation, Task, Action, Result) method.
- Don't panic whenever you get stuck, Interviewers are there to help you.

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Amazon Interview Experience

- Difficulty Level :[Hard](#)
- Last Updated :[01 Jul, 2021](#)

Round 1(Coding Round):

1. Given a binary tree, where every node points to its parent node and the parent of root is null. You have given two nodes to find the distance between them.
2. Given a matrix of m*n find the maximum path sum from any node.

\xc2\xab0

e.g.\n 10 20 30 40\n20 50 60 100\nSo, ans is \n10 + 20 + 50 + 60 +100 = 240\nne.g.\n10 30 50\n0 40 30\n20 70 80\nSo, th

1. Some behavioural questions were asked.

Round 2(Design Round):

1. Design flight booking system.

They are more focusing on LLD in this round.

Some cross-questions were asked like how you are handling concurrency for the same ticket etc?

2. Some behavioral questions were asked.

Round 3(Design Round):

1. Design Tinder :).

They are more focusing on HLD in this round.

2. Some behavioral questions were asked.

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Amazon RDS |x80|x93 Working with Backups

- Last Updated :n01 Jun, 2021

This article aims to make you aware of |x80|x9cWorking with Backups|x80|x9d on Amazon RDS. The prime objective of backups is to create a copy of our data that can be recovered in situations like data failure, data theft, and so on. As we all know, RDS deals with a lot of crucial data and there can be chances of data loss. To avoid such losses [RDS](#) has incorporated several backup strategies in RDS for the clients as per their requirements. Let us discuss all of them.|xc2|xa0

Automated Backups :

As the name suggests, it is the default backup strategy by RDS, from the time period you created the database instance till the time it gets deleted, |x80|x9cAutomated Backups|x80|x9d remain in action. This backup facility allows the user to recover data from any point in time i.e. automated backups keep track of data every second and the users can track back it whenever they need it. The backup retention period is specified by the user during creating the instance, they can alter it whenever they want to, by default it is one day. Automated backups are applied to those instances only which are in the |x80|x9cAvailable|x80|x9d state, other states like |x80|x9cStopped|x80|x9d, |x80|x9cStorage Full|x80|x9d do not support automated backups. And when the instances which already have an automated backup running are copied in the same region then automated backups do not apply to these copied instances as this will only increase the bill amount.|xc2|xa0

You can check whether the automated backup is enabled or not, if enabled then what is the retention period. Just select the instance and click on it. And under |x80|x9cAvailability & Durability|x80|x9d you will find the details. Here is the image attached to refer to.

The screenshot shows the 'Instance and IOPS' and 'Encryption Details' sections at the top. Below them is the 'Availability and Durability' section, which includes 'DB Instance Status' (available), 'Multi AZ' (Yes), and the 'Automated Backups' field, which is highlighted with a red box and shows 'Enabled (7 Days)'. Further down are 'Maintenance Details' with fields for 'Auto Minor Version Upgrade' (Yes), 'Maintenance Window' (sat:09:15-sat:09:45), 'Backup Window' (07:34-08:04), and 'Pending Maintenance' (None). A small '(b)' is located to the left of the screenshot.

Now, let us look at the steps involved in |x80|x9cEnabling|x80|x9d automated backups for any desired DB instance.

After logging into your account go to the RDS management console. From the navigation pane, select |x80|x9cDatabases|x80|x9d and then choose the database you want to enable automated backups for. And click on |x80|x9cModify|x80|x9d. Here is the image to refer to for any confusion.

The screenshot shows the 'Amazon RDS' navigation pane with 'Databases' selected. The main area is titled 'Databases' and shows a table with a single row for 'database-1'. The table includes columns for 'DB identifier', 'Instance', and 'Engine'. At the top right of the main area are buttons for 'Group resources', 'Modify' (which is circled in red), and 'Delete'. The 'Modify' button is intended to be clicked to change the backup retention period.

After a while |x80|x9cModify DB Instance|x80|x9d page appears, for the backup retention period select a value

other than zero (0). Choose to continue and select **Apply Immediately**. The image is attached ahead for reference.

Modify DB Instance: tporainst

Instance specifications

Backup

Backup retention period
The number of days for which automated backups are retained. Setting this parameter to a positive number enables backups. Setting this parameter to 0 disables automated backups.

7 days

Backup window
The daily time range (in UTC) during which automated backups are created if automated backups are enabled.

Start Time: 20 : 06 UTC Duration: 0.5 hours

Copy tags to snapshots

Yes
 No

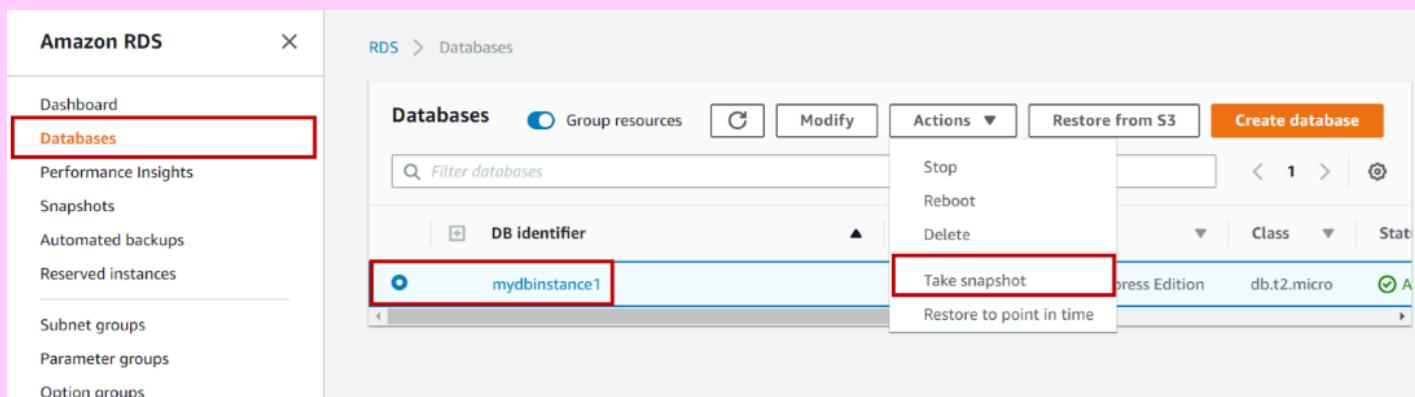
Let us look at another backup strategy in Amazon RDS.

Snapshots:

Snapshots are another backing-up privilege by Amazon RDS for their users. Snapshots are **non-editable** backups of entire database instances, not individual databases. It is not automatic, but the final snapshot is created automatically without the user's permission while deleting that instance. A snapshot does not come with a retention period, and they never expire. Snapshots are an efficient method for storing backups within the same region or a different region. We can export the snapshot's data to **Amazon S3** for storing. Snapshots come with multiple sub-services like [creating](#), [deleting](#), [exporting](#), and so on. For knowing about all these services follow these articles.

For creating a DB Snapshot follow this process.

After logging into your account go to the RDS management console. From the navigation pane select **Databases** and then choose the database you want to take snapshot for. And click on **Actions** from the listed options choose **Take Snapshot**. Please refer to the image attached ahead.



In a while, you will see the **Take DB Snapshot** window. Fill in the name you wish to give to the snapshot and then finally click on **Take Snapshot**. The image is attached ahead for better understanding.



Services ▾

Search for services, features, marketplace products, and docs

[Alt+S]



RDS > Databases > Take snapshot

Take DB snapshot

This feature is currently supported for InnoDB storage engine only. If you are using MyISAM, refer to details [here](#).

Settings

To take a snapshot of this DB instance you must provide a name for the snapshot.

DB instance

The unique key that identifies a DB instance. This parameter isn't case-sensitive.

database-1

Snapshot name

The identifier for the DB snapshot.

[Cancel](#)[Take snapshot](#)

In this way, we can easily take a snapshot of any DB instance in RDS. Both the backup strategies are distinctive to each other in terms of their architecture. And if you also use a free tier account then make sure you delete all the services and instances before logging out of your AWS account.

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Amazon Interview Experience for SDE-I (On-Campus)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n20 Aug, 2021

March-April, 2021

I appeared for Amazon SDE-I FTE(Full Time Equivalent) hiring process through my college campus, in March 2021. First, there was an Online Coding Round and it was followed by three rounds of virtual interview process.

Online Coding Round: From the Online Coding Round, about 40 candidates were shortlisted for the interview process which was held in the next week.\xc2\xao

- In the online coding round, two questions (different questions to different candidates) were asked, one a bit tricky and the other one easier. I actually ended up doing neither with complete success (:3).
- In my first question, I remember I passed about 8 out of the 13 total test cases and passed only 2 out of the 9 in the other one. I thought I had no chances for qualifying through but when the shortlist was published, I ended up being quite high up in the list. I was surprised but later what I learned was, the developers who make those questions, actually go through your code thoroughly and find out whether you used the correct logic (or at least close to it) or not.
- If your logic seems fine, and you miss a few edge cases and end up not passing every test case, you\xe2\x80\x99ll still have decent chances of going through (like me!). So, do focus on your logic as well!

Interview Round 1:\xc2\xao

- Coming to the first round of the interview process, I was asked to brief myself and how I developed my interest for such a software role.
- Then the interviewer moved on to a few coding questions after providing me with a live coding link where I had to write my code (just the required functions/classes/structures not the whole code from top to bottom).
- He asked me to find an element in a rotated array that was otherwise sorted(<https://practice.geeksforgeeks.org/problems/search-in-a-rotated-array4618/1>). I told him I can provide him with a binary search solution which will take O(log n) time.
- Learning that I already know the approach, he moved on and asked me to write a function to find the Lowest Common Ancestor in a Binary Tree(<https://practice.geeksforgeeks.org/problem-page.php?pid=700221>). I wrote the code successfully and ran a few manual test cases on it. After that, he modified the LCA question a bit and asked my approach. I shared what I thought but it was not 100% correct so he told me the correct approach to that.
- Then he asked me another question: <https://practice.geeksforgeeks.org/problems/maximum-gap3845/1>
- He asked me to solve it in O(n) time complexity and after thinking for sometime, I told him what approach I thought of. I didn\xe2\x80\x99t know Pigeonhole Sorting technique, and tried to solve it using stacks but couldn\xe2\x80\x99t arrive at a proper solution in that limited time. But the interviewer was happy with my approach and told me \xe2\x80\x9cQuite close\xe2\x80\x9d.
- Within a couple of hours, I received a call and got notified that my second round of interviews was scheduled in an hour.

Interview Round 2:

- After briefing myself just like the previous round, the interviewer asked me about my Machine

Learning Project and then moved on to a coding question.

- He asked me about the Circular Tour problem (<https://practice.geeksforgeeks.org/problems/circular-tour/1>) which was actually new to me because I didn't solve it before. When the interviewer asked me what extra data structure I would like to use, he was quite surprised when I told him that I wouldn't need any of it (not even a queue since its solution is quite popular, as I have learned after my interview). I solved it in O(n) time complexity and O(1) space complexity and took about 15-20 minutes to think of the approach.
- We later went on to check a few test cases manually and inside my code, I found out a couple of mistakes and corrected them. In the end, he was actually quite happy with my approach, and we had a little discussion about the Big O, theta, Omega notations before the interview ended.
- After the second round, I was quite confident that I shall get shortlisted for the third round which was indeed true after I received the mail which said the final and third round was scheduled for the next morning.
- Now some tension started creeping in my mind as I could actually see the finishing line inside my head. I didn't sleep well at all and was ready for the interview quite early in the morning.

Interview Round 3:

- After talking about my past, the interviewer thoroughly asked me about my project and the concepts I used in it.
- He actually worked on those concepts beforehand, so he asked me every detail of it and I actually enjoyed having that conversation because for the first time one was truly interested in what I did (:3).
- Then he asked me a few behavioral questions based on their leadership principles (very important!).
- Next, he asked me to implement any cache and write the get() and set() function. I had no idea of cache as it wasn't in my curriculum since am from an Electrical Engineering background. But I had a little idea about how LRU cache works and tried to implement it using an array list and a hashmap.
- Those of you who have already solved this question can realize that I couldn't arrive at an optimal solution, actually, I was far from it :(. But I tried and tried and implemented every bit of idea which clicked inside my head within that stipulated time of 1 hour. In the end, he told me that he will look at my approach offline and wished me good luck.
- I was actually very disappointed that I wasn't able to solve the cache problem which quite a few of my friends knew already. It's actually difficult if one doesn't have any idea how it works, so I didn't blame myself for it, rather was quite happy about how everything went. But within a week, I was ecstatic to find out that I was selected and my name along with 7 other students from my university! Surely they did like my thought process and attitude in the last round because otherwise, my working solution was nowhere near the optimal one. The feeling was unreal and can be never replaced by anything else \xf0\x9f\x99\x82

Few important tips:

1. Work on your logic and focus more on how you approach a problem and less on the result.
2. Go through the leadership principles of Amazon thoroughly and pay great importance to any kind of behavioral questions that might come your way. Also, give importance to the STAR format of solving a given situation since Amazon stresses extremely on these things.
3. Whenever you write a code, always try to deduce the Time and Space Complexity of your code because it is extremely vital for qualifying the rounds of any coding interview process.
4. Don't get tensed at all before your interviews unnecessarily because trust me Amazon interviews are interactive, not interrogative. So it's actually a discussion you have with your interviewer to try and reach a solution to a given situation. Be careful about

the time at hand because Amazon interviews are strictly about 45-60 minutes.

Lastly, if I can get into Amazon, trust me ANYONE can. Without inflating myself at all, I will say that I was extremely focused and dedicated to what I want to achieve and worked smartly towards it. Enjoy the feeling of your code running successfully and work on what's at hand today by keeping an eye on the bigger goal. Always take a break when necessary and make sure the whole process doesn't stress you out. I am sure you'll all do great! Best of luck!

This interview experience is contributed by Supratik Mitra.

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Amazon Interview Experience

- Difficulty Level :[Hard](#)
- Last Updated :In 20 Aug, 2021

Round 1(Coding on Hacker Rank platform):

- Given an array of Strings, Each string has an id and version associated with it. string with alphabetic versions are the older versions and the string with numerical versions are the new version. We need to line up the strings for renovation such that older version strings (strings with alphabetic version) need to be put first in lexicographical order. If any clashes in arrange, then arrange them as per the lexicographical order of the id. The renovated strings need to be kept as in the input order.

Example: \r\nInput:{a a , c b , b b , a 1, b 2}\r\nOutput:{a a , b b , c b, a 1, b 2}

Expected time complexity O(N* log(N)). I was able to solve it with Heap (priority queue in c++).

- Given a 2 D array with each cell having values 1, 0, 9 where 1-> land , 0-> sea , 9->obstacle, we can only traverse in land (1).

Need to find the Minimum number of steps required to reach the obstacle (9).we are allowed to traverse only to right, left, down and up.

Expected Time Complexity: O(M * N) . I was able to solve it with BFS (Breadth-First Search)

Round 2(Amazon chime paired Coding F2F):

- Given a list of contacts containing name and phone number , we need to group the contacts which either have the same name or same phone number together.

Example:\r\nInput :{{abc ,9987},{xyz,9986},{dfg,9987}}\r\nOutput :{{{{abc ,9987},{dfg ,9987}}},{{xyz,9986}}}

Union Find Algorithm or Depth First search Algorithm was applicable

- Given a Sorted array, such that each number repeats exactly twice except one number, we need to find that number

<https://practice.geeksforgeeks.org/problems/find-the-element-that-appears-once-in-sorted-array0624/1#>

Example:\r\nInput:{1,1,2,2,3,4,4,5,5} \r\nOutput: 3

Expected Time Complexity :O(log(N)) Binary search was applicable

- Difference between thread and Process

- DNS Server mechanism

Round 3(Amazon chime paired Coding F2F):

- Given the Process ids in array and the parent of these Process ids in separate array, and the process id we need to kill. Find the List of the process which would get killed on killing the given process.

Example:

pid{1,2,3,4,5,6,7,8,9} \r\nparentpid{2,0,2,3,3,3,4,5} \r\nKilling Process: 3\r\nOutput :{4,5,6,7,8,9}

Create a Directed Graph between the parent and Child process and perform BFS (Breadth First search)

- Given a Linked Link, Alter the Linked list as the below

Input:11->12->.. ln-2->ln-1->ln\r\nOutput: 11->ln->13->ln-2...

Separate out the Linked List by alternate nodes, we get two linked lists, reverse the second list and then join them.

<https://practice.geeksforgeeks.org/problems/reorder-list/1>

- Discussion on LRU Cache Implementation. (Double Linked List and HashMap)

- Amazon Leadership Principles Questions. <https://www.amazon.jobs/en/principles>

Round 4(Bar Raiser Round F2F-Amazon chime):

- Few Questions on Amazon leadership principles

- Given a string that represents covid patients we need to isolate(remove) each character in string in lexicographical order

Cost of each isolation is equal to the index value of the character

Example 1: \r\nInput : aacb \r\nOutput : 1+1+2+1=5

Use Double linked list for altering and the hashmap for character frequency.

Round 5(Hiring Manager-Amzon Chime):

- Few Questions on Amazon leadership principles

- Given an array of Integers find the pair whose sum is farthest from zero.

- some variations on the above question

Finally, After 5 Rounds I got a Mail from HR stating my Selection.

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Amazon Internship Interview Experience

- Difficulty Level : \nHard
- Last Updated : \n20 Aug, 2021

I applied to Amazon for an SDE internship role -Berlin and received a test invitation(although I was later moved to Edinburgh, UK). The process included two sections, the test, and the interviews. There were three-phased coding tests and two personal interviews.\xc2\x90

Coding Tests

Part I:\xc2\x90

- This was a simple debugging round.
- It basically checks your command over general programming.\xc2\x90
- If you are quick and clear on your concepts, this won\xe2\x80\x99t be a hard nut to crack.\xc2\x90

Part II:\xc2\x90

- This one is a coding test, with medium to hard level coding questions.\xc2\x90
- There were two questions to be solved in 45 minutes.\xc2\x90
- One was to find the largest square in a grid, similar to <https://practice.geeksforgeeks.org/problems/largest-square-formed-in-a-matrix0806/1>
- In the second question, a log of strings was given and it was required to append strings with their frequency. For example, if the word orange appears twice, the first time would remain as such but the second one has to be made \xe2\x80\x9corange(2)\xe2\x80\x9d. A simple hashmap-based approach would suffice for this solution, but there are other approaches you can come up with.\xc2\x90
- My suggestion for this round would be to practice as many questions as you can, available on **GeeksforGeeks** and **Leetcode**.

Part III:\xc2\x90

- This was an Amazon SDE simulation.
- \xc2\x90It basically is a simulation of how you actually work under pressure and as a developer, in general, and checks your technical capability and decision-making skills as an SDE intern.\xc2\x90
- If you\xe2\x80\x99ve met the criteria of selection after this phase, you\xe2\x80\x99ll receive an invitation for the interview. However, it could take a while. (I received mine after about two weeks \xf0\x9f\x98\x89)

Interviews\xc2\x90

There were two personal interviews with technical as well as behavioral parts, both having a good amount of importance. Both interviews are about 45-60 minutes, with one coding question each.\xc2\x90

1. Given a maze with paths and walls, represented by strings, print whether or not there is a path from the topmost line to the bottommost line(row). This problem can be solved using a BFS approach, similar to [This GFG article](#). \xc2\x90
2. Given customer logs and page transition logs as a list of class objects, identify the most common/frequent page transitions. This was a complex question to look at but could be solved

using hashmaps if considered carefully.\xc2\x80

Behavioral:

- For the behavioral part of the interviews, I would suggest taking the proper time to understand each of the 14 Leadership Principles of Amazon.
- \xc2\x80Quickly catch up on your previous projects so you don\xe2\x80\x99t get stuck if the interviewer asks about any.\xc2\x80

Apart from that, some of the questions you could prepare for are

- Tell me about a time you helped someone.
- Tell me about a time you faced a group conflict.
- When was the time you faced a failure and what did you do to overcome it?

Lastly, \xe2\x80\x9d say no matter what the outcome is, you should give yourself a little treat for working so hard:)

***Every challenge has only two things in its satchel \xe2\x80\x93 success or a lesson.
Not everyone grabs the second, but those who do- WIN!***

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Amazon Interview Experience 2021 | 3+ Years Experienced

- Difficulty Level :\n[Expert](#)
- Last Updated :\n20 Aug, 2021

The first step was to get the profile short-listed. Referrals can be a better way to apply for a profile.

Round 1(Coding Round): The first round comprised of 2 coding questions on the hackerrank platform

1. Algorithm Swap. The question was a variation of <https://practice.geeksforgeeks.org/problems/minimum-swaps/1>
2. Robot Move. The second was a variation of <https://practice.geeksforgeeks.org/problems/does-robot-moves-circular0414/1>

We also have to write the approach used for both these coding questions.

The coding round was cleared, and I got an email for further rounds which were on Amazon Chime.

Round 2(Technical Interview): There was a brief discussion on the projects and technical challenges faced till now and two coding questions were asked for which I had to provide the working code. It can be in any language but I used Java for it.

1. h<https://practice.geeksforgeeks.org/problems/level-order-traversal-in-spiral-form/1>
2. <https://practice.geeksforgeeks.org/problems/find-median-in-a-stream-1587115620/1>

Along with them, Amazon leaderships related questions were asked while solving the problems.

Round 3(System Design Round):

1. The problem statement was to give an HLD for \xe2\x80\x9cVoting Management System\xe2\x80\x9c. Along with it, LLD was taken up for some of the modules present in the design, handling race conditions, etc. Leadership questions were present in all the rounds.

Round 4(Technical Interview):

1. Was asked to write an extensible cache management library, something like Redis. Few modules were written completely like LRU.
2. The library should be extensible was the main requirement to be met.

Round 5(System Design Round):

1. Design an **Instagram** was the problem statement we tried solving in this round. Some queries/scales/db/API was taken up in detail.

After few days, Received a call from HR confirming the selection.

Hope it helps!!

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Amazon Interview Experience for SDE-1

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 20 Aug, 2021

Round 1(Online): \xc2\xd0

The online round comprised of two DS and Algo-based problem where two things are required for each problem.

1. Executable, Bug-free, and clean code (As the code will be tested on public and private testcases).
2. Explanation of your solution and the complexity of the solution.

Duration: 2 hours

- Both the problems were leetcode medium level (BFS/DFS in 2d matrix and sorting based problems).
- Suggestion:- STL functions are used extensively for those problems and traversing algorithm is also a must. Try writing clean and well-documented code.

Round 2(F2F Technical Interview Round-1)

1. First, the interviewer discussed previous work experience and college projects. Also asked some counter questions on it.
2. Questions on leadership principles.
3. DS-Algo medium level question: <https://practice.geeksforgeeks.org/problems/boundary-traversal-of-binary-tree/1>
4. DS-Algo medium level question: <https://practice.geeksforgeeks.org/problems/reorder-list/1>

Suggestion:- \xc2\xd0

- Don't directly jump to code, first explain brute force approach and after discussing how you can optimize it, you can start coding.

Round 3(F2F Managerial Round): This round is taken by software development manager at amazon. \xc2\xd0

1. As usual, interview started with my previous work experience and projects I worked on previously. Around 20 minutes discussed previous work and project. Some counter questions like why you implemented x thing in your project, what are some tradeoffs were asked.
2. Another 15/20 minutes revolved around answering questions on leadership principles. (Prepare for these questions before hand so that you don't take much time in thinking about the story which you want to plot).
3. For rest of the interview questions revolved around CS fundamentals based questions. (Mostly about multithreading, deadlocks, OOP concepts, shared memory etc). Also some questions are asked where code snippet is given and output is asked (code was in java).

Round 4(F2F Technical Interview Round-2): This round is pretty much similar to first technical interview. The only difference is questions asked less on previous work and more on CS fundamentals, but rest is same.

1. Interviewer asked questions on my work at previous organisation and projects.
2. Some questions on hashing, BFS/DFS tradeoffs and sorting.

3. Questions on leadership principles.
4. DS-Algo easy-medium level question: <https://practice.geeksforgeeks.org/problem-page.php?pid=701884>
5. DS-Algo easy-medium level question: <https://practice.geeksforgeeks.org/problems/multiply-two-strings/1>

Round 5(F2F Bar raiser): This round was also similar to other technical interviews only the difference is interviewer was more interested in knowing my previous experience, projects and leadership principle. Plenty of leadership principle-based questions were asked in this round and once he got satisfied we moved on to a DS algo based problem.\xc2\xa0

1. Problem:- <https://www.geeksforgeeks.org/multiply-large-integers-under-large-modulo/>
(Logarithmic approach was expected)

Suggestion:-\xc2\xa0

- Don't panic in bar raiser because if you have come to this round then there must be some potential they have seen in your previous rounds.
- Take this as another technical interview with more focus on leadership principles. Also I think bar raiser has more weightage than any other rounds so if you can do well in this round you will probably get the offer.

Be calm & answer politely.

All the best!

Verdict: Accepted.

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Amazon Interview Experience for SDE (Off-Campus)

- Difficulty Level :\n[Easy](#)
- Last Updated :\n20 Aug, 2021

I recently got a chance to interview with **Amazon**. I had three rounds.\xc2\xab0

Round 1: It started with my introduction and then the interviewer quickly jumped to the coding part. I was asked two questions.\xc2\xab0

1. The first question was finding sliding window maximum.
<https://practice.geeksforgeeks.org/problems/maximum-of-all-subarrays-of-size-k3101/1>
2. The second one was to find the distance between two nodes of the Binary tree.
<https://practice.geeksforgeeks.org/problems/min-distance-between-two-given-nodes-of-a-binary-tree/1>

Then the interviewer slightly modified the question \xe2\x80\x93 what if the node structure of that binary tree defines \xe2\x80\x93 value, parent. Given the two nodes. Find the distance between them.

Round 2: This round was also a technical round wherein I was asked two coding problems.

1. <https://practice.geeksforgeeks.org/problems/k-largest-elements3736/1>
2. <https://practice.geeksforgeeks.org/problems/excel-sheet5448/1>

Round 3: This was the last round. We had a discussion related to my internships and projects. Then he asked me a couple of behavioral questions.

1. Then he asked me DP problem. <https://practice.geeksforgeeks.org/problems/longest-increasing-subsequence-1587115620/1>

The interviewers were very friendly. Overall the level was medium. One needs to be very calm during solving the problems. Be very clear about the time and space complexities and always speak while you are thinking. Discuss your solution with the interviewer and then only move onto writing the code. Always ask your interviewer if you are stuck or if you have any doubts.\xc2\xab0

Verdict: Selected

GeeksforGeeks is a great place to learn Data structures and Algorithms, which is the most important part of the interviews.

All the best!

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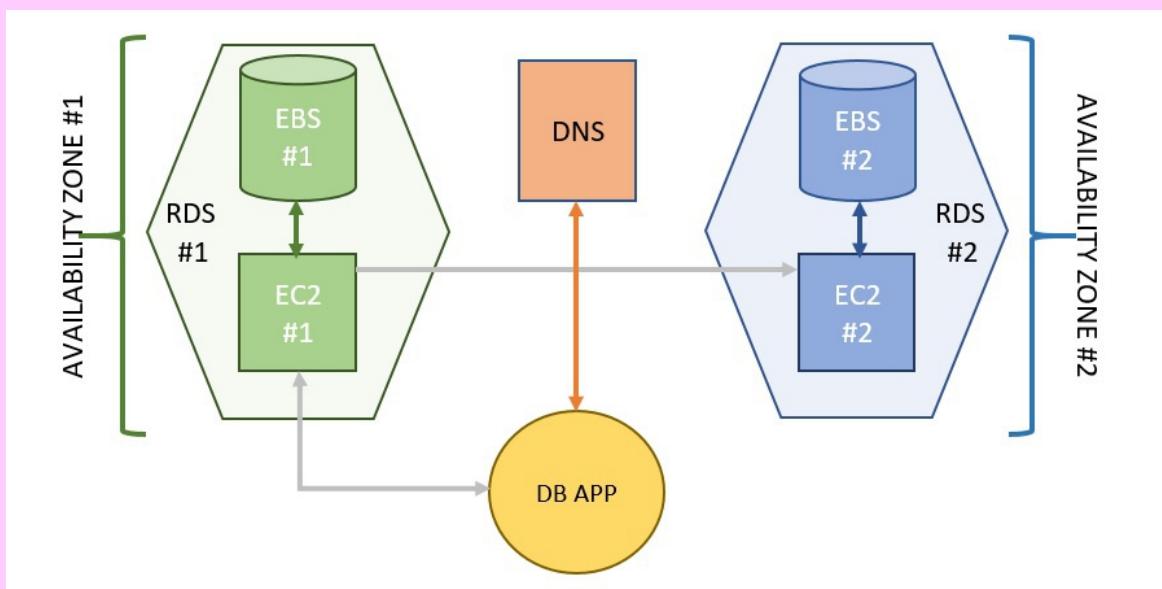
Amazon RDS |x80|x93 Introduction to Amazon Relational Database System

- Difficulty Level :[Medium](#)
- Last Updated :[25 May, 2021](#)

This article intends to make you aware of **Amazon RDS or Amazon Relational Database System**. Amazon RDS is nothing but a relational database management system along with the facilities of the AWS cloud platform. It facilitates us in creating database instances as per our requirements, i.e. resizable, variety of database type, etc.

AWS Relational Database Service (RDS) Architecture

Traditionally, database management used to be a very scattered service, from the webserver to the application server and then finally to the database. For maintenance of such a vast system a team was required, to shrink this workforce, AWS came across with an amazing all-in-one service, RDS. The whole architecture of RDS includes every aspect of the traditional management system, all at a place. Thus, it includes everything from **EC2 (Elastic Compute Cloud)** to **DNS (Domain Name System)**. Every part of the RDS architecture has its own separate set of features completely different from each other. A diagrammatical representation of RDS has attached ahead.



A small brief of some top features is discussed ahead.

- **Availability:** The [Automated Backup](#) feature of RDS makes the recovery of the database instance much easier and makes it available for access quickly. Other than that, [Database Snapshots](#) are user-driven backup features initiated by Amazon RDS, which makes it easier for the user to monitor all the alterations made on the Database Instance. These snapshots can be [shared](#) among multiple AWS accounts in order to expand the availability of the DB instance, along with maintaining the security of the confidential data.
- **Security:** While [creating](#) a new database, you have to create a password that is totally restricted and known to you only. And by default, you are given the [Admin role](#) which has the maximum authority on that particular database. Amazon RDS also allows its users to encrypt the databases using [AWS KMS](#) (Key Management Service) under Amazon RDS.
- **Backups:** RDS provides us the facility to have backups. We can have backups in multiple forms. [Snapshots](#) are basically non-editable backups used for maintaining records. We also can create [Automated Backups](#) simply by altering the configurations during creating the database. [Reserved instances](#) are also another type of backup facility available here.
- **Scalability:** RDS enables us to automatically scale up or scale down depending upon the number of transactions happening on your database per minute. We can do both [Horizontal Scaling](#) and [Vertical Scaling](#). Let us go through the difference between both of them.
 - **Horizontal Scaling** deals with the scenarios where the amount of traffic is increased on your database exponentially, in such cases, this scaling comes into the picture. This simply creates multiple hardware & software which are look-alike of the previously existing ones on the cloud in order to tackle the traffic.
 - **Vertical Scaling** deals with situations, where the traffic is not very much increased but the current configurations of the hardware & software are not able to handle the demands of the client anymore. Using this scaling method, we are capable of adding additional storage and processors to our pre-existing resources.

\xc2\xa0

- **Performance:** RDS gives two SSD-backed storage options for its users, i.e. **General Purpose & Provisioned**. All these variants directly impact the level of performance of the resource and its attached services. The general SSD is very cost-effective and is used at places where a broad workforce is required. Provisioned, as the name suggests are designed for temporary or lower workloads purposes.
 - **Pricing:** RDS only asks you to pay for what you use, once you are done with a certain resource delete it and don't pay for it anymore. There is no compulsory minimal charge decided for using RDS. Depending upon **Database Engines** and type of database, a bill is calculated and sent to you at the end of the month. For free tier accounts, special configurations are bound to choose and you won't get any bills if you delete all the resources you used before logging out.

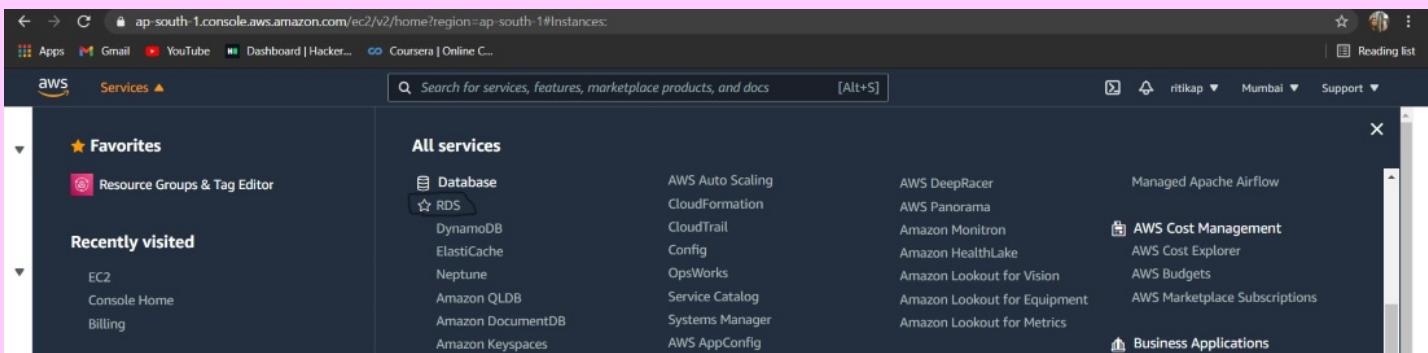
Some popular alternatives of RDS:

1. **MySQL** It is the 2nd most preferred open-source RDBMS in the world. It is developed by [Oracle](#). It is not typically cloud-based in nature like Amazon RDS, i.e. it can be used on PC as well. It is also offered as one of the options on RDS to choose as Database Engine. It supports five server operating systems. The main application of MySQL is in the e-commerce domain, data warehouse, and logging application.
 2. **PostgreSQL** It is one of the oldest RDBMS. It is also one of the popularly used open-source RDBMS. It was developed by [PostgreSQL Global Development Group](#) in 1989. It is a cross-platform software, and it supports more operating systems as compared to others. Its primary focus is maintaining the security of the data and it is a vast kingdom of user-defined functions.
 3. **MariaDB** It is the most compatible RDBMS, and it supports both secondary database models, i.e. **Spatial & Graph**. It was released in 2009, by [MariaDB](#) Corporation Ab (MariaDB Enterprise). It supports a wide range of programming languages and also allows the users to introduce server-side scripts. One of the best features of MariaDB is that it focuses on high-level security the community of MariaDB continuously finding and fixing the issues for MariaDB.

All these alternatives are found useful for users to meet their requirements at a certain level. AWS introduced, RDS to ensure that the ultimate control resides in the hands of the users. RDS is not of query-driven structure rather it is more like a console in its structure.

Now, let us look at the AWS Relational Database Service management console.

To reach to the RDS management console. First login into your AWS account. Once you are directed on the primary screen, at the leftmost part of it, click on `Databases`. From the long list, look for the sub-heading `RDS` and under it, you will find `RDS Instances`. Click on it. Here is the image to refer to.



Once you tap on RDS, in a while, you will be able to see the RDS management console. Refer to the image attached ahead for better understanding.

The screenshot shows the AWS RDS Dashboard for the Asia Pacific (Mumbai) region. On the left, a navigation pane lists various RDS services: Dashboard, Databases, Query Editor, Performance Insights, Snapshots, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Events, Event subscriptions, Recommendations, and Certificate update. The main content area is titled "Amazon Aurora". It describes Aurora as a MySQL- and PostgreSQL-compatible enterprise-class database. It includes a "Create database" button and a link to restore an Aurora DB cluster from a snapshot. Below this, there's a "Resources" section listing DB Instances (0/20), Allocated storage (0 TB/100 TB), Click here to increase DB instances limit, DB Clusters (0/40), Reserved instances (0/20), Snapshots (0), Manual (0/100), Automated (0), Recent events (0), and Event subscriptions (0/20). To the right, there's a "Recommended for you" sidebar with links to "Build RDS Operational Tasks", "Backup and Restore Using AWS Backup", "Time-Series Tables in PostgreSQL", and "Test Your DR Strategy in Minutes". The bottom of the page includes standard AWS footer links and a status bar showing the current time.

This is how the RDS dashboard looks like. On the left, there is the navigation pane to direct you about all the services under RDS. You can create your database from here, by tapping on the orange box saying, **Create database**. For [creating](#) a database in RDS follow the linked article.

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n18 May, 2021

I was contacted by a recruiter at the start of April for the Bangalore location

She asked me to give a coding test on Hackerrank. The test had 2 questions. I was able to solve both questions completely. After 1 week I got a call for a telephonic round.

There were total 5 Rounds of the interview \xe2\x80\x93

Technical phone screen (1 hour): The interviewer was SDE-2 at amazon.

- Asked 2 questions about work done from my resume
- Asked 1 heap-based question
- Question \xe2\x80\x93 Given M managers with priority as $M_1 > M_2 > \dots > M_n$, each manager has some n number of reporters working under him.
- There are x jobs with different priorities, your job is to assign the task to employees, such that M_{i+1} can not be assigned a task until all the reporters of M_i have been assigned.
- I gave him a heap-based approach, he asked me the time complexity.
- He was satisfied with my approach and asked me to write working code.

After 1 week I received a call for the next set of rounds i.e. onsite rounds.

First Onsite Round (1 hour): The interviewer was SDE2 at amazon.

- Asked 2 questions based on DS Algorithms, one question was based on BST and the other was based on Graph, I gave an approach of using dfs
- She asked me approach and time, space complexity first, I was able to solve both problems without any hint.
- Next, She asked me 2 Behavioral questions
- Question1 \xe2\x80\x93 Tell me a time when you had a conflict with the product team over some requirement and how did you handle it
- Question 2 \xe2\x80\x93 Tell me about a time when you had to work out of your comfort zone

Second Onsite Round (1 hour): The interviewer was SDE-3 at Amazon.

- He asked me one question on BST- <https://www.geeksforgeeks.org/print-binary-tree-vertical-order-set-2/>. I took 1 hint and around 30 minutes to write working code for this. He asked me to optimize the code more for space complexity.
- He asked some behavioral questions
- Question1 \xe2\x80\x93 Tell me about a time you have to face some unfamiliar requirement.
- Question2 \xe2\x80\x93 Tell me about a time when you faced a crisis at work

Third Onsite Round (1 hour): This was Hiring Manager\x80\x99s round.

- He gave a simple problem based on the array and sliding window concept.
- Next, he asked about the work done in the previous company.
- He gave me 1 question on MYSQL(mentioned in cv).
- We discussed some OOPs concepts like deadlock, semaphores, etc.
- After 2 days I got a call from the recruiter for the next round i.e. Bar raiser round

Bar Raiser Round (1 hour):

- The interviewer was in a very senior position at Amazon.
- He asked 2 questions based on DS also.
- Question 1 \xe2\x80\x93 DP based
- Question 2 \xe2\x80\x93 Something like a balanced parenthesis problem
- I was able to solve question 1 completely, he seemed satisfied with it.
- Due to lack of time, there were some bugs in the code of question 2.
- And also, all the interviewers asked me to explain the space and time complexity of my approaches.

Tips \xe2\x80\x93

- Prepare well for Amazon leadership principle.
- Make sure you remember all the projects from your resume.
- Prepare DS Algorithms well.

Result: Selected

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Amazon Interview Experience

- Last Updated : \n18 May, 2021

April 2021(1 Year Experienced)

Round 1: First round comprised of 2 coding questions on the hackerrank platform

1. Optimal file merge (solved by using priority queue /heaps).
<https://www.geeksforgeeks.org/optimal-file-merge-patterns/>
2. Second question used the concept of BFS in a matrix. <https://www.geeksforgeeks.org/shortest-distance-two-cells-matrix-grid/>

We also have to write the approach used for both these coding questions.

The written round was cleared, and I got an email for a telephonic round which was on Google meet

Round 2: The interviewer gave me one question and a shared file to do any rough work or write code there

1. The question was: <https://www.geeksforgeeks.org/find-next-greater-number-set-digits/>. I gave the brute force approach but could not properly figure out the optimised solution for this question so was not selected for further rounds.
2. And other questions he asked were around the leadership principles of Amazon.

Tips- Practice Data structure and algorithms questions a lot and also go through the Amazon leadership principles properly, as they focus on them a lot. All the Best!

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Amazon Interview Experience (On-Campus)

- Difficulty Level :[Medium](#)
- Last Updated :[11 May, 2021](#)

Round 1: In the first round I was asked 2 coding questions

1. <https://www.geeksforgeeks.org/maximum-size-sub-matrix-with-all-1s-in-a-binary-matrix/>
2. <https://www.geeksforgeeks.org/find-the-next-lexicographically-greater-word-than-a-given-word/>

I was able to solve both problems. The interviewer was a very chill kind of person, first, we discussed brute force approaches, and then he asked me to optimize the solution further, and finally, I was able to give him an efficient approach. He was satisfied and then asked me to implement the code in whichever language I want. So I implemented both solutions in C++.

Round 2: Again they asked me 2 coding questions

1. Given an infinite stream of integers and K, find the sum of K largest elements from stream at any point of time. This problem is similar to this one: <https://www.geeksforgeeks.org/kth-largest-element-in-a-stream/>

I first gave him an approach that was of $O(n^k)$ time complexity, the idea was to keep an array of k elements in sorted order, and whenever a new integer greater than min element came drop min element and place new element in the array. But the interviewer asked me can I optimise it further, after thinking for few minutes I gave him another approach of time complexity $O(n \log(k))$. The idea is to maintain a min-heap of size k and if new integer is greater than min integer then simply replace the min with new integer and update the sum. The interviewer was satisfied and asked me to implement the code for the min-heap and the actual problem statement.

2. Given n machines and their start time and end time to finish their work and K production line, find the minimum number of extra production lines needed to maximize the production.

Constraints: only one machine can work at a production line at a time. It is similar to this problem: <https://www.geeksforgeeks.org/maximum-number-of-overlapping-intervals/>.

Solution: let m be a maximum number of overlapping intervals then if $m \leq k$ ans will be 0. Otherwise, ans will be $m - k$. The interviewer also gave me hints if I was stuck anywhere.

Then at the end, they ask me behavioral/situational questions based on their Leadership Principles.

- Tell about any project you did in which you have used new technology that was not known to you. So, this question basically talks about Amazon's Leadership Principles: Dive Deep, Learn and be Curious

At Amazon they mainly aiming to know your thought process, the way you approach a problem, and how quickly you came to an optimized solution. So, always discuss or tell them your approach first, then try to optimise it and also do not forget about edge cases they are very important, do ask clarification questions if needed and tell them your assumption if any and then discuss your final approach, its time complexity and space complexity and do compare with other algorithms and then if interviewer will be satisfied go for implementation.

Note: Do not implement solution without discussing it with the interviewer because it will be definitely a Red Card and you will be out

Round 3: This was final round and was taken by a Manager. First, he introduced himself and then asks me to introduce myself. After that, he directly jump to problem-solving and asks me 2 coding questions

1. Give a 2D array of 1s and 0s, where 1 denotes a person and 0 denotes an empty cell, find the minimum number of persons needs to be evacuated such that we can stop the spread of covid and maintain social distancing. If two 1s are adjacent to each other column-wise or row-wise remove one of them and diagonally adjacent 1s need not to be removed

Example: 1 1 0
1 1 1
1 1 1
Output: 0 1 0
1 0 1
0 1 0

2. Given a page of a book, cursor position, and a keyword, return top k words near to the cursor which contains keyword as a substring. I was able to solve only 2nd problem.

Then we discuss the projects that I have mentioned in my resume.

So, be always prepared with whichever thing you have written on your resume, read about Amazon's Leadership Principles, and do practice coding problems as much as you can.

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Amazon Interview Experience for SDE-1 (Off-Campus)

- Difficulty Level :[Medium](#)
- Last Updated :11 May, 2021

I appeared for the amazon\xe2\x80\x99s interview for SDE full-time role, and here is my experience

Technical Interview Round-1

1. First question was there are given n ropes of different lengths, we need to connect these ropes into one rope. The cost to connect two ropes is equal to the sum of their lengths. We need to connect the ropes at a minimum cost. <https://www.geeksforgeeks.org/connect-n-ropes-minimum-cost/>

For example, if we are given 4 ropes of lengths 8, 5, 1, and 2. We can connect the ropes in the following ways.

- First, connect ropes of lengths 1 and 2. Now we have three ropes of lengths 3(1+2), 5, and 8.
- Now connect ropes of lengths 3 and 5. Now we have two ropes of lengths 8(5+3) and 8.
- Finally connect the two ropes 8+8 and all ropes have connected.

Total cost for connecting all ropes is $3+8+16 = 27$.

I told him solution using a priority queue, and also we can implement using the minimum heap, so he asked me to write code by implementing the whole heap function then he asked me about the time complexity of code, all the function of heap, why the time complexity of heap is $\log(n)$ and to explain them each and every function of code. I was able to write the code and to explain the time complexity but he was asking why the time complexity of insertion, deletion is $\log(n)$, I told him because the maximum height of heap will be $\log(n)$ (where n is the size of the heap) and each level will have a count of element double then next so first level will have 1 element then next atmost 2 then 4 like this so last element will have 2^h element

$$2^h=n$$

$$h=\log(n)$$

in this way, maximum height will be $\log(n)$ but he did not seem to be satisfied, and maybe I was not getting his question so he told me we will move to the next question then later we will discuss this.

2. Next question was robber is planning to rob houses and all houses are connected in form of a tree. Each house has a certain amount of money stashed, the only constraint stopping the robber from robbing each of them is that connected houses have security systems connected and it will automatically contact the police if two connected houses were robbed. you have to find the maximum amount of money robber can collect without calling the police

I was thinking solution, and also I was discussing my solution with the interviewer I was going off track, but the interviewer was helpful he gave me test cases where my logic will fail and gave me some hint, so I come up with a recursive solution, and he was also satisfied with the solution. He asked me about the time and space complexity.

Technical Interview Round-2

1. Discussion on the project.
 2. Then He asked me coding question Given a binary tree, a target node in the binary tree, and an integer value k, print all the nodes that are at distance k from the given target node. No parent pointers are available. <https://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree/> <https://media.geeksforgeeks.org/wp-content/uploads/20210506121359/BinaryTree4-300xc3lx97258.png>
- Consider the tree shown in diagram\r\nInput: target = pointer to node with data 8. \r\nroot = pointer to node with
- I told him the logic $O(n)$ solution.
3. Then a discussion on internship project why using this method only and so on.
 4. You have given a list of songs, and you have to play songs randomly how will you implement them.

I told him I will use a random function to find a random number then mod it with the size of the list to find an index from 0 to size then I will play the song corresponding to that index.

Then he told me that songs should not repeat then I told him to move the current song to the end of the list and then I will decrease the size so that we will not consider the last element we can use vectors for this.

Technical Interview Round-3

1. It was both technical and behavioral round
2. Have You Faced Any Tight Deadline How Did You Handled It
3. Any difficult situation
4. How Do You Handle Conflict in the Workplace (with team or manager)
5. The time when you received negative feedback from your manager
6. Tell me about the biggest risk you have taken
7. Given the structure of the train, and given arrival and departure time of the train and initially, each train will have green color now if two train overlap color will change to blue to implement the function. variation of this problem <https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/>

Structure of train

C++

```
struct train
{
    string color;
    int arrival_time;
    int departure_time;
}
```

First I told him the basic $O(n^2)$ solution then I told him $O(n)$ solution and he asked me to write the code for $O(n)$ solution.

Tips:-

- Keep asking for the clarifications of question and edge cases.
- Try to discuss your approach with the interviewer and think out loud, The interviewer is there to help you out.
- Keep track of all edged cases and ask your interviewer about them.
- If the interviewer is not able to understand your approach try to explain with help of pseudo code.
- Don't make your own assumptions, tell them that you are making these assumptions, and if they are good with that then only proceed with your solution.
- Hope this helps, Best of Luck!

Verdict:

Selected!

Thanks, GeeksforGeeks for helping me throughout my preparation journey, I did my complete preparation from GeeksforGeeks.

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Amazon RDS |x80|x93 Copying a DB Snapshot

- Difficulty Level :[Medium](#)
- Last Updated :[13 May, 2021](#)

This article will include all the steps required and related to **copying a DB Snapshot**. Before, getting straight into the process, let us be familiar with the concept of DB Snapshot.

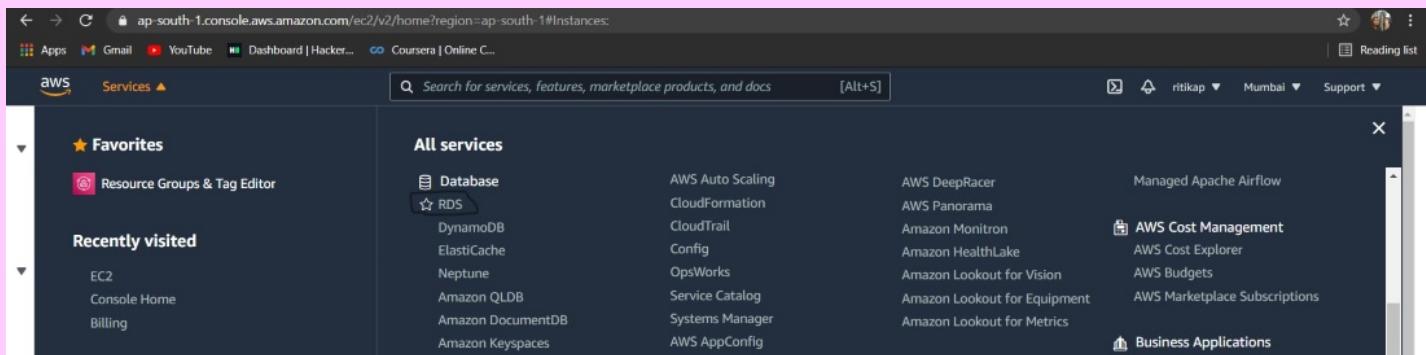
A DB [Snapshot](#) or database snapshot is a **non-editable backup** of any desired database instance at any point of time, protected and saved securely in **Amazon S3** for any user-defined period of time. DB Snapshots can be categorized into two types, namely, they are-

- **Automated**
- **Manual**

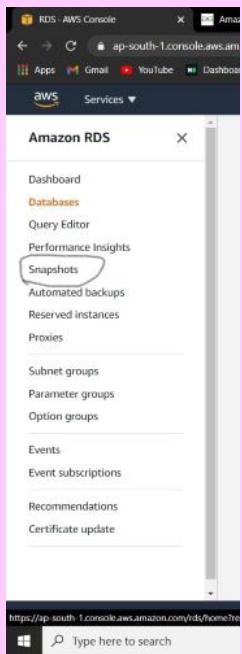
As the names suggest, automated snapshots are made by the cloud itself and manual snapshots are created by users only.

Now, let us jump straight into the process of copying a DB Snapshot.

Step 1: Login into your AWS account, as your main screen appears, then you have to go to the **services** section present on the extreme left, click on that. A bunch of services will be listed ahead of you. Among them, there is an option of the **database**, here we have the **RDS** (amazon relation database service) click on it. The image is attached ahead to refer to.



Step 2: Once the RDS console is completely loaded on the screen, from the navigation pane of the left choose **Snapshots**. An image is attached for better understanding.



Step 3: In a while, the list of existing snapshots will appear on the screen. Refer to both lists i.e. Manual & Automated and then select the snapshot you are willing to copy. And from the menu bar, click on **Actions** and choose **Copy Snapshot**. Here is the image to refer to.

Dashboard
Databases
Query Editor
Performance Insights
Snapshots
Automated backups
Reserved instances
Proxies
Subnet groups
Parameter groups
Option groups

Snapshots

Manual System Shared with me Public Backup service Exports in Amazon S3

Manual snapshots (1)

Filter manual snapshots

Snapshot name DB instance or cluster

[REDACTED] [REDACTED]

Actions	Take snapshot
Restore Snapshot	1 > @
Copy Snapshot	time
Share Snapshot	
Migrate snapshot	
Export to Amazon S3	:25:35 GMT+010
Delete Snapshot	

Step 4: Further, the copying page appears. Here, you can choose the region wherever you want to copy the snapshot and give a name to this new snapshot. Here is the image attached to refer to.

RDS > Snapshots > Copy Snapshot

Make Copy of DB Snapshot?

Settings

Source DB Snapshot
DB Snapshot Identifier for the automated snapshot being copied.
my-source-snapshot

Destination Region info
US West (Oregon)

New DB Snapshot Identifier
DB Snapshot Identifier for the new snapshot
target-snapshot-1

Target Option Group (Optional) [info](#)
No preference

Copy Tags [info](#)

Please note that depending on the amount of data to be copied and the Region you choose, this operation could take several hours to complete and the display on the progress bar could be delayed until setup is complete.

Step 5: After checking all the details of your new snapshot, finally, click on **Copy Snapshot**. Refer to the image attached ahead.

Encryption

Encryption info

Enable Encryption
Select to encrypt the given instance. Master key ids and aliases appear in the list after they have been created using the Key Management Service(KMS) console. [Learn More](#).

Disable Encryption

Cancel **Copy Snapshot**

In this way, you can easily copy a DB Snapshot using the console. Copying an existing snapshot is helpful to users in multiple ways. As it helps us to maintain records and securely copy them in a similar or different region as per our choices. For security concerns, we can copy an encrypted snapshot as well and can maintain the same security level at every region.

If you also use a free tier AWS account, then don't forget to [delete](#) all the resources and snapshots before logging out.

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Amazon RDS |x80|x93 Sharing a DB Snapshot

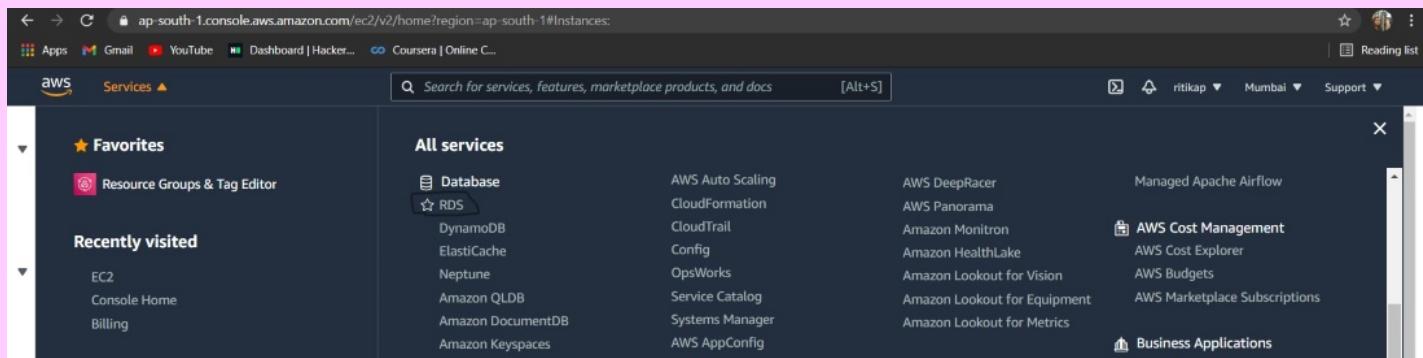
- Difficulty Level :[Medium](#)
- Last Updated :[13 May, 2021](#)

This article is composed of all the steps involved in **sharing a DB Snapshot** with other AWS accounts. Since sharing such a confidential entity like a snapshot is meant to be secured and protected. Thus, we should be very much concerned about the security of the snapshot.

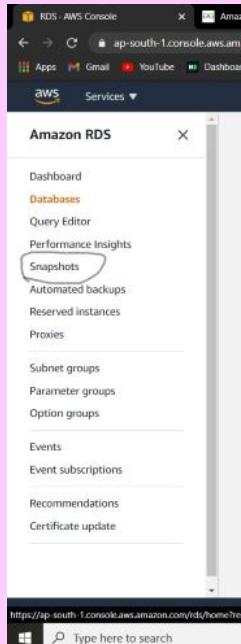
Shared DB [Snapshots](#) are used for keeping track of the databases over different AWS accounts or regions. Organizations use this method to store their databases on both the premises i.e. respective availability zone and as well as the particular region. This flexibility enables the organizations in maintaining their data security on regional as well as organizational levels.

Now, let's jump to the step-by-step process of **Sharing a DB Snapshot**.

Step 1: First login into your **AWS** account and once your AWS management console screen is loaded. Click on [services](#) which is written on the left and from the drop-down menu under **Database section** there is an option **RDS**. Click on that and wait for the page to be loaded. Here is the image for better understanding.



Step 2: Once the RDS management console appears, check out the navigation pane and click on [Schemas](#). Refer to the image for better understanding.



Step 3: On the right, you will find the list of all the pre-existing snapshots (both manual and automated) on the cloud. Select the snapshot you want to share. Refer to the image for understanding better.

The screenshot shows the Amazon RDS management console. The left sidebar has a navigation menu with options: Dashboard, Databases (which is selected and highlighted in orange), Query Editor, Performance Insights, Snapshots, Automated backups, Reserved instances, and Proxies. The main content area is titled "Databases". It includes a search bar labeled "Filter databases" and a table header with columns: DB identifier, Role, and Engine. A single database entry, "database-1", is listed under the "MySQL Community" engine.

Step 4: Now, click on **Actions** and from the drop-down list choose **Share Snapshot**. Here is the image for better understanding.

The screenshot shows the Amazon RDS management console on the "Snapshots" page. The left sidebar includes "Schemas" and "Tables" under the "Databases" section. The main area displays a table of "Manual snapshots" with one entry. An "Actions" dropdown menu is open next to the snapshot, listing options: Restore Snapshot, Copy Snapshot, Share Snapshot, Migrate snapshot, Export to Amazon S3, and Delete Snapshot.

Step 5: After this, a new screen with a **snapshot permission** dialog box will load in a while. Choose the visibility configurations as per your data security requirements i.e. **Public or Private**. And further, add all the AWS accounts you wish to share the snapshot with. You can add or delete the AWS accounts per your requirements at any point in time. Here is the image to refer to.

This is a screenshot of the "Snapshot permissions" dialog box. It starts with a "Preferences" section stating: "You are sharing an unencrypted DB snapshot. When you share an unencrypted DB snapshot, you give the other account permission to make a copy of the DB snapshot and to restore a database from your DB snapshot." Below this, there are fields for "DB snapshot" (containing "testoracletags-snap") and "DB snapshot visibility" (radio buttons for "Private" and "Public", with "Private" selected). There is also a "AWS account ID" input field with an "Add" button. A list of AWS accounts is shown below, with a "Delete" button and a note "Please add AWS account ID". At the bottom are "Cancel" and "Save" buttons.

This is a simple method to share a DB Snapshot with desired AWS accounts using the RDS management console. And if you also have a free tier AWS account, then make sure you delete every snapshot you have created. You can also refer to these articles to learn about [creating](#) or [deleting](#) a DB Snapshot.

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Amazon RDS |x80|x93 Exporting DB Snapshot Data to Amazon S3

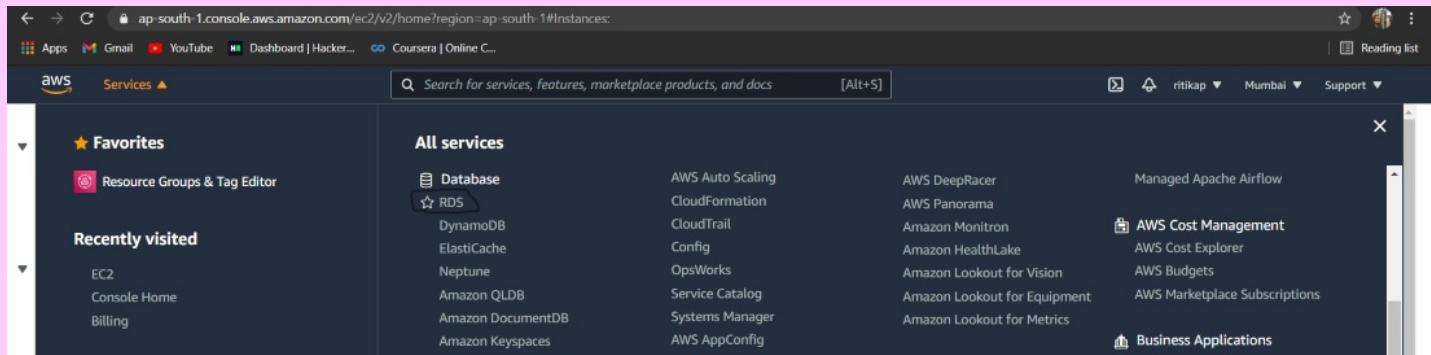
- Difficulty Level :[Medium](#)
- Last Updated :[13 May, 2021](#)

This article will cover all the steps involved in **exporting DB Snapshot data to Amazon S3**. For this process, we primarily need a pre-existing **Snapshot** and an **Amazon S3** bucket. We can even create the S3 bucket during the exporting process, but an existing one will sort the task and make it quicker. Exporting a DB [Snapshot](#) extracts the data from the database snapshot and stores it on your desired S3 bucket to analyze further.

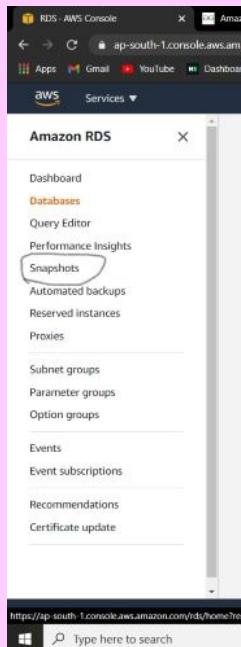
Amazon S3 or Simple Storage Service is a cloud storage resource of object storing. A basic example of this storage type is Google drive. We can store different types of files here like images, documents, applications, etc. S3 is much more flexible and loaded with several features along with the facilities of a cloud platform.

Now let's get to the task of **exporting DB Snapshot data to the Amazon S3 bucket**

Step 1: First, login into your AWS account, and once your primary screen is loaded. Click on **services** which is written on the left and then from the drop-down menu under the **Database** section there is an option **RDS**. Click on that and wait for the page to be loaded. Here is the image for better understanding.



Step 2: Once the next page loads, a list of options will appear on the left navigation pane. From the list click on **snapshots**. Here is the image to refer to.



Step 3: After a while, an array of snapshots along with their names and other details are visible on the screen. Select the snapshot you wish to export. Please refer to the image attached ahead.

The screenshot shows the Amazon RDS console with the 'Databases' section selected. A single database entry, 'database-1', is displayed. The details show it's an 'Instance' of 'MySQL Community'. There are buttons for 'Group resources', 'Copy', and 'Modify' at the top right.

Step 4: Now, click on **Actions**. From the given drop-down list of options, select the **Export to S3** option. Take reference from the image attached ahead.

The screenshot shows the 'Snapshots' page in the RDS console. A specific manual snapshot, 'snapshotforexport', is selected. The 'Actions' dropdown menu is open, and the 'Export to Amazon S3' option is highlighted with a red box.

Step 5: Now, comes the configuration time. When the export to the S3 window appears. First, give a name to the task for the identification process. Scroll down and fill in other details like the **bucket name**, amount to export i.e. **Partial** or **All**. Refer to the image for understanding better.

The screenshot shows the 'Export to Amazon S3' configuration dialog. Key settings include:

- Export identifier:** bank-demo
- Exported data:** Exported data format is Parquet.
- Amount of data to be exported:** All (20 GB) is selected.
- S3 destination:** An S3 bucket is selected, and an optional S3 prefix is provided.

Step 6: Once everything is configured as per your demands. Click on **Export to S3**. Here is the image to refer to.

Pricing details

For snapshot data export to Amazon S3, the cost of exporting snapshot data is based on the snapshot size. [Learn more](#)

Additional charges apply for storing exported data in Amazon S3. [Learn more](#)

Cancel

Export To Amazon S3

In this way, we can simply **Export a DB Snapshot to S3** using the AWS console. We can also encrypt the snapshots in cases where the data security is at a higher stake. And if you are also a free tier account user like me, then make sure you delete all the instances, snapshots, and all other services you have used before logging out from your account. For any confusion while [deleting](#) the snapshot consult this article.

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Amazon Interview Experience for SDE-2 | 4 Years Experienced

- Difficulty Level :\nMedium
- Last Updated :\n06 May, 2021

Virtual Interviews

I got a call from an Amazon recruiter via LinkedIn. She sent me the coding test link which I had to complete within a week. Once I completed the test, I got a call to schedule the interviews. All interviews were held on Amazon Chime as per schedule.\xc2\x90

Overall process took 1 month to complete the test and interviews.

Following are the questions that were asked:

HackerRank Test (90 Minutes online test)

1. Shopping Options: We are given the costs of a list of pants, shirts, shoes, skirts. We have a certain amount of cash with us, we need to determine the total number of possible combinations which we can buy given that we must buy one and only one of each type.

Eg: pants=[3, 5, 7], shirts = [4, 7, 8],\r\nskirts = [5, 8], shoes = [3], budget = 25

So in the above e.g., apart from the combination [7, 8, 8, 3], all others are possible.

Hint: Since we have to buy all, we can combine the first two lists and the last two lists, so we would have cost lists like pants_shirts = [\xe2\x80\x9a6] and

skirts_shoes = [\xe2\x80\x9a6], now we can just iterate over one list and binary search the remaining amount over the other list and add accordingly.

2. Storage Optimization: Amazon is experimenting with a flexible storage system for their warehouses. The storage unit consists of a shelving system that is one meter deep with removable vertical and horizontal separators. When all separators are installed each storage space is one cubic meter(1*1*1). Determine the volume of the largest space when a series of horizontal and vertical separators are removed.\xc2\x90
\xc2\x90

n = 6\r\nm = 6; \r\nh = [4]\r\nv = [2]

Round 1(Problem Solving): 50 Minutes

First round was taken by a Software Engineer Manager who was residing in US. He introduced himself and then asked about some question related to Amazon leadership Principle.

Then asked one problem solving question. Given a list of words return a Map of words which can be formed by using other words which exist in the same list. He asked only one problem solving question. Most focus was on leadership Principle.

```
input = [\xe2\x80\x9chappy\xe2\x80\x9d, \xe2\x80\x9ccrise\xe2\x80\x9d, \xe2\x80\x9cfor\xe2\x80\x9d,\r\n\xe2\x80\x9ccset\xe2\x80\x9d, \xe2\x80\x9ccsunrise\xe2\x80\x9d, \xe2\x80\x9ccsul\xe2\x80\x9d,\r\n\xe2\x80\x9ccnset\xe2\x80\x9d, \xe2\x80\x9ccunset\xe2\x80\x9d, \xe2\x80\x9cmind\xe2\x80\x9d,\r\n\xe2\x80\x9chappymind\xe2\x80\x9d, \xe2\x80\x9ccnl\xe2\x80\x9d, \xe2\x80\x9ccrise\xe2\x80\x9d,\r\n\xe2\x80\x9chappysunrise\xe2\x80\x9d]
```

```
output = {\r\n\xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xe2\x80\x9chappymind\xe2\x80\x9d : [[\xe2\x80\x9chappy\xe2\x80\x9d,\r\n\xe2\x80\x9cmind]],\r\n\xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xe2\x80\x9ccsunrise\xe2\x80\x9d : [[\xe2\x80\x9ccsul\xe2\x80\x9d,\r\n\xe2\x80\x9ccn\xe2\x80\x9d, \xe2\x80\x9ccrise\xe2\x80\x9d], [\xe2\x80\x9ccun\xe2\x80\x9d,\r\n\xe2\x80\x9ccrise\xe2\x80\x9d]],\r\n\xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xe2\x80\x9ccunset\xe2\x80\x9d : [[\xe2\x80\x9ccsun\xe2\x80\x9d,\r\n\xe2\x80\x9ccset\xe2\x80\x9d], [\xe2\x80\x9ccsul\xe2\x80\x9d, \xe2\x80\x9ccnl\xe2\x80\x9d, \xe2\x80\x9ccrise\xe2\x80\x9d, \xe2\x80\x9ccset]],\r\n\xc2\x9a0\r\n\xc2\x9a0 \xc2\x9a0 \xe2\x80\x9chappysunrise\xe2\x80\x9d : [[\xe2\x80\x9chappy\xe2\x80\x9d,\r\n\xe2\x80\x9ccsunrise\xe2\x80\x9d], [\xe2\x80\x9chappymind\xe2\x80\x9d, \xe2\x80\x9ccnl\xe2\x80\x9d, \xe2\x80\x9ccrise\xe2\x80\x9d,\r\n\xe2\x80\x9ccset\xe2\x80\x9d], [\xe2\x80\x9chappymind\xe2\x80\x9d, \xe2\x80\x9chappy\xe2\x80\x9d, \xe2\x80\x9ccrise\xe2\x80\x9d,\r\n\xe2\x80\x9ccset\xe2\x80\x9d], [\xe2\x80\x9chappysunrise\xe2\x80\x9d, \xe2\x80\x9chappymind\xe2\x80\x9d, \xe2\x80\x9chappy\xe2\x80\x9d, \xe2\x80\x9ccrise\xe2\x80\x9d,
```

```
\xe2\x80\x9cn\xe2\x80\x9d, \xe2\x80\x9crise\xe2\x80\x9d]]  
}
```

Round 2(Problem Solving): 50 Minutes

Second round was taken by a SDE3 guy who was also in US. He introduced himself and then asked some questions related to Amazon leadership Principle.

He also asked me only one Problem Solving question.

Given an array of integers, return a new array such that each element at index i of the new array is the product of all the numbers in the original array except the one at i.

\xc2\x0

For example, if our input was [1, 2, 3, 4, 5], the expected output would be [120, 60, 40, 30, 24]. If our input was [3, 2, 1], the expected output would be [2, 3, 6].

I solved it by multiplying the complete array then divide each index item to the complete sum.

Then he asked me not to use division. Was able to do in O(n) time complexity

<https://www.geeksforgeeks.org/a-product-array-puzzle/>

Round 3(System Design): 1 hr 10 minutes

Third round was a system design round which is taken by Senior engineer manager.

He introduced himself and the team he was hiring for.\xc2\x0 He asked some question related Amazon leaderShip principles. \xc2\x0

He asked me to design a Distributed Scheduler which should work for all kinds of clients (Human, Machines {APIs}).\xc2\x0

Main functionality he asked me to implement was to schedule a job and remind the client about the job at set time. \xc2\x0

- Mostly High level design,\xc2\x0
- More questions on scalability, availability, fault tolerance, and resilience.
- Ensure all jobs will work.\xc2\x0
- How system will work in peak time.
- What should be the time frame in which user will notify?
\xc2\x0

Round 4(Bar-Raiser): 1 hr 25 minutes

Fourth round was the bar raiser round. In this round 2 interviewers were there. One of them was Senior Software Dev Manager and another was Technical Program Manager. (One of them was shadowing)

Started with the introduction.

He asked some question related Amazon leaderShip principles.

Design an Online Book Store.

Expectations :

1. Function Requirements (Explanation)
2. Non \xe2\x80\x93 Function Requirements (Explanation)
3. Domain Objects
4. High Level Components (Complete Services, Caches, Search, Message Broker, Data Base, Service Interactions)
5. Services Dependency with responsibility
6. Data Flows
7. APIs
8. Entity Relations
9. DB Schema

10. Scalability
11. Distribution and management
↳

He asked me some more Amazon Leadership principle questions with STAR(Situation, Task, Action, Result) process.

Note:

In every round amazon leadership principle questions were asked. So don't forget to prepare for them too.

HR called before every interview and told about how this round goes and principles on which focus will be the most.

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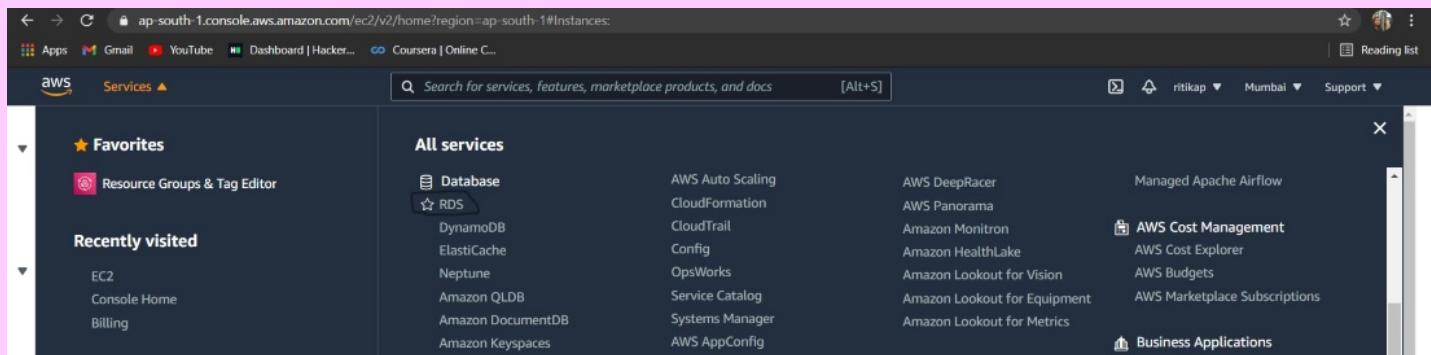
Amazon RDS | Renaming a DB Instance

- Difficulty Level : [Medium](#)
- Last Updated : 09 May, 2021

This article will cover the steps involved in **Renaming a DB Instance**. A DB Instance is nothing but a database which includes a bunch of memory structures for managing data files. For more detailed information on the topic give the linked article a read.

For **renaming** an existing DB Instance,

Step 1: Login to your AWS account. Click on **services** from the leftmost side of the AWS management console. And click on **RDS**. Here is the image for better understanding.



Step 2: From the navigation pane, click **databases**. Here is the image for better understanding.

The screenshot shows the AWS RDS console interface. The left sidebar menu is titled "Amazon RDS" and includes the following options:

- Dashboard
- Databases**
- Query Editor
- Performance Insights
- Snapshots
- Automated backups
- Reserved instances
- Proxies
- Subnet groups
- Parameter groups
- Option groups
- Events
- Event subscriptions
- Recommendations
- Certificate update

The main content area is currently displaying the "Databases" section. At the top of this section, there is a search bar with the placeholder text "Type here to search".

Address bar: https://ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#databases

Step 3: Select the **instance** you are willing to rename. Here is the image for better understanding.

The screenshot shows the "Databases" list within the AWS RDS console. The left sidebar menu is identical to the previous screenshot. The main content area displays a table titled "Databases" with the following data:

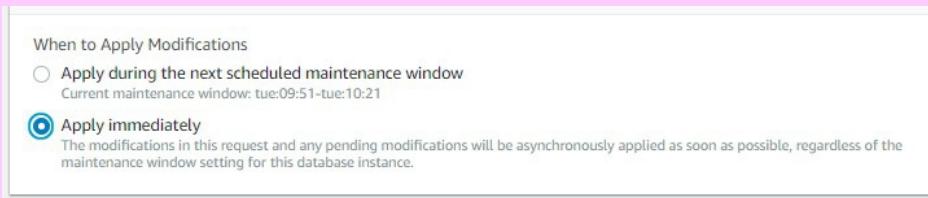
DB identifier	Instance	Engine
database-1		MySQL Community

At the top right of the database list, there are three buttons: "Group resources", "C", and "Modify". The "Modify" button is circled with a red marker.

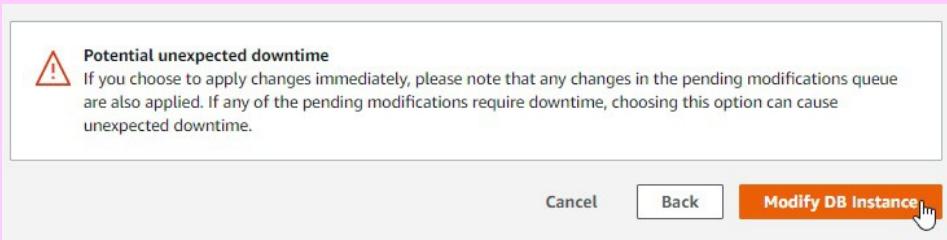
Step 4: Click on **modify**.

Step 5: Under settings, enter a new name for the **DB Instance identifier**. Here is the image for better understanding.

Step 6: For making the changes immediately, choose **Apply Immediately**. Here is the image for better understanding.



Step 7: Finally after reviewing the changes click on **Modify DB Instance** for saving the changes made. You can select **back** if something is still wrong in the setting. Here is the image for better understanding.



In this way, we can simply rename a pre-existing instance.

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Amazon RDS |x80|x93 Restoring From a DB Snapshot

- Difficulty Level :[Medium](#)
- Last Updated :[09 May, 2021](#)

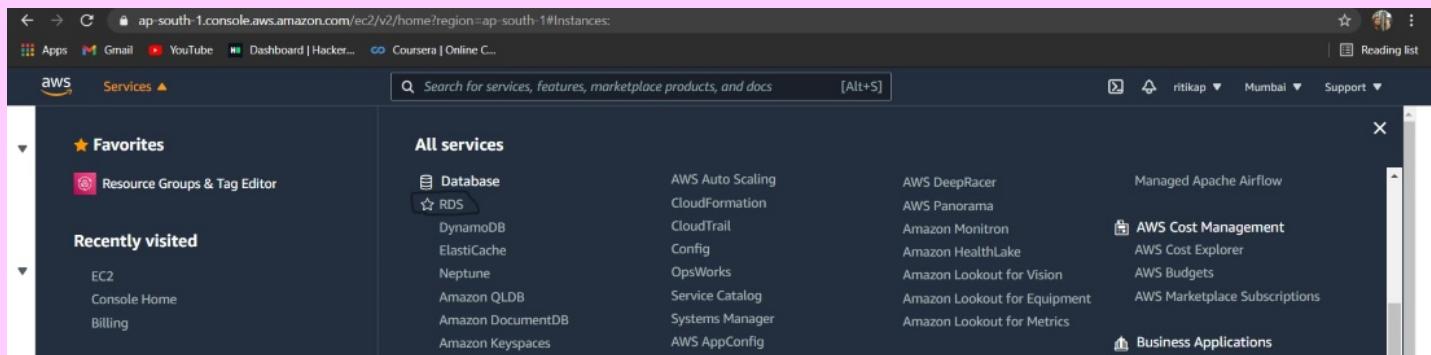
This article covers the whole process of **restoring from a DB Snapshot** for a DB Instance identifier.

As we all know, a **Snapshot** is nothing but a **read-only type backup** of any database instance, securely protected and saved in Amazon S3 for any specific period time. Snapshots make it easier to create a new database with similar configurations and properties. It is useful at places where the client needs multiple databases with almost similar properties. Rather than creating a new database from the scratch, we prefer restoring it from a snapshot. As it is easier and faster than the traditional approach.

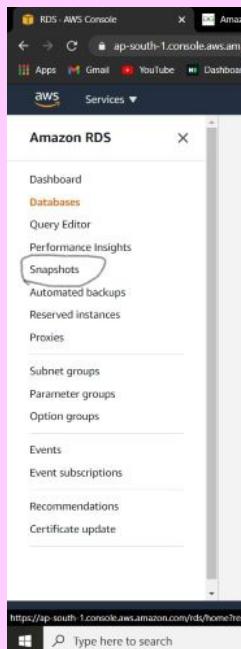
Before diving deep into the restoring process. First let us learn [how to create a database](#) and for that follow this linked article.

Now, let's look at the restoring process step-by-step.

Step 1: First, login into your AWS account. And from the leftmost, click on the **services** tab, then from the drop-down list click on **RDS** service. The image is attached ahead for a much better understanding.



Step 2: From the navigation pane, choose the option **Snapshots**. Here is the image to refer to.



Step 3: Once the snapshot page is loaded on the screen. It looks like this somewhat.

The screenshot shows the 'Amazon RDS' service dashboard with the 'Schemas' section selected. On the left, a sidebar lists various options like Dashboard, Databases, Query Editor, etc. The main content area is titled 'Snapshots' and shows a table for 'Manual snapshots (1)'. The table has columns for Snapshot name, DB instance or cluster, Snapshot creation time, and DB Instance created. The single entry is 'manual-screenshots' under 'database-1' created on 'April 21, 2021'.

Step 4: Now, choose the **DB snapshot**, from which you wish to restore. After selecting the snapshot tap on **Actions** and from the list of options select the **Restore Snapshot** option. Here is the image to refer to.

This screenshot is similar to the previous one but shows the 'Actions' dropdown menu for the selected snapshot 'database-1-final-snapshot'. The menu includes options like 'Restore snapshot', 'Copy snapshot', 'Share snapshot', 'Migrate snapshot', 'Export to Amazon S3', and 'Delete snapshot'.

Step 5: Now, on the restore snapshot page, look at all the details attached to the snapshot you are restoring from. The image is attached ahead for a much better understanding.\xc2\x90

This screenshot shows the 'Restore snapshot' page. The left sidebar is identical to the previous ones. The main content area is titled 'Restore snapshot' and contains a 'DB specifications' section. It includes fields for 'Engine' (set to 'Amazon Aurora with MySQL compatibility'), 'Capacity type' (set to 'Provisioned'), and 'Replication features' (set to 'Single-master replication is currently selected'). There are also sections for 'Engine version' and 'Show versions that support the global database feature'.

Step 6: Keep scrolling, under the **settings** section, give a unique name to the **DB instance identifier**. Use the image to understand better.

The screenshot shows the AWS RDS Settings page. On the left, there's a sidebar with various navigation links. The main area is titled 'Settings' and contains sections for 'DB snapshot ID', 'DB instance identifier', and 'Connectivity'. The 'DB instance identifier' section includes a note about case-insensitivity and character constraints. The 'Connectivity' section shows a dropdown for 'Virtual private cloud (VPC)' set to 'Default VPC (vpc-7d4a8f16)'. A note at the bottom says 'After a database is created, you can't change the VPC selection.'

Step 7: Once everything is as per your choice, click on **Restore DB Instance**. Here is the final image.

The screenshot shows the 'Restore DB Instance' configuration page. It features a sidebar with navigation links. The main area has sections for 'Allocated storage' (set to 20 GiB), 'Microsoft SQL Server Windows Authentication' (with an unchecked checkbox for enabling it), 'Encryption' (with an unchecked checkbox for enabling it), and 'Additional configuration'. At the bottom right are 'Cancel' and 'Restore DB Instance' buttons.

In this way, we can simply, **restore from a DB Snapshot**. And if you are also a free tier account user, then make sure you delete all the instances and snapshots before logging out from your account. For a detailed article about [deleting a DB Snapshot](#) follow the linked article.

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Amazon RDS |xe2|x80|x93 Creating a DB Snapshot

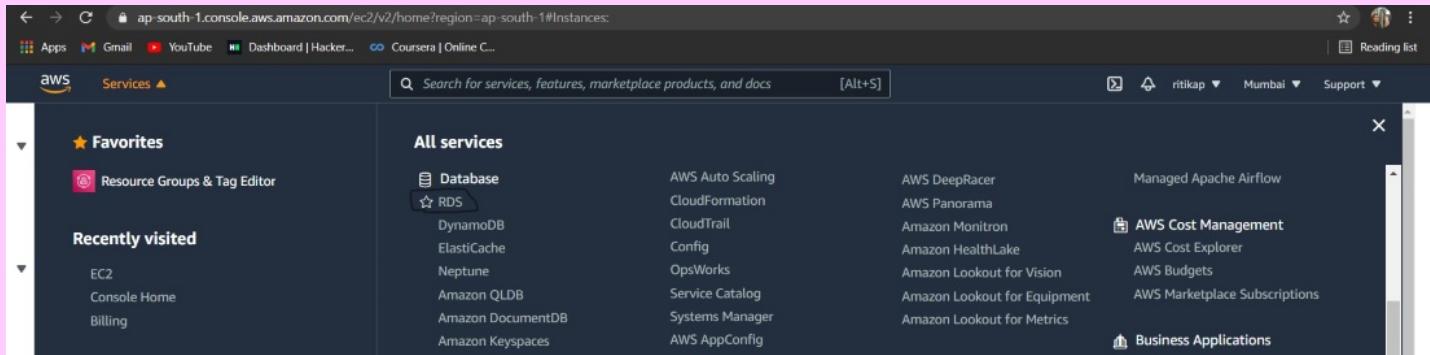
- Difficulty Level : \nMedium
 - Last Updated :\n09 May, 2021

Amazon RDS or Amazon Relational Database Service makes the manipulation of databases much easier and handy for its users. It is very much similar to the traditional relational databases along with numerous facilities of the cloud as a platform. Due to these extra advantages, people prefer AWS for managing their data. For more detailed information about Amazon RDS, read this [article](#).

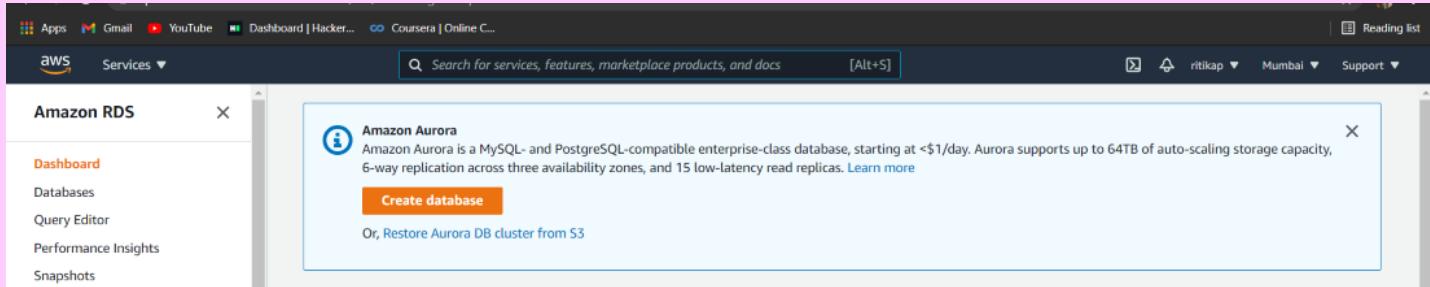
A **DB Snapshot** is a **non-editable backup** of database instances protected and saved in Amazon S3 for a desired period of time which is specified by the user. By default, this period is set as 7 days. And as per the time period decided by the user, this backup remains the same and increases the value of the total bill.

Now let's get to the task of **creating a DB Snapshot**

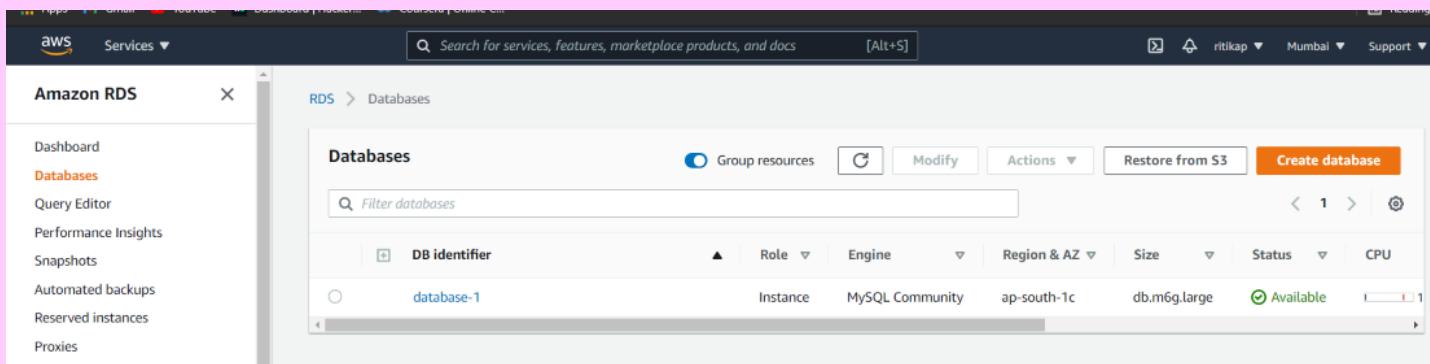
Step 1: First login into your AWS account and once your primary screen is loaded. Click on **services** which is written on the left and from the drop-down menu under **Database** there is an option **RDS**. Click on that and wait for the page to be loaded. Here is the image for better understanding.



Step 2: Once the screen is available click on **create database**. And create your database as per your choice. The image to refer to is attached ahead.



Step 3: After your database is successfully created. Now you are all set for creating a DB Snapshot. But make sure it\xe2\x80\x99s successfully created because without successfully creating a database we cannot generate a snapshot for that particular database. It may take a while to create don\xe2\x80\x99t bother. The status must say **Available**. Here is the image to know whether your database is successfully created or not, please refer to it.



Step 4: Now, select the database for which you wish to create the **snapshot**. Select the database and click on **Actions** and select the option **Take Snapshot** from the list. Please refer to the image for better understanding.

The screenshot shows the AWS RDS Databases page. On the left, there's a sidebar with options like Dashboard, Databases, Query Editor, etc. The main area is titled 'Databases' and shows a table with one row for 'database-1'. The table includes columns for DB identifier, Instance, Role, Engine, Status, and CPU. There are buttons for Actions, Restore from S3, and Create database.

Step 5: Click on **Snapshots**. And write the name of the database for which you are willing to create the snapshot. And finally, click on **Take Snapshot**. Refer to the image attached ahead.

This screenshot shows the 'Take DB snapshot' configuration page. It has a 'Settings' section where you can provide a name for the snapshot. The 'DB instance' is set to 'database-1'. The 'Snapshot name' field contains 'database-1'. At the bottom, there are 'Cancel' and 'Take snapshot' buttons.

Step 6: Now, from the left drop-down list click on **Snapshots**. And once the fresh screen will be loaded, you'll be able to see the snapshot. The snapshot will have the same name as that of the database. Refer to the image for a much better understanding.

The screenshot shows the AWS RDS Snapshots page. The sidebar has 'Schemas' selected. The main area is titled 'Snapshots' and shows a table for 'Manual snapshots'. It has one entry for 'database-1', which was taken on April 27, 2021. There are tabs for Manual, System, Shared with me, Public, Backup service, and Exports in Amazon S3.

In this way, your DB Snapshot is successfully created. If you also have a free tier AWS account. Then make sure you delete all the database instances and snapshots too. As keeping them will increase your bill amount. And for [deleting a DB Snapshot](#) take help from this article.

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Amazon RDS |x80|x93 Modifying an Amazon RDS DB instance

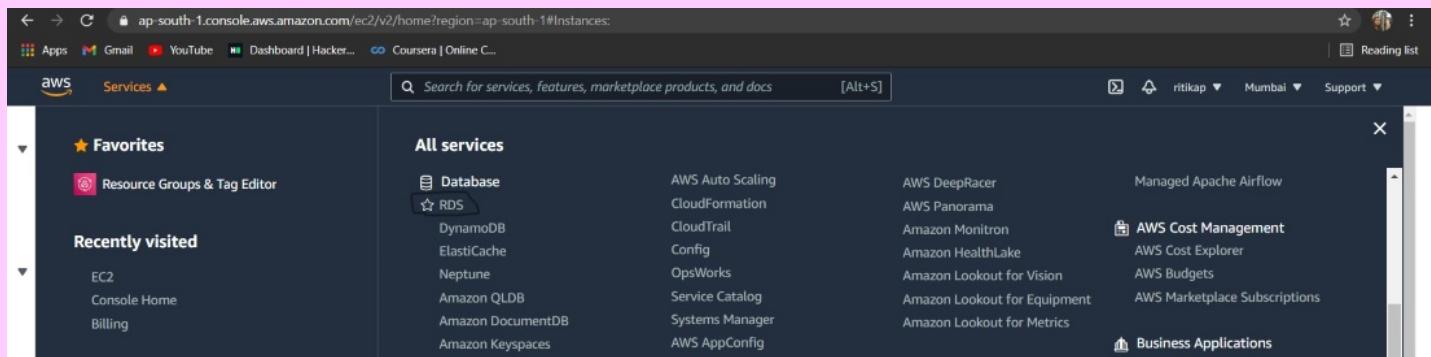
- Difficulty Level :[Hard](#)
- Last Updated :[09 May, 2021](#)

This article will cover all the steps involved in **modifying an existing amazon RDS DB instance.**

AWS provides liberty to modify an existing DB Instance as per the dynamic demands of the user. This feature adds another layer of flexibility to the overall infrastructure of the AWS cloud computing platform. A pre-existing DB Instance can be altered at any point of time by the user as per their requirements and then back to normal after the motive is fulfilled.

Before diving deep into the modification and its process. Please refer to this [article](#) if you have any kind of difficulty in creating a DB Instance. Now, let's look at the step-by-step guide to modify an existing AWS RDS DB Instance.

Step 1: First of all, login into your AWS account, and then from the leftmost, click on the **services** tab, then from the drop-down list click on **RDS** service. The image is attached ahead for a much better understanding.



Step 2: Wait for the next screen to load, once it is done. From the navigation pane select the option **Database**. Refer to the image attached ahead.

The screenshot shows the AWS RDS console interface. At the top, there's a header bar with the AWS logo and the text "RDS · AWS Console". Below it is a navigation bar with links to "Apps", "Gmail", "YouTube", and "Dashboard". The main content area has a title "Amazon RDS" and a sidebar menu. The sidebar includes sections for "Databases", "Subnet groups", "Parameter groups", "Option groups", "Events", "Event subscriptions", "Recommendations", and "Certificate update". The "Databases" section is currently selected, indicated by an orange background. The main pane is currently empty, showing a large pink area.

https://ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1

Type here to search

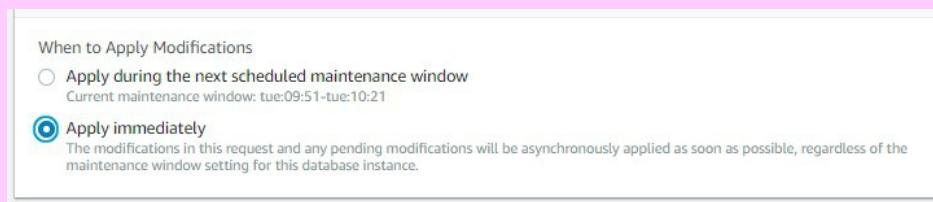
Step 3: In a while, the database console will load on the screen. Now, from the given list of pre-existing instances. Choose the instance you are willing to modify. The image to refer to is attached ahead.

The screenshot shows the "Databases" page within the AWS RDS console. The top navigation bar includes the AWS logo, "Services", a search bar, and a "Modify" button. The sidebar on the left is identical to the one in the previous screenshot. The main pane displays a table titled "Databases" with one row. The row contains a "DB identifier" column with the value "database-1", an "Instance" column with the value "MySQL Community", and an "Engine" column with the value "MySQL Community". There are also "Group resources" and "Modify" buttons at the top right of the table row.

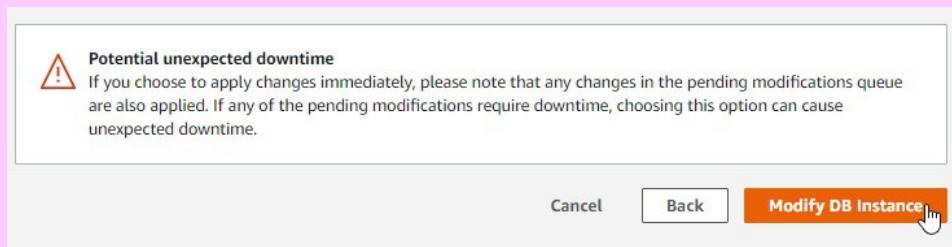
Step 4: Now, click on the **Modify** tab present on the top right. Refer to the for any query.

The screenshot shows the AWS RDS console. On the left, a sidebar menu includes options like Dashboard, Databases (which is selected), Query Editor, Performance Insights, Snapshots, Automated backups, Reserved instances, and Proxies. The main content area is titled 'Databases' and shows a list of databases. A single database, 'database-1', is listed with its details: Instance and Engine (MySQL Community). There are buttons for 'Group resources', 'Edit', and 'Modify' (the latter is circled in red).

Step 5: After the modification screen is loaded, alter everything you wanted to change as per your requirement. Once it is all according to you, then click on **Apply Immediately**. As allowing this will apply all the changes made you immediate. The image is attached ahead for reference.



Step 6: Once it's all done and you are sure about everything. Then click on **Modify DB Instance**. Refer to the image attached ahead.



In this way, we can simply **modify a pre-existing DB Instance** using the console. But if you are also an **AWS free tier account user**, then make sure you deleted all the instances you have created to ensure that you don't receive a bill. And if you just want your current instance to [reboot](#), follow the linked article.

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Amazon RDS Security & Compliance

- Difficulty Level : [Medium](#)
- Last Updated : [09 May, 2021](#)

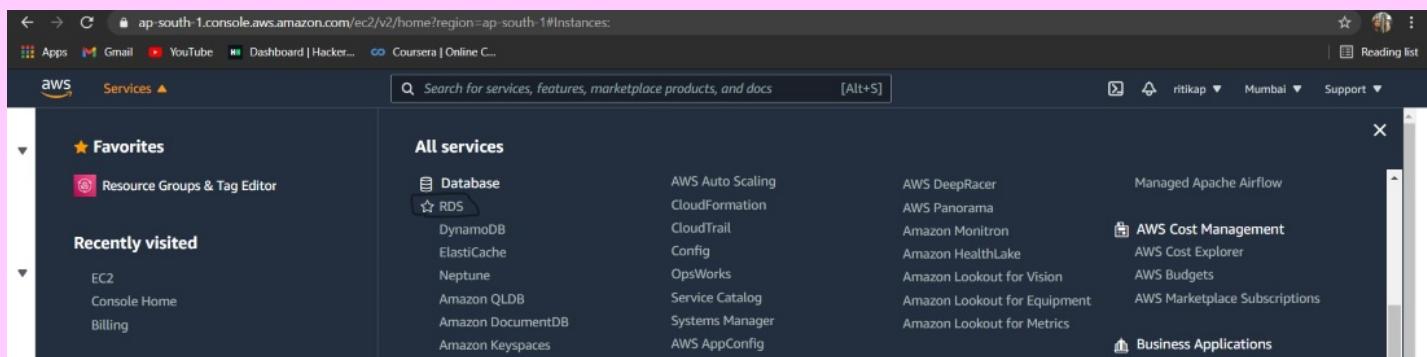
In this article, we will discover **Amazon RDS** or **Amazon Relational Database Service**. Amazon RDS is nothing but a cloud database, that typically runs on AWS or Amazon Web Services platform and access to the database is provided as-a-service. In simpler words we can state that RDS comes under PaaS i.e. (Platform as a service).

Benefits or Advantages

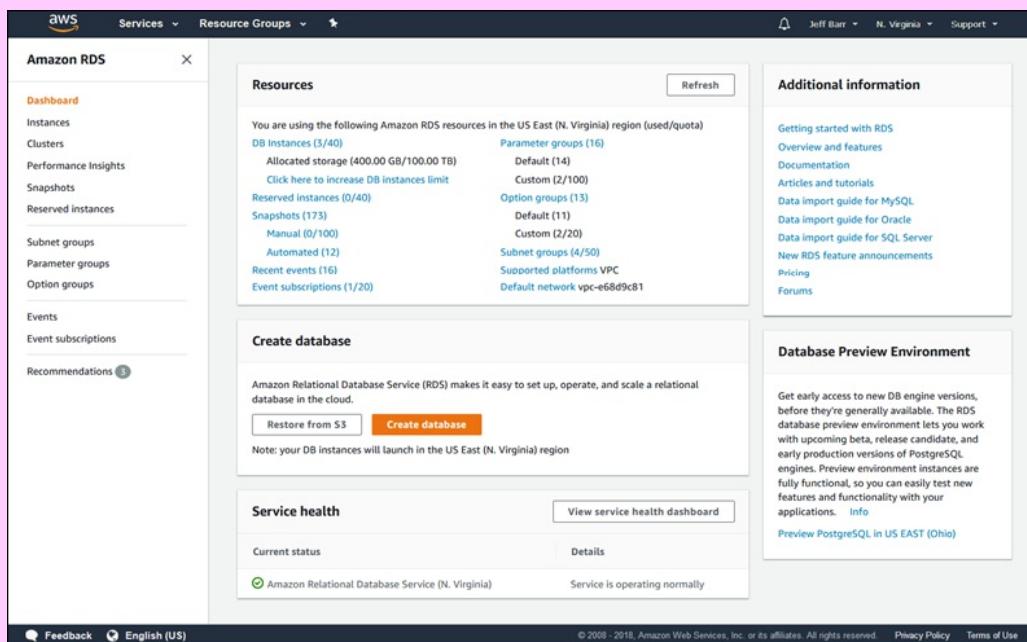
- Easier Management
- Higher scalability
- Available and durable in nature
- Faster and Securer
- Inexpensive

How to reach to amazon RDS management console?

Step 1: Login to your aws account and then on the left corner click services. There will be a bunch of options like this:



Step 2: After clicking on RDS a page like this will load on your screen.



In this way, one can easily create a database along with the numerous liberties of cloud database. For knowing more about [creating](#) a database on Amazon RDS, do give the linked article a read.

Amazon RDS- Compliance & Security

Managing such a humongous cloud platform is very difficult for AWS service providers. So, to simplify their command and control. They have also included **compliance programs** in the AWS platform.

basically refers to the process of learning from the feedback given by the users. These programs help the AWS service providers in meeting the demands of their users. There are multiple compliance programs initiated by AWS in different regions of the country. And these new discoveries are further tested by third party auditors in order to get an unbiased opinion, then based on this result it is decided whether the discovery should be certified and attested or not.

Huge companies like Netflix, LinkedIn are using multiple services of aws for their network of millions of users all over the globe. Thus, another major concern of AWS service providers is it\xe2\x80\x99s users **data security**. Since, everything is present online, data security is at a very high stake. As, we know AWS is a platform as a service. Hence, we are getting this extra layer of security (the platform itself) for protecting our data. But wait, what if the platform is not secure enough? In order to resolve this why, AWS has divided it\xe2\x80\x99s security setup into two sub categories. And these are discussed ahead.

1. Security of the platform (AWS CLOUD PLATFORM)

Ensuring the security of the whole platform is entirely AWS service provider\xe2\x80\x99s duty. In other words we can say that, ultimately AWS manages as well as protects the platform, so that all the services can run on it securely without any interruption. Also for periodical health checks of the cloud platform along with the services running on it, AWS hires third party auditors which regularly test and verify the productivity of our security model as it is the part of the AWS compliance program. These tests provide us a regular report about how secure our platform is. If something is found inappropriate, the security model alarms the service providers about it.

2. Security in the cloud (Your account)

Now, comes the part where the responsibility of security belongs to the users. Basically the users can be categorized into two types.

- **Root user**
- **IAM user or Identity and Access Management user.**

There can only be a single root user of any particular AWS account and IAM user can be multiple in numbers. By default, all the security concerns of an account reside in the hands of the root user. It depends on the root user whether to assign security related authorities to an IAM user or not. Root users can restrict access of any IAM user at any point of time as per their choices. We can use Amazon RDS encryption to make our Database Instances and [Snapshots](#) i.e. backups more secured. This encryption algorithm simply convert your data into an inaccessible format when other unauthorized users are trying to access it.

Amazon RDS- Security & Compliance gives us another firm reason to opt AWS as our go-to cloud platform for using all the desired services and databases flexibilities.

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Amazon Interview Experience for SDE-I | 1+ Years Experienced

- Difficulty Level :\nEasy
- Last Updated :\n20 Aug, 2021

I have applied through referral and I got an online coding test invite link after few days

Round 1(Online Coding Round): This happened on hackerrank platform and two questions were asked and questions were of medium leetcode range.

Round 2(Technical Round 1): This round happened on amazon chime platform and interviewer was SDE-II. In this round 2 coding questions were asked and you are expected to solve both of them with an optimal solution. They mostly focus on your problem-solving skills in this round. Below are the questions asked

1. Some linkedlist question of medium leetcode range
2. <https://practice.geeksforgeeks.org/problems/sort-an-array-of-0s-1s-and-2s4231/1>

Round 3(Technical Round 2): This round happened on amazon chime platform and interviewer was SDE-II. In this round 2 coding questions and few CS fundamentals were asked. They mostly focus on your problem-solving skills in this round. Below are the questions asked:

1. <https://practice.geeksforgeeks.org/problems/max-sum-without-adjacents2430/1>
2. <https://practice.geeksforgeeks.org/problems/next-permutation5226/1>

CS Fundamental Questions:

1. What is process?
2. Difference between process and thread?
3. What is thrashing?
4. What is normalization in database?\xc2\xab0
5. What is the best normal form?
6. What are procedures in database?
7. What are indexing?

Round 4(Hiring Manager): This round happened on amazon chime platform and interviewer was Sr. Software Development Manager. They focus on your leadership skills and problem-solving skills. It has happened as mentioned below

1. Asked few behavioral questions as below to check amazon leadership principles
 - Time when you went above and beyond your job responsibilities?
 - Received negative feedback from manager and how you responded?
 - Time when you failed to meet your commitment?
 - Tell me about a time when you innovated and exceeded the expectation?
 - Time when you went above and beyond your job responsibilities?
2. One DSA questions as below (<https://practice.geeksforgeeks.org/problems/missing-number-in-array1416/1>)

Round 5(Bar raiser round): This round happened on amazon chime platform with software development manager. They focus on your leadership principles and problem-solving skills. It has

happened as mentioned below.

1. Asked few behavioral questions\xc2\xa0

- Tell me how you learn a new technology?
- Time when you didn\xe2\x80\x99t meet a deadline?
- Tell me a time you took some risk?

2. A DSA questions as mentioned below (<https://www.geeksforgeeks.org/find-itinerary-from-a-given-list-of-tickets/>)

Finally, I got selected \xf0\x9f\x99\x82

My tips for behavioral questions:

1. <https://leetcode.com/discuss/interview-question/437082/Amazon-Behavioral-questions-or-Leadership-Principles-or-LP>
2. Above is the link where you can get all the list of the behavioral questions
3. Before hiring manager round go through all these questions and prepare answers well for the questions so that you wouldn\xe2\x80\x99t need to think regarding same during the interview. It helped me a lot\xc2\xxa0

All the best for your interviews.

Jao ab Phodo!(ichi padesi!)

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Amazon RDS |x80|x93 Rebooting a DB Instance

- Difficulty Level :[Medium](#)
- Last Updated :[01 May, 2021](#)

This article is a step by step guide for **Rebooting a DB Instance**. But before learning the process of rebooting an instance, we need to know about DB Instances and how to create one on AWS.

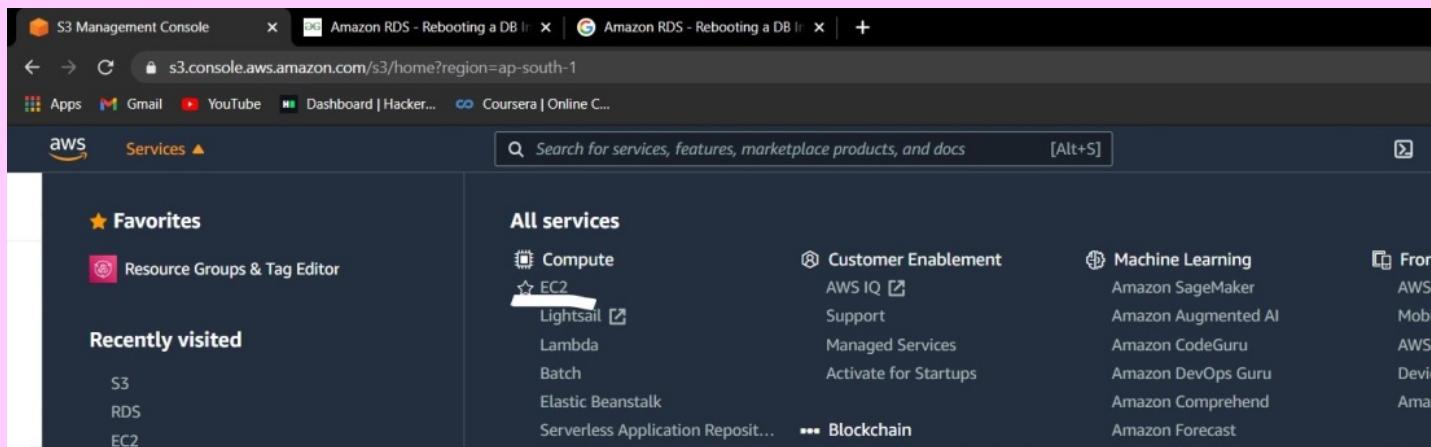
DB Instance or Database Instance

DB Instance is an obscure database dominion running on a cloud platform, here that platform is AWS. It is a cellular block of [Amazon RDS](#), it can also contain databases which are created by multiple users, and can be retrieved using the same tools, features and applications you usually use while accessing a standalone database instance. It is one of the simplest services present on the AWS cloud platform.

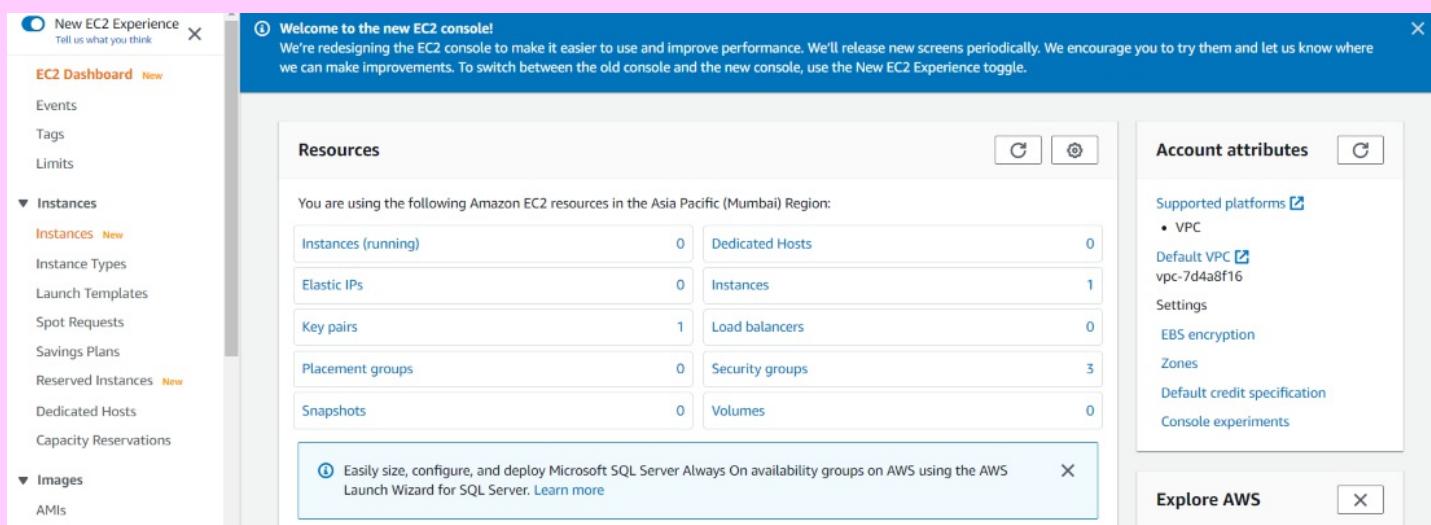
Note: DB Instances are region specific, i.e. if you wish to create an instance in a different region other than your default region. Then you must switch to your desired region first. And then proceed with the process of creating an instance.

Let's start with the process of creating an instance followed by rebooting it.

Step 1: Login to your aws account and click on `services` present on the leftmost part of aws management console. And from the drop down menu tap on `EC2`.



Step 2: EC2 console will be loaded on your screen. Once it is done, from the list of options on the left, click on `Instances`. Please refer to the image for better understanding.



Step 3: A fresh screen will be loaded. On which at the right corner there will be an orange box named as `Launch Instance`. Click on that.

Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

Launch instance ▾

Note: Your instances will launch in the US West (Oregon) Region

Step 4: The next screen will contain a bunch of options to choose your **AMI(Amazon Machine Image)** from. And horizontally, there is a 7-step procedure written to be followed for successfully launching an instance. I have chosen **Amazon Linux 2 AMI** as my AMI. And then Go ahead click **Next**. Refer to the image for resolving any confusions.

The screenshot shows the 'Choose an Amazon Machine Image (AMI)' step of the AWS Launch instance wizard. The 'Amazon Linux 2 AMI (HVM), SSD Volume Type' is selected and highlighted with a red circle. The wizard has 7 steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, 7. Review. A note at the bottom says 'Note: Your instances will launch in the US West (Oregon) Region'.

Step 5: Now comes the sub step 2 of creating the instance i.e. **Choose Instance Type**. I have chosen **t2.micro** as my instance type and then click **Next**. Refer to the image for better understanding.

The screenshot shows the 'Choose an Instance Type' page of the AWS Launch instance wizard. The 't2.micro' instance type is selected and highlighted with a red circle. The wizard has 7 steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, 7. Review. A note at the bottom says 'Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.'

Step 6: Next comes the sub step 3 of creating the instance, i.e. **Configure Instance**. Here we will confirm the configurations we need for our AMI. By default the configurations are filled, we just confirm them and click **Next** to proceed. Here's the image for better understanding.

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of Instances	<input type="text" value="1"/>	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-7d4a8f16 (default)	<input type="button" value="Create new VPC"/>
Subnet	No preference (default subnet in any Availability Zone)	<input type="button" value="Create new subnet"/>
Auto-assign Public IP	<input type="button" value="Use subnet setting (Enable)"/>	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	<input type="button" value="Open"/>	
Domain join directory	No directory	<input type="button" value="Create new directory"/>
IAM role	<input type="button" value="None"/>	
Shutdown behavior	<input type="button" value="Stop"/>	
Stop - Hibernate behavior	<input type="checkbox"/> Enable hibernation as an additional stop behavior	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

Step 7: Next comes the sub step 4 of creating the instance, i.e. **Add Storage**. Here we will look at the storage configurations and modify them as per our requirements. Then click **Next**.

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and Instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not Instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0b55bb79acf67ade6	<input type="text" value="8"/>	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	<input type="button" value="Not Encrypted"/>

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

Step 8: Next comes the sub step 5 of creating the instance, i.e. **Add Tags**. Here we will just click **Next** and proceed. Here's the image.

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum) | Value (256 characters maximum) | Instances (i) | Volumes (i) | Network Interfaces (i)

This resource currently has no tags

Choose the Add tag button or [click](#) to add a Name tag. Make sure your IAM policy includes permissions to create tags.

Add Tag (Up to 50 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

Step 9: Now we will complete next two sub steps which are **Configure Security Group** and **Review** together.

In Security Group, we have to give group name and description followed by ports to open and source.

In review, we will launch the instance and then a dialog box will appear to ask about **Key Pair**. We have two options to choose from, whether choosing an existing key pair or creating a new one and downloading it to launch.

Here are the images attached.

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: Create a new security group Select an existing security group

Security group name: launch-wizard-3

Description: launch-wizard-3 created 2021-04-23T18:38:13.743+05:30

Type (i)	Protocol (i)	Port Range (i)	Source (i)	Description (i)
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Add Rule

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Previous Review and Launch

IMAGE OF SECURITY GROUP

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair
Select a key pair

 I acknowledge that I have access to the selected private key file (fkeyp21.pem), and that without this file, I won't be able to log into my instance.

Launch Instances

IMAGE OF REVIEW

Now, finally the instance has been created from our end. In a while the instance will be appearing on the instances page.

Let's **Reboot the instance** we have created.

First select the instance you want to reboot. Then click on **Actions** and select **Reboot instance**. Image to understand more.

Instances (1/2) Info

Name	Instance ID	Instance state	Instance type	Status	Actions
m1	i-068fde72765630890	Terminated	t2.micro	-	Stop instance Start instance Reboot instance Hibernate instance Terminate instance
mymachine	i-099f0526e89f78875	Running	t2.micro	2	Actions

Instance: i-099f0526e89f78875 (mymachine)

Details Security Networking Storage Status checks Monitoring Tags

Instance summary Info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-099f0526e89f78875 (mymachine)	15.207.106.228 open address	172.31.36.139

Again confirm that you are sure you want to reboot and wait.

After a while the instance state will change to **Rebooting** from **Running**

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Amazon Interview Experience for SDE-1 | Off-Campus 2021

- Difficulty Level :\n[Medium](#)
- Last Updated :\n28 Jul, 2021

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Amazon RDS |x2|x80|x93 Creating an Amazon RDS DB Instance

- Last Updated :n01 May, 2021

Amazon Relational Database Service (Amazon RDS) is a relational database that is easier to set up, operate, and scale in the Cloud. It is cost-efficient, have resizable capacity for relational database and manages common database administration tasks. DB instance is the basic building block of Amazon RDS where we create our own databases. A DB instance is an isolated database environment in the AWS Cloud. Multiple user-created databases can be stored in a single DB instance. We can create and modify the DB instance by using the AWS CLI (Command Line Interface) , the Amazon RDS API, or the AWS Management Console.

Each DB instance requires a DB engine. Amazon RDS currently supports 5 engines which are MySQL, MariaDB, PostgreSQL, Oracle, and Microsoft SQL Server DB engines. Each DB engine has its own supported features and properties. Additionally, each DB engine has a set of parameters in a DB parameter group that control the behavior of the databases that it manages.

Steps to Create a Amazon RDS DB instance

AWS Console: Login into Amazon AWS Console and navigate to RDS Dashboard. Click on **create database** to create a database. See below image.

The screenshot shows the 'Databases' section of the RDS console. At the top, there are buttons for 'Group resources', 'Modify', 'Actions', 'Restore from S3', and a prominent orange 'Create database' button. Below this is a search bar labeled 'Filter databases'. The main area displays a table with columns for 'DB identifier', 'Role', 'Engine', 'Region & AZ', 'Size', and 'Status'. A message at the bottom center says 'No instances found'.

Creating Amazon RDS DB Instance :

- Chose the standard database creation method.

The screenshot shows the 'Create database' wizard. The first step, 'Choose a database creation method', is displayed. It offers two options: 'Standard create' (selected) and 'Easy create'. The 'Standard create' box contains the text: 'You set all of the configuration options, including ones for availability, security, backups, and maintenance.' The 'Easy create' box contains the text: 'Use recommended best-practice configurations. Some configuration options can be changed after the database is created.'

Creation Method

- Select any one of the given engine types. In this case we will select *MySQL* engine.

Engine options

Engine type [Info](#)

- Amazon Aurora

- MySQL

- PostgreSQL

- Oracle

- Microsoft SQL Server


- Select the version of the MySQL that you want to use.

Edition

MySQL Community

Known issues/limitations
Review the [Known issues/limitations](#)  to learn about potential compatibility issues with specific database versions.

Version

MySQL 8.0.20

Version of DB Engine

- Under templates section, we have three options :
 - Production
 - Dev/Test
 - Free Tier

Templates

Choose a sample template to meet your use case.

- Production
Use defaults for high availability and fast, consistent performance.
- Dev/Test
This instance is intended for development use outside of a production environment.
- Free tier
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS.
[Info](#)

Template Types

We will opt for free tier.

- Under the settings section of the database, provide instance name, say, geeksDemo and provide master username as admin and a password of your choice.

Settings

DB instance identifier [Info](#)
 Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

geeksDemo

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens (1 to 15 for SQL Server). First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Credentials Settings

Master username [Info](#)
 Type a login ID for the master user of your DB instance.

admin

1 to 16 alphanumeric characters. First character must be a letter

Auto generate a password
 Amazon RDS can generate a password for you, or you can specify your own password

Master password [Info](#)

Settings

- Select DB instance according to your needs. In free tier, by default, db.t2.micro will be chosen.

DB instance class

DB instance class [Info](#)
 Choose a DB instance class that meets your processing power and memory requirements. The DB instance class options below are limited to those supported by the engine you selected above.

Standard classes (includes m classes)
 Memory optimized classes (includes r and x classes)
 Burstable classes (includes t classes)

db.t2.micro
 1 vCPUs 1 GiB RAM Not EBS Optimized

Include previous generation classes

DB Instance

- Rest leave everything as default, and click on create databases. See below images:

Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user-initiated DB Snapshots.

[Learn more about AWS Free Tier.](#)

When your free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the [Amazon RDS Pricing page](#).

 You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services.

Cancel

Create database

 Successfully created database [geeksdemo](#)

RDS > Databases

Databases



Group resources



Modify

Act

 Filter databases



DB identifier



Role



Engine



geeksdemo

Instance

MySQL Community

In the above image, we see that a MySQL database named geeksdemo has been created.

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Amazon RDS |x80|x93 Deleting a DB Snapshot

- Difficulty Level :[Medium](#)
- Last Updated :[23 Apr, 2021](#)

As we all are aware of this new branch of [cloud computing](#) in the information technology(IT) sector. **AWS or Amazon Web Services** is one of the leading companies in this domain. AWS basically provides users on-demand cloud computing platforms to individuals, companies, and governments, on a paid subscription basis. There are unlimited resources available for the clients based on their run time demands. The best thing about this platform is that, the user has the maximum liberty.

For more detailed information about AWS and its architecture [read](#) here.

What is Amazon RDS?

Amazon RDS or Amazon Relational Database Service makes it easier to set up, operate, and scale a relational database in the cloud. It is nothing but a standard database along with some extra versatility due to the flexible architecture of the cloud.

It provides cost-efficient and resizable capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching, and backups. It frees you to focus on your applications so you can give them the fast performance, high availability, security, and compatibility they need.

Now, let's head towards the process of **Deleting a DB Snapshot**

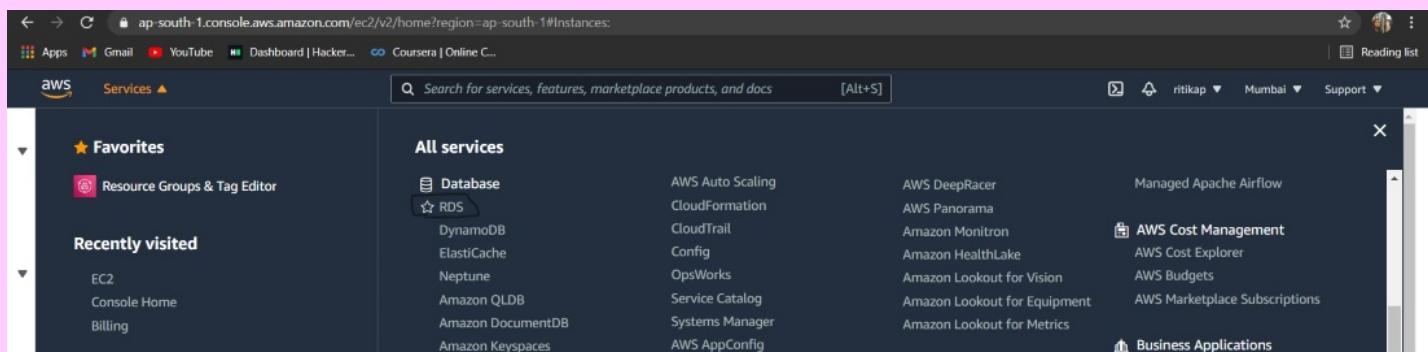
What is a DB Snapshot?

A database snapshot is an **automated read-only type backup** of database instance securely saved in amazon S3 for a user-specified period of time or by default it stays in the memory for 7 days.

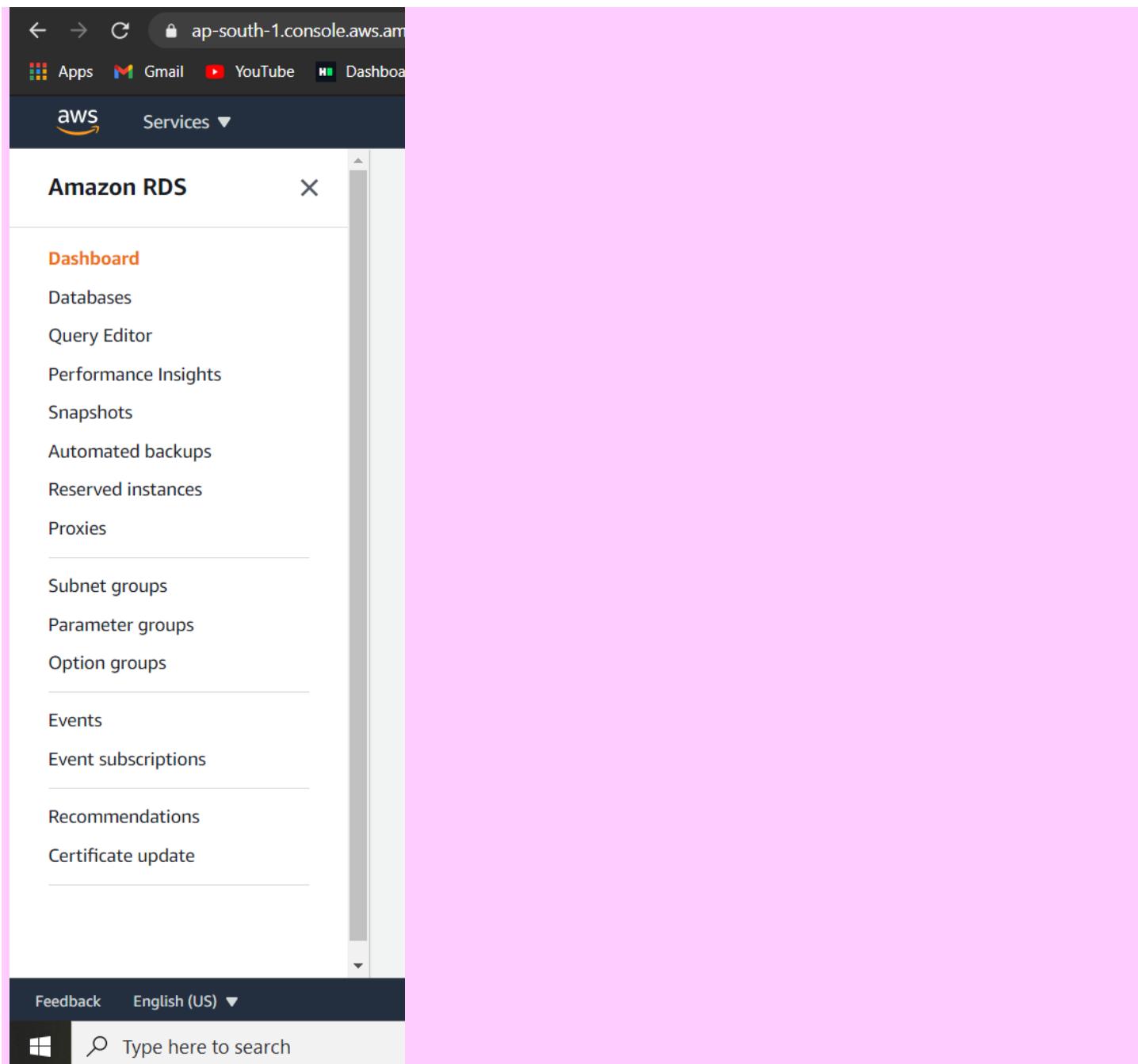
Let's look at the step-by-step procedure of deleting a DB Snapshot.

This article is directly jumping to the concept of deletion of snapshots, assuming that you already have databases created on your AWS account.

Step 1: First login to your account on the AWS (Amazon Web Service), as your main screen appears, then you have to go to the **services** section, and at the bottom, there is an option of the **database**, here we have the RDS amazon relation database services and then click on the **RDS**.



Step 2: Once the next page is loaded you'll see a list of options on the left as follows. Click on **snapshots**.



NOTE: Our ultimate goal is to delete a but we need to understand the difference between deleting a **snapshot** and an **instance**.

There are major two differences between deleting a snapshot and an instance.

1. We can delete multiple snapshots at a time by selecting them all together but multiple instances cannot be deleted like this. Each instance is deleted one by one.
2. While deleting an instance at the last step it asks the user whether to create the final snapshot or not? But while deleting a snapshot no such issue occurs. Thus, for deleting the final snapshot you need to delete the database and give permission to create the final snapshot.

Step 3: After clicking on snapshot an array of snapshots along with their names and other details are visible on the screen. Please refer to the image attached ahead.

Amazon RDS

RDS > Snapshots

Snapshots

Manual System Shared with me Public Backup service Exports in Amazon S3

Manual snapshots (1)

Filter manual snapshots

Snapshot name DB instance or cluster Snapshot creation time DB Instance cre

<input type="checkbox"/> manual-screenshots	database-1	-	April 21, 2021,
---	------------	---	-----------------

Actions Take snapshot

The screenshot shows the 'Snapshots' section of the Amazon RDS console. It lists one manual snapshot named 'manual-screenshots' for the database 'database-1'. The creation time is April 21, 2021, at 1:24:30 PM UTC. There are buttons for 'Actions' and 'Take snapshot'.

Step 4: Now, select the snapshot you want to delete and click on actions. From the drop-down list select Delete Snapshot option. Take reference from the image attached ahead.

Manual snapshots (2)

Filter manual snapshots

Snapshot name DB instance or cluster Snapshot creation time

<input type="checkbox"/> database-1-final-snapshot	database-1	-
<input checked="" type="checkbox"/> manual-screenshots	database-1	April 21, 2021, 1:24:30 PM UTC

Actions Take snapshot

Restore snapshot
Copy snapshot
Share snapshot
Migrate snapshot
Export to Amazon S3
Delete snapshot

The screenshot shows the 'Snapshots' section with two entries. The second entry, 'manual-screenshots', has a checked checkbox. The 'Actions' dropdown menu is open, and the 'Delete snapshot' option is highlighted.

Step 5: Wait for the next page to be loaded. Once loading is completed select delete option again. Please refer to the image for better understanding.

Manual snapshots

Filter manual snapshots

Snapshot name DB instance or cluster Snapshot creation time

<input type="checkbox"/> database-1	database-1	-
<input checked="" type="checkbox"/> manual-screenshots	database-1	April 21, 2021, 1:24:30 PM UTC

Delete manual-screenshots snapshot?

Are you sure you want to delete these DB snapshots

- manual-screenshots

Cancel Delete

The screenshot shows a confirmation dialog box titled 'Delete manual-screenshots snapshot?'. It asks if you're sure you want to delete the snapshot. Below the question, there's a list with a bullet point '• manual-screenshots'. At the bottom are 'Cancel' and 'Delete' buttons, with 'Delete' being highlighted.

Step 6: Your desired snapshot has been deleted. You can go back and verify whether it's present or not.

It may take a while in deleting the snapshot, depending upon the network and other simultaneously running processes on the cloud at that particular frame of time.

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Amazon Interview Experience for SDE-I (6 months Experienced)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n22 Aug, 2021

I got a mail from amazon as I was referred by someone(linkedIn connection) for SDE-1 role. It was totally unexpected referral for me. Me with my friends have already booked tickets to goa because I was not expecting any referral.\xc2\x00

Recruiter sent me the coding test just one week before goa trip, where I have to write code as well as approach and time and space complexity :

1. <https://practice.geeksforgeeks.org/problems/minimum-cost-of-ropes-1587115620/1>. Solved using min heap.
2. <https://aonecode.com/amazon-online-assessment-qa2-optimize-memory-usage> . Solved using 2 pointer approach, and mentioned binary search approach also.

After passing all the test cases for both of the questions, I was expecting an interview call so I took laptop also with me to goa. I enjoyed first 4 days in goa, on 5th day, Friday , there were three rounds on Amazon Chime

Interview Round 1(Hiring Manager Round): First 40 minutes, we discussed my current company work, university projects, some behavioral questions like conflict with manager, conflict with colleagues etc.

Then he asked some tech questions

1. Difference between REST and SOAP APIs
2. Producer consumer problem
3. What is virtual memory
4. What is garbage collector, thread vs process.

I answered all the questions.

After First round Lan/WiFi of my Villa stopped working, so I went to the nearest Bar+Restaurant because Bar\xe2\x80\x99s Wi-Fi was working fine.

Interview Round 2(DS/Algo Round): Taken by SDE-1

In first 10-15 minutes He asked my current company\xe2\x80\x99s work and some behavioral questions. Then he jumped to coding problems

1. <https://practice.geeksforgeeks.org/problems/level-order-traversal-in-spiral-form/1> .I gave two approaches one is using 2 stacks and another is using one deque. I was asked to write code for 2 stack approach.
2. <https://www.geeksforgeeks.org/value-to-be-subtracted-from-array-elements-to-make-sum-of-all-elements-equals-k/> \xc2\x00.I was told to write a production ready code for all scenarios, solved this problem using binary search approach

Interview Round 3(DS/Algo round): Taken by SDE-2

My villa\xe2\x80\x99s wifi started working fine for this round.

Interviewer asked me about my day, I told him that I gave second round sitting in a bar, he started laughing and appreciated my spirit. After a short introduction he jumped straight to the coding questions:

1. <https://www.geeksforgeeks.org/check-if-array-can-be-sorted-with-one-swap/>. First I gave a $O(n \times c^2 \times b^2)$ approach he told me to do it in $O(n)$. I gave a quick approach, but it was failing for some cases, after 5-6 minutes of interactive discussion, I finally gave an approach, and it was working fine for all the cases. He told me to write a production ready code with meaningful variable and function names.
2. <https://practice.geeksforgeeks.org/problems/snake-and-ladder-problem4816/1>. First I told him that it can be solved using DFS or BFS. He told me to solve it using DFS. After trying for sometime I realized using DFS it is falling in $\times e^2 \times 88 \times 9e$ loop, I tried for 10 minutes but couldn't solve this using DFS. Then after 5 minutes of interactive discussion he told me that it can be solved using BFS.

Next day I returned to my home from goa. after not able to solve snake and ladder problem completely in last round ,I was not expecting next round interview call, but fortunately I was contacted by a recruiter that there is a final round after 5 days.

Interview Round 4(DS/Algo Round): Taken by SDE-2

1. Interviewer was 10 min late, and He was the same guy who referred me for this role. After a small discussion he asked me some behavioral questions related to my university projects and current company work, I tried to explain him my current company work that how I am working on **Single Sign On /OIDC protocol** . But couldn't explain him perfectly.
2. Then he went through my resume and as I am 5* on Codechef, He asked me the most challenging problem I have solved on Codechef, at the time I was completely blank, then I told him about this(<https://practice.geeksforgeeks.org/problems/allocate-minimum-number-of-pages0937/1>) problem that because of the Codechef I came to know that this can be solved using binary search instead of DP.
3. Then He asked me to Write code for following problem:
<https://www.geeksforgeeks.org/palindrome-partitioning-dp-17/>
4. I wrote the code using this (<https://practice.geeksforgeeks.org/problems/palindromic-partitioning4845/1>) $O(n \times c^2 \times b^2)$ approach.

Result : Not Selected???? , technically I was good but was not best fit according to amazon leadership principles.

Hope this will help others. All the best !!! be Prepared for Leadership Principles.

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Amazon Interview Experience for SDE-II (Virtual Rounds)

- Difficulty Level :[Hard](#)
- Last Updated :[22 Aug, 2021](#)

I got a call from an Amazon recruiter as I was referred by one of my friends for the role. She sent me the coding test link which I had to complete within a week. Once I completed the test, I got a call to schedule the interviews in two weeks. 3 interviews were held on Amazon Chime as per schedule. Post that after 4-5 days, the hr informed me that they would like to proceed with the final bar raiser round, which happened in a couple of days. Following are the questions that were asked:

Online Round (Coding Test |x80|x93 90 mins)

1. We are given the costs of a list of pants, shirts, shoes, skirts. We have a certain amount of cash with us, we need to determine the total number of possible combinations which we can buy given that we must buy **one and only one** of each type.

Eg: pants=[3, 5, 7], shirts = [4, 7, 8],
 skirts = [5, 8], shoes = [3], budget = 25

So in the above e.g., apart from the combination [7, 8, 8, 3], all others are possible.

Hint: Since we have to buy all, we can combine the first two lists and the last two lists, so we would have cost lists like pants_shirts = [|x80|xa6] and |xc2|xa0

skirts_shoes = [|x80|xa6], now we can just iterate over one list and binary search the remaining amount over the other list and add accordingly.

2. It was quite trivial so don't remember exactly.

Round 1:

The interviewer gave his introduction, asked me a bit on the kind of projects I've worked on. Then he started with a data structure problem.

1. Given a binary tree with the following TreeNode, create a copy of the tree without using any extra space.

```
TreeNode{ \r\n        left*, right*, random*, val \r\n    }
```

My solution: I first told a hashmap solution where I would maintain a mapping from the original node to the copy node in the new tree, and in the second traversal, I would be able to assign the random pointers as well. The interviewer agreed that this would work, but he wanted me to do this without the hashmap. It took me around 15-20 more mins to come up with the final code. I first appended the duplicate node to the left child of the original node something like:

```
A           A\r\n          B           C   ->   A\'     C   \r\n
```

This way on iterating over the original nodes, we can assign the left and right pointers, and we need one more traversal to assign the random pointer.

2. We are given N solar systems, each solar system with M planets. We can move to any other planet of the same solar system in 1 light year. We can move from Mth planet of Kth solar system to 1st planet of (K + 1)th solar system in 1 light year. Apart from this we are also given a list of wormholes, where each wormhole specifies the entry planet and exit planet. Passing through a wormhole would also take 1 light year.

Now given the X-starting planet, and Y-destination planet, we need to find the minimum number of light-years that we would take to travel.

My Solution: I told him that I would create a graph(which was quite a ridiculous suggestion tbh :p) and then do bfs. He asked the time complexity of creating a graph and then applying my approach. Complexity was pretty bad, so I moved to a new solution. I suggested starting from X, add all the neighbouring planets at a distance 1 and if any wormholes are present from the planet and do bfs on the fly without creating graph. Since the time was less(as I had spent around 35-40 mins in the first question), I just coded a level-wise bfs and the interviewer seemed convinced.

Round 2:

1. This was taken by an engineering manager who asked me regarding my projects for around 10-15 mins and then we moved to a system design problem. He asked me to design Slack messenger.

I started by listing the functional and non-functional requirements(on which he questioned me a bit), then I moved to draw the high-level architecture. The components which I drew were the clients, gateway service(LB + authentication, etc), Messaging Service, User Service, Web Socket Manager service, Fan Out service(I added this for the group messages thing, but he didn't interrogate much on that).

He asked me what would be the schema of my messages table and the scenarios in which the recipient user is online/offline. Also asked about the partitioning key and primary key of the 2-3 tables which I had made.

Round 3:

1. This was taken by an SDE III guy, who again asked me about my projects for like 10 mins and then moved on to a low level design question. He asked me to design the HackerRank platform.

Again I started with listing down the usecases which I would cover, the interviewer asked me to write all the APIs which I would need to expose.

I made various classes like Question(subclassed into MCQ and CodingQuestion), Answer, Candidate, Test, QuestionBank, etc.

Surprisingly(since this was an LLD round) he asked me the schema of the tables and which SQL/NoSQL would I choose and why. Then he asked me the case when the question gets changed, I couldn't answer that, later he mentioned that he was expecting something like and EditHistory inside each Test Entity.

Round 4(Bar Raiser):

This was again taken by an engineering manager who discussed my projects in depth for around 20-25 mins. In the remaining time he asked me 2 dsa questions. (Yes I too was surprised that he didn't ask anything regarding design).

1. Given a list of strings, group the anagrams together. (<https://practice.geeksforgeeks.org/problems/print-anagrams-together/1>)
2. Given two linked list L1 and L2 where head of the linked list points to the most significant digit, return a the linked list creating after subtracting these two lists. (<https://practice.geeksforgeeks.org/problems/subtraction-in-linked-list/1>)

NOTE:

1. In almost all the rounds, I was asked questions related to Amazon Leadership principles, so do make sure you go through those before sitting for the interview process. You can refer to this link(<https://kraftshala.com/what-questions-to-expect-in-amazon-interview/>) for practicing the same, I found it useful.
2. In the design rounds, interviewer doesn't expect the most ideal answer from you and unless your choice of technology is outrageously wrong, he won't pinpoint that.

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Amazon Interview Experience for Programmer Analyst

- Last Updated : \n 25 Mar, 2021

I recently gave an interview for a programmer analyst role at Amazon. \xc2\x80

Round 1(Online Test): Two questions I cannot recollect exactly what they were, but they were surely in medium to the hard range.

All the rounds from the 2nd-4th round were conducted on Amazon Chime. Each round was about 1 hour. \xc2\x80

Round 2(Technical Interview):

1. The interviewer gave me a piece of code with switch statements and asked me to discuss what the code was intended for and fix the bugs.
2. Tell me about your project.
3. Write a logic to see if you can accommodate all the even numbers in the array at even indices. Print Yes/No accordingly.

Round 3(Technical + Behavioral):

1. Tell me about a time when you were given feedback, and you did something to improve on it.
2. Left View of a binary tree.
3. Tell me about a time when you convinced someone to make something that only you\xe2\x80\x99ve wanted to do.
4. Paint fill problem, I gave DFS approach, but the interviewer was looking for an optimized approach. He gave me several hints to use BFS but I couldn\xe2\x80\x99t catch them :/ But finally when I said we can use a queue the time was up:)

Round 4(Technical):

1. The interviewer asked me about my projects. Please explain everything in detail, as much as you can during that time.
2. Find the second largest element in an array(sorting not allowed).
3. Check if one string is a rotation of another.

Tips:

1. Be calm and do not rush during the interview, take time and ask more questions for clarity, the interviewers are very happy to help.
2. Please explain your approach clearly (Do it with confidence) and then move on to code.
3. And at the end of the interview, when the interviewer finally asks do you have any questions for me? \xc2\x80I would say go ahead and ask a few appropriate questions, this creates a conversation and interviewers will feel good that you\xe2\x80\x99re curious about things.

Overall, it was a great experience and I would like to thank GeeksforGeeks for providing a platform to share my experience. Hope this article helped you with your preparation. Good Luck \xf0\x9f\x99\x82

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Amazon Interview Experience for SDE-2

- Difficulty Level :\nHard
- Last Updated :\n22 Mar, 2021

Recently I was interviewed by Amazon for SDE-2, here is my experience.\xc2\xab0

Current Status: 3.5 YOE with the product-based company.

Online Assessment:

105 minutes including 2 coding questions and a section to explain the approach and time and space complexity.

1. Similar to <https://leetcode.com/problems/maximum-area-of-a-piece-of-cake-after-horizontal-and-vertical-cuts/>
2. Similar to <https://aonecode.com/amazon-online-assessment-algorithm-swap>.

After the coding section, there was a section for behavioral questions.

Onsite:

Round 1: (1.5 hours)

Two LP questions.

1. Based on Have Backbone; Disagree and Commit principle
2. Based on Are Right, A Lot of principles.

System Design.

1. Design a bulk update records/files kind of API for a client.

Round 2 (1.5 hours)

Two LP questions.

1. Based on Customer Obsession.
2. Did not remember exactly.

Two Coding questions:

1. Similar to <https://www.geeksforgeeks.org/minimum-cost-to-merge-all-elements-of-list/>
2. Based on the Interval tree.

The further rounds were based on the performance of the first two rounds. I was not able to clear those, so didn't have any more rounds.

\xc2\xab0Hope this will help others. All the best !!!

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Amazon Interview Experience for SDE-1 | 7 Months Experienced

- Difficulty Level : \nHard
 - Last Updated : \n22 Aug, 2021

Online Round:

1. Question-related to the priority queue
 2. Simple Ad Hoc question

Round 1(Chime Interview): Taken by SDE 2 (1 hour, 15 mins)

1. There are N bubbles in an array. A bubble with a positive value means it's moving towards the right and has a mass of absolute value of $A[i]$. Similar to a negative value, it's moving towards the left with a mass of absolute $A[i]$. On the collision of any two bubbles, the bubble with lesser mass vanishes. If the mass of colliding bubble is the same, both of them vanish.
Given an array, print the resultant array after all the collision happens.
 2. [Find an element in rotated sorted array](#).
 3. Theoretical questions from OS, OOPS, and Computer Networks.
 4. Why do you prefer C++, which is faster, C++ or Java?

Round 2(Chime Interview): Taken by SDE 2 (1 hour)

- Given a string as an input perform Q queries of the following type:
 - 1 1 char $\backslashxe2\backslashx80\backslashx93$ Insert char at the front of the string
 - 1 2 char $\backslashxe2\backslashx80\backslashx93$ Insert char at the end of the string
 - 2 $\backslashxe2\backslashx80\backslashx93$ Reverse the stringHad to print the final string after Q queries.
 - <https://practice.geeksforgeeks.org/problems/next-permutation5226/1>
 - Discussion about my past projects

Round 3(Chime Interview): Taken by Software Manager (1 hour)

1. <https://practice.geeksforgeeks.org/problems/generate-all-possible-parentheses/1>
 2. <https://practice.geeksforgeeks.org/problems/length-of-the-longest-substring3036/1>
 3. Why Amazon, Why leaving current organization in 6 months, What do you bring to the table?
 4. Discussion about my projects.

Round 4(Chime Interview): Taken by Software Manager (45 mins)

1. Discussion about my projects.
 2. Leadership/Behavioral questions.
 3. Given N queries of type :

C \xe2\x80\x93 Create a folder with the smallest missing positive integer starting from 1.

While answering any coding question, firstly you need to tell your approach. Support your approach with some test cases so that it's easy to convey.

Secondly, they want to code for all questions. Make your code is free from all the bugs, and you have covered all the corner cases. Try to convey what you are writing, why particular Data Structure etc while you write your code. If time permits, dry run your code in your head first then explain it to them. If stuck, don't be nervous, they will provide you with hints.

Verdict: Selected \xf0\x9f\x99\x82\xc2\xa0

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Amazon Interview Experience for SDE-2

- Difficulty Level :\nBasic
- Last Updated :\n22 Mar, 2021

Two Coding Rounds were held.

Round 1:

1. Given a 2D integer matrix of size ($m \times n$). Calculate the sum of the submatrix of size ($a \times b$), where $a < m$ and $b < n$.
 $\sum_{i=a}^{a+b} \sum_{j=c}^{c+d} A[i][j]$

Now you are given n -queries for the same. Solve it in $O(N)$.

Solution: <https://www.geeksforgeeks.org/submatrix-sum-queries/>

After this, some project-related questions were asked.

Round 2:

1. Project Description.
2. Some behavioral questions.
3. Calculate max area of Island.

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Amazon Interview Experience (Onsite)

- Difficulty Level :\nExpert
- Last Updated :\n09 Mar, 2021

I had 4 interviews in Amazon Chime. Each one was 55 mins, the first 30 mins were about behavior questions(2-3) and only 25 mins for technical.

Technical:\xc2\xa0

1. Given pattern (ex: \xe2\x80\x9cShC\xe2\x80\x9d) and dictionary:

```
"ShipClass", "SchoolClass", "Traeler", "Class"\r\nReturn list of strings matching this patern like:\r\nShC -> "ShipClas
```

2. Design Twitter
3. Oop: design FileFinder
4. Given a social network and 2 people, find the shortest friends path between them

Behaviors:

1. The time when you fail commitment,
2. The time when measuring customer experience
3. The time when you got bad feedback from your manager
4. The time when you help a teammate
5. The time when you innovate something
6. The time when you pushing your idea
7. The time when your idea was rejected

Tips:\xc2\xa0

1. Behavior questions take lots of time, and it\x99s very important to have different prepared stories for them. You can use same story for different questions if you can show the required aspect.
2. On the technical part, the most important thing is the idea, because you have only 25 mins.\xc2\xa0
3. You will not have a compiler, so small mistakes in syntax are not so important.
4. You should write clean code, but always ask the recruiter if he wants you to implement methods or not. It will help you to save time and focus on important parts.

Good luck!

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Amazon Interview Experience

- Difficulty Level :[nEasy](#)
- Last Updated :[n22 Aug, 2021](#)

Hello Coders, This is my Interview Experience for the position of SDE1 at Amazon (2019).

Round 1 (Online Round): 2 Coding Questions and 28 MCQ\xe2\x80\x99s

1. Let 1 represent \xe2\x80\x98A\xe2\x80\x99, 2 represents \xe2\x80\x98B\xe2\x80\x99, etc. Given a digit sequence, count the number of possible decodings of the given digit sequence. (<https://practice.geeksforgeeks.org/problems/total-decoding-messages1235/1>)
2. Given Equation for num1, num2, and X in the form of a string, and you have to find the value of X in the string.

Ex- String is 100000+200000=X\r\nX will be 300000\r\nString is 100000+X=500000\r\nX will be 400000

I Solved both the coding Questions.

Be prepared with all pointer concepts and how to return the char string, etc.

Round 2 (Algorithm Round): I was told to introduce myself. Then he directly went on to the question. The question was :

1. Given a square chessboard of N \xc3\x97 N size, the position of the Knight and the destination are given. You need to find out the minimum steps a Knight will take to reach the Destination and print the path for the same. (<https://practice.geeksforgeeks.org/problems/steps-by-knight5927/1>)

Initially, they give me a basic BFS solution that looks at all 8 K Knight modes that will take O (N \xc3\x97 N) Time.

I was told that I had done well in the code as a wise decision-maker. I don\xe2\x80\x99t know what the interviewer was expecting. I was thinking of the A * Search Algorithm that discarded a particular combination but lost the solution (meaning it comes close to the solution in a very short time, used by Google Maps).

I did not expect to qualify for this cycle. But luckily I was called to the next round.

Round 3 (Algorithm Round): The interviewer was very chill. In the beginning, I introduced myself to her, and then she introduced herself. I was supposed to give a brief description of any one of my Project(10 min).

1. Given a linked list, write a function to reverse every k node. (<https://practice.geeksforgeeks.org/problems/reverse-a-linked-list-in-groups-of-given-size/1>)
2. Given a Binary Tree, find the deepest leaf node that is left child of its parent. (<https://www.geeksforgeeks.org/deepest-left-leaf-node-in-a-binary-tree/>)

Round 4 (Fundamental + Algorithm): Initially, I introduced myself. The interviewer was very calm. He asked me about my Subjects. Then the fundamental knowledge was checked in depth. Ex-

- Paging / Virtual Memory
- CPU Scheduling Algorithm
- Deadlock / Semaphore / Critical Section
- Working of OSI Layers(CN)
- What happens if I type \xe2\x80\x98google.com\xe2\x80\x99 as URL. Explain the whole process.

Round 5 (Tech Round): The person you were interviewing was very knowledgeable. First I introduced myself. I was told to describe any of my projects, and he told me how he would improve the project now.

He then asked me one question of the tree \xe2\x80\x93 I was shaking my head, and I was just smiling, my interviewer thought I knew the question and asked me if I knew the question or not, and I said yes (even the question was unfamiliar but don\xe2\x80\x99t do this I was lucky at the time

Then he swapped the question. And asked this \xe2\x80\x93

1. <https://www.geeksforgeeks.org/check-whether-the-two-binary-search-trees-are-identical-or-not/>

I was supposed to just tell the Algorithm orally. Then he asked me about my interests.

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Amazon Interview Experience

- Difficulty Level :[nEasy](#)
- Last Updated :[n08 Mar, 2021](#)

Hello Coders, This is my Interview Experience for the position of SDE1 at Amazon (2019).

Round 1(Online Round): 2 Coding Questions and 28 MCQ\xe2\x80\x99s

1. Let 1 represent \xe2\x80\x98A\xe2\x80\x99, 2 represents \xe2\x80\x98B\xe2\x80\x99, etc. Given a digit sequence, count the number of possible decodings of the given digit sequence. (<https://www.geeksforgeeks.org/count-possible-decodings-given-digit-sequence/>)
2. Given Equation for num1, num2, and X in the form of a string, and you have to find the value of X in the string.

Ex: String is 100000+200000=X\r\nX will be 300000\r\nString is 100000+X=500000\r\nX will be 400000

I Solved both the coding Questions.

\xc2\x0Be prepared with all pointer concepts and how to return the char string, etc.

Round 2(Algorithm Round): I was told to introduce myself. Then he directly went on to the question. The question was :\xc2\x0a

1. Given a square chessboard of N x N size, the position of Knight and the destination is given. you need to find out the minimum steps a Knight will take to reach the Destination and print the path for the same. (<https://www.geeksforgeeks.org/minimum-steps-reach-target-knight/>)

Initially, they give me a basic BFS solution that looks at all 8 K Knight modes that will take O (N * N) Time.

I was told that I had done well in the code as a wise decision maker. I don\xe2\x80\x99t know what the interviewer was expecting. I was thinking of the A * Search Algorithm that discarded a particular combination but lost the solution (meaning it comes close to the solution in a very short time, used by Google Maps).

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Round 4(Fundamental + Algorithm): Initially, I introduced myself. The interviewer was very calm. He asked me about my Subjects. Then the fundamental knowledge was checked in depth. Ex-

- Paging / Virtual Memory
- CPU Scheduling Algorithm
- Deadlock / Semaphore / Critical Section
- Working of OSI Layers(CN)
- What happens if I type \xe2\x80\x98google.com\xe2\x80\x99 as URL. Explain the whole process.

Round 5(Tech Round): The interviewer was a highly experienced person. Firstly I introduced myself. I was told to explain any one of my projects, and he told me that how will you improve the same project now.

Then he asked one tree question \xe2\x80\x94 I was feeling headache, and I was just smiling, the interviewer thought that I was familiar with this question and asked me that whether I am familiar with the question or not, and I said yes(even the question was not familiar to me but don\xe2\x80\x99t this I was lucky at that time)

Then he swapped the question. And asked this \xe2\x80\x94

1. <https://www.geeksforgeeks.org/check-whether-the-two-binary-search-trees-are-identical-or-not/>

I was supposed to just tell the Algorithm orally. Then he asked me about my interests.

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Amazon Interview Experience for SDE Internship (Pool-Campus)

- Difficulty Level :\nMedium
- Last Updated :\n18 Feb, 2021

Amazon conducted a recruitment drive for a group of Colleges.

The process consisted of 3 rounds: One Online Test followed by 2 Technical Interview Rounds.

Online Test:

It consisted of 4 sections:

- **Debugging:** It consisted of 7 Questions, having small code snippets, provided with a problem statement and expected output. One should modify the minimum number of statements possible so that the code solves the given problem and passes all the test cases.
 - **Coding:** Consisted of 2 medium level questions. One based on Maps, and other on Graphs.
1. <https://leetcode.com/discuss/interview-question/373006>
 2. <https://leetcode.com/discuss/interview-question/868371/amazon-oa-critical-connections>
- **Behavioral Section:** This section consists of questions that majorly focus on your personality and behavior.
 - **Logical Reasoning:** Aptitude questions, also focusing on Verbal ability.

I received the test results after a month. The interviews were then scheduled.

Technical Interview 1: (60 mins)

Generally, they ask 2 coding questions in this interview, but based on the question and time allotted, they can also ask you just a single question. So give your best shot right from the beginning.

The interviewer firstly introduced himself, and then asked me to do the same. After introduction we directly jumped into coding. They provide you with a Live Code platform.

- <https://www.geeksforgeeks.org/boggle-find-possible-words-board-characters/> \xc2\xab0
\xc2\xab0 (**with minor twists**)

So, this was a traversal based question, that can be solved either using BFS/DFS traversal or Trie Data structure (optimal solution). I initially began with trying out the DFS traversal. The interviewer then asked me to optimize it. Then I discussed the solution using Trie data structure. The interviewer seemed satisfied, and then asked me to code the solution.

The discussion went really well and coding the solution took some time. We had over-shot the allotted time so I didn't get a chance to ask any questions to the Interviewer.\xc2\xab0

After 3-4 hours, I got a call from the HR, stating that I have my 2nd interview scheduled in the next 15-20 mins.

Technical Interview 2: (60 mins)

The interview began in the same way as the previous one, with introduction from both sides. I was then asked to brief about any one of my projects. After this, we began with the coding part.

- <https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/> : This required a slight variation of Binary search algorithm. I, as usual began with a brute force approach. After, that the interviewer wanted an optimized approach. I tried out some recursive solution using modification of binary search but that didn't work well. Later on after many hints from the interviewer I was able to solve the question.

\xa0

- <https://www.geeksforgeeks.org/print-left-view-binary-tree/> : This was also a slight variation of BFS traversal on a tree. To begin with, I discussed the solution first and then the interviewer asked me to code it.

Then the interviewer asked me if I had any questions for him, after which the round ended.

Final Verdict: REJECTED

I think I took a lot of hints from the interviewer on the first question, that led to me being rejected.\xa0

Important Take-aways:

Sometimes, if we fail at our first try, we should look at problems from a wider perspective, as a fresh problem. That would surely help.

Keep on conversing with the interviewer. He'll surely help you in finding the right way. Just listen to them carefully.

Try tracing out sample inputs before confirming the solution.

And lastly, All the Best for your interviews. Stay calm and composed. Give your Best Shot right from the beginning.

Always remember, **What defines us is how well we RISE after Falling.** Everything else, is just a part of our LIFE.

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Amazon Interview Experience for Devops/Support Engineer (5 Years Experienced)

- Last Updated :n17 Feb, 2021

Applied through Referral for Bangalore location. All rounds happened over amazon chime(virtually) due to covid-19. The entire process took 2months-1month to get a call and then next month interviews+offer rollout. Was interviewed in December 2020.

Round 1(Hiring Manager round): Supposed to be second round but was rescheduled. Brief introduction followed by behavioral questions(on leadership principles).

1. Tell me a situation where you had to convince your client and how did you persuade him to agree to you.
2. What do you think of operational excellence?
3. What would you do if the delivery cannot be done before the deadline due to incomplete features?
4. Tell me a situation where you had a conflict of interests with your co-worker and how you dealt with it
5. Tell me of a situation where you achieved a way beyond your bar. How you can improve that task further?

And few more scenario-based questions.

Tip for this Round: Don't bluff. Relate each leadership principle to your past work and answer. Think of how your work could impact the company/customer and answer from that perspective. Only if you have really worked/shown those leadership principles in the past, you can crack this round.

Round 2 (Mostly on Linux fundamentals): Brief introduction followed by a question on one of my previous tasks

1. Explain your latest automation. Entire task and how you contributed to it from scratch.
2. How can you improve that automation now?
3. Few Linux questions-processing a log file and fetching for few error codes from debugging prints. Can be solved using cat and sed.
4. Write a shell script for tasks performed in (c) I wrote a simple for loop command. The interviewer was impressed.
5. Discussion on how to debug disk space issue in Linux
6. Write a shell script to generate a report on 10 top space-consuming workspaces (folders) with consumption details again a simple for loop with df & du commands.

Round 3 (Python coding- Any language you can choose): Brief introduction followed by questions

Array of numbers could be either in increasing order or decreasing order or increasing then decreasing order or vice-versa. Print the type of array based on this order.

Example-if array is [1,2,3,4,3,2,1] output should be \r\n"increasing-decreasing"\r\nExpected time complexity-O(1)

Solution: Compare first and second elements. The same way compares the last 2 numbers in an array. Then decide what type of array it is based on these 2 results.

Few leadership questions like what were previous achievements and how it impacted business etc.

Round 4 (Debugging Round Mostly on Linux): Brief introduction followed by questions

Questions on file processing, solutions involved a cat, sed, awk, tail, head, grep -B, sort, unique, etc

How would you debug if there is an issue with API output -> Discuss all the scenarios ranging from network connectivity to data in DB from where API fetches its data.

Round 5 (Bar Raiser round): Final round which will be scheduled only if you clear the previous 4 rounds. Brief introduction followed by following behavioral questions

How have you dealt with ambiguous data in your tasks.

Failure in your task and what you have learned out of it. How can you improve it now

Task where u showed your ownership and how you could have improved in your WoW now.

A Task where you improved the lives of your colleagues/team

And few more behavioral questions which were similar to what was asked in the hiring manager round(Both of them were stressing different leadership principles)

By God's grace, next day got a call from the recruiter that I am selected and package negotiation had started. Within a week, the offer was rolled out.

Tip for Amazon interview: Each round is based on 2-3 Leadership principles, and you are expected to raise the bar in a few of them. They will not ask on what technology you have worked for but any behavioral question should be answered technically highlighting how efficiently you have contributed to the team/customer. Be ready to explain how you have crossed your responsibilities to work across teams for your tasks. You cannot bluff. You cannot crack if you don't have those 14 leadership principles(at least a few of them). Your programming question also will be actually evaluated against any of the leadership principles, so don't concentrate on getting the solution but how efficiently you arrive at the optimized solution. And speak throughout the interview.

I hope this helps the reader and pray that God bless you with your interview at Amazon.

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Amazon Interview Experience for SWE Summer Internship 2021

- Difficulty Level : \nMedium
- Last Updated : \n27 Jan, 2021

I applied in the AmazeWow program in April 2020 and the process started in late May, consisting of 1 online assessment and 1 interview.

Online Assessment

Date : window open from 22 May \xe2\x80\x93 24 May 2020

- Code Debug : Find the bugs in 7 pieces of codes. (Time : 20 minutes)
- Coding Test : 1 question on DP, 1 question on DFS (Time : 70 minutes)
- Work Styles Assessment : This is built around Amazon\xe2\x80\x99s Leadership Principles, they ask us to choose what extent a provided statement represents our work style. (Time : 10-15 minutes)
- Logical Ability : Questions based on language comprehension, mental ability and Maths (Time : 35 minutes)

Interview

Date : 18 June 2020

Mode : Video call through Amazon Chime, live coding on a shared doc

Time : 1 hour

The interview started with brief introduction of the interviewer, followed by mine.\xc2\xab

Then he started the discussion with basic questions on data structures like comparison of Stack and Queue.\xc2\xab

Coding Questions :

- Insertion and Search in Trie : I was asked to only write the functions, assuming the structure of trie-node to be given.

\xc2\xab \xc2\xab \xc2\xab \xc2\xab \xc2\xab Similar article : <https://www.geeksforgeeks.org/trie-insert-and-search/>

- Sum of nodes at lowest level of Binary Tree : Given a binary tree, find the sum of values of nodes present at the last level.
 - I first coded an approach similar to level order traversal. At last level, find the sum of elements present in the queue.
 - He then asked me to provide a solution without using extra space. I did it by writing a function to find the height of the tree and then finding the sum of nodes at last level.
 - Then I was asked to provide a solution without writing a separate function for finding height. I used an approach similar to this : <https://www.geeksforgeeks.org/sum-nodes-maximum-depth-binary-tree/>

Then he asked me 2 question related to OOPS.

1. Polymorphism and its types
2. Encapsulation

Similar article : <https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/>

The interview ended with a discussion about the company.

I got the result on 7th August 2020 and I got selected for the internship.

Most useful resources based on my experience : GeeksForGeeks, InterviewBit, Codeforces.

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Amazon WOW Interview Experience

- Difficulty Level :[Hard](#)
- Last Updated :[04 Mar, 2022](#)

I applied for the role of SDE I through Amazon WOW drive 2020. There were a total of 5 rounds (1 coding test + 4 interviews). Originally interviews were supposed to be offline but because of the coronavirus pandemic, I gave my interviews online.

Round 1: Round 1 was an online coding round consisting of 2 coding questions and 28 MCQs based on C, C++, Java, data structures, algorithms, and core subjects. The first coding question was to convert the infix expression to postfix <https://www.geeksforgeeks.org/stack-set-2-infix-to-postfix> and the second was to find the mean, median, and mode of the given array. This round was for 1 hour 30 minutes.

I solved both the coding questions completely. After getting shortlisted, a total of 4 interviews were to take place, each being eliminative in nature. The time for each was fixed to 60 minutes each and each of them involved writing the complete code on an IDE link shared by the interviewer. For each question, time complexity has to be told.

Interviews:

Interview 1: The interviewer started directly by giving coding questions.

1. Alternate reversal of linked list in a group of size k. Like the first group should be reversed, the second group should be the same, the third should be reversed, the fourth should be the same, etc.

Example :[xc2xa0](#)

Input : 1->2->3->4->5->6->7->8, k=2
Output : 2->1->3->4->6->5->7->8

2. There are two strings given to find the matching and non-matching characters.

Example :

Input : s1 = abc s2 = abd
Output : matching = 2 non-matching = 1

I was able to solve both the questions in around 55 minutes. The interviewer seemed satisfied. I got a mail for the second interview after 2 days and the interview was scheduled after 2 days.

Interview 2: Started with the interviewer's introduction and then my introduction and then 2 coding questions.

1. Reach from one start string to the destination string in a minimum number of steps provided some set of intermediate strings cannot be reached. The string consists of numbers starting from 0 to 9 and it works like a suitcase lock where from 0 there can be two options 1 or 9, similarly, from 1 we can go to 2 or 0.[xc2xa0](#)

Hint: Use BFS constructing graphs of strings.

Example:[xc2xa0](#)

Input : [r\nSource = 123r\nDestination = 456r\nsteps = 9](#)

2. Find a maximum of the difference between maximum and minimum of all subarrays of size k. In this interview, I was able to write code for both questions in just 25 minutes(Good luck maybe :-). Got mail for the third round the same day and the interview was on the next day.

Interview 3:[xc2xa0](#)

1. Given a family of ants, in which female and male ants are there, interactions b/w family members are given i.e., it is given who interacts with whom, find if it is a good family and a family is good if only two different genders interact.[xc2xa0](#)

Example :[xc2xa0](#)

Input: number of ants = 6, Interactions = { 1-2, 3-4, 5-6}
Output - Good family
Input : number of ants = 6 Int

2. Next greater element

And questions on os(Explain Banker's algorithm with an example, Thrashing, Deadlock, Semaphore, etc), DBMS(ACID properties), oops, and projects.

The first question seemed very new to me. After thinking a lot I was able to get that there shouldn't be any odd cycle in the graph formed from interactions. I tried writing code but the interview wasn't very much satisfactory. Then he moved to the next question. As the second question is a very common question, I instantly started telling the solution, by which the interviewer asked do you know this question and I said yes. He asked me to write code in just 2 minutes without any bugs, And I wrote it, but he could find one bug out of it [f0x9fx98x90](#)

After this interview, I didn't expect a call for the next interview. But luckily I got the mail after 6 days for the next round to be scheduled the next day.

Final Interview: Started with the introduction, project questions, and behavioural questions. Like, Give an example where you spent some time and figured out something on your own.

1. Given two arrays move an element from one array to another only if the average of both the arrays become greater than the previous average find which element can be moved
2. Some BFS related questions don't remember exactly
3. Minimum element in the stack without using another stack

In the first question, I got nervous and couldn't come up with an approach. The interviewer was very friendly and helped me to understand the approach and then asked me to write the code. The next two questions I was able to solve.

After around 15-20 days, I got mail that I have been selected as a SDE at Amazon. I would suggest being patient and calm during the interview. Think out loud. The interviewer is there to help you out.

Best of luck!!

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Amazon Interview Experience for SDE Internship (On-Campus)

- Difficulty Level :\nMedium
- Last Updated :\n22 Jan, 2021

Amazon Visited our campus, and they had put a cutoff of 7 CGPA on the basis of which they shortlisted students. After 2 days all the shortlisted students received an online test link.

Online Assessment Test: The round had four sections.

1. **Debugging:** There was a total of 7 questions in which a piece of code was written and you had to find any error so that all the test cases can pass. All the questions were very easy.
2. **Coding Section:** There were two questions, one was based on a linked list and the other was a logical question based on hashing, I would say both the questions were of medium level. The time allotted was 70 mins total.
3. **Behavioral Analysis:** This section consisted of questions that focused on your personality and behavior.
4. **Reasoning Ability:** This section was based on aptitude and verbal ability. The difficulty level was easy.

After this, I waited for many weeks as I knew my test went well, and then finally I received the mail for the online interview. It was scheduled just one day later.

\xc2\x0Round 1(Personal Interview): The round began and first the interviewer introduced himself and later asked me to introduce myself which I did. After that he walked me through how the interview is going to proceed from there. He then gave me two coding questions, firstly you have to tell them your approach, and if they are satisfied enough or if your approach is the optimum approach then they will ask you to write that code in their code space which is not an editor btw. So, the two questions were:-

1. [Find the square root of a number up to three decimal places of precision.](#) So, this was a binary search question and there was an easier version of this question in which you had to find only the integer which is closest to the square root of that number, so here you had to only change your code a bit, but the logic was a bit tricky to find, but eventually, I came up with the solution and then the interviewer was quite impressed. I also had to tell the time and space complexity and also explained to them why was this the most optimal approach.
2. [Given a generic tree you have to do an anti-clockwise spiral traversal of the tree.](#) Initially, I thought that this was a tricky problem but I kept thinking out loud, and they were also able to see where and how was I thinking, later I came up with the solution and it was the optimum one, the interviewer again asked me to write how will you represent the generic tree, and then I wrote the code for the tree using a class, the interviewer was again happy to see that, later I wrote the code for the problem and also told him the time and space complexities.

I knew for sure that I was going to clear this round. After these two questions, he also asked me if I had some questions regarding the culture on amazon and I asked him a few and after that, the round was over.

After half an hour I got a call from HR that my interview is scheduled an hour later.\xc2\xxa0

Round 2(Personal Interview): The round began with the interviewer\xe2\x80\x99s introduction and then I introduced myself He gave me two questions based on data structures.

- Given a binary tree where each node has a value and a sequence of numbers, you have to find that does the tree contain any path that has that particular sequence of numbers in that order: Since I was quite comfortable with tree data structure, after some time I was able to come up with the solution and also told him space and time complexity. The interviewer was content with my answer.
- [Connect N ropes with minimum cost](#). I was able to come with the optimal solution and also walked them through my solution. Later I told the time and space complexity.\xc2\xa0

The interviewer was happy with all the answers. Then, since enough time was left, He asked me some HR questions, like what are strengths and weaknesses, etc.\xc2\xa0

After all this, he told me in the interview itself \xe2\x80\x9cSee you soon and enjoy your day \xe2\x80\x9c, after which I was quite sure that I\xe2\x80\x99m going to go to the next round.

Final Verdict: SELECTED

I had to wait for 10 days, then I got the mail from Amazon.

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Amazon Interview Experience for SDE-1 (Amazon Wow drive)

- Difficulty Level :\nEasy
- Last Updated :\n04 Mar, 2022

I applied for role of SDE I through Amazon WOW drive 2020. There were a total of 5 rounds (1 coding test + 4 interviews). Originally interviews were supposed to be offline but because of coronavirus pandemic, I gave my interviews online.

Round 1: Round 1 was online coding round consisting of 2 coding questions and 28 MCQs based on C, C++, Java, data structures, algorithms and core subjects. The first coding question was to convert infix expression to postfix (<https://www.geeksforgeeks.org/stack-set-2-infix-to-postfix>) and the second was to find the mean, median and mode of the given array. This round was for 1 hour 30 minutes.

After getting shortlisted, a total of 4 interviews were to take place, each being eliminative in nature. The time for each was fixed to 60 minutes each and each of them involved writing the complete code on IDE link shared by interviewer. For each question, time complexity has to be told.

Interviews:

Interview 1: Interviewer started directly with giving coding questions.

Question 1: Alternate reversal of linked list in group of size k. Like first group should be reversed, second group should be same, third should be reversed, fourth should be same, etc.

Example :\xc2\xd0

Input : 1->2->3->4->5->6->7->8, \xc2\xd0k=2

Output : 2->1->3->4->6->5->7->8

Question 2: There are two strings given find matching and non-matching characters.

Example :

Input : s1 = abc s2 = abd\xc2\xd0

Output : matching = 2 non-matching = 1

I was able to solve both the questions in around 55 minutes. Interviewer seemed satisfied. I got a mail for second interview after 2 days and the interview was scheduled after 2 days.

Interview 2: Started with the interviewer\xe2\x80\x99s introduction and then my introduction and then 2 coding questions.

Question 1: Reach from one start string to destination string in minimum number of steps provided some set of intermediate strings cannot be reached. String consists of numbers starting from 0 to 9 and it works like a suitcase lock where from 0 there can be two options 1 or 9, similarly from 1 we can go to 2 or 0. Hint : Use bfs constructing graph of strings.

Example:\xc2\xd0

Input :\xc2\xd0

Source = 123

Destination = 456

steps = 9

Question 2. Find maximum of difference between maximum and minimum of all subarrays of size k

In this interview, I was able to write code for both questions in just 25 minutes(Good luck may be????)

Got mail for third round same day and the interview was on next day.

Interview 3:\xc2\xa0

Question 1: Given a family of ants, in which female and male ants are there, interactions b/w family members is given i.e., it is given who interacts with whom, find if it is a good family and a family is good if only two different genders interact.\xc2\xa0

Example :\xc2\xa0

Input: number of ants = 6, Interactions = { 1-2, 3-4, 5-6}

Output \xe2\x80\x93 Good family

Input : number of ants = 6 Interaction = {1-3, 3-5, 1-5}

Output \xe2\x80\x93 Bad family

Question 3: Next greater element

And questions on os(Explain Banker\xe2\x80\x99s algorithm with example, Thrashing, Deadlock, Semaphore, etc), DBMS(ACID properties), oops and projects.

First question seemed very new to me. After thinking a lot I was able to get that there shouldn't be any odd cycle in graph formed from interactions. I tried writing code but interview wasn't very much satisfied with code. Then he moved to next question. As second question is a very common question, I instantly started telling solution, by which interviewer asked do you know this question and I said yes. He asked me to write code in just 2 minutes without any bug, And I wrote it but he could find one bug out of it????.

After this interview, I didn't expect a call for next interview. But luckily I got a mail after 6 days for next round to be scheduled next day.

Final Interview: Started with introduction, project questions and behavioural questions. Like Give an example where you spent some time and figured out something on your own.

Question 1: Given two arrays move element from one array to other only if average of both the arrays become greater than the previous average find which element can be moved

Question 2: Some bfs related questions don't remember exactly

Question 3: Minimum element in stack without using another stack

In first question I got nervous and couldn't come up with the approach. Interviewer was very friendly and helped me to understand the approach and then asked me to write the code. Next two questions I was able to solve.

After around 15-20 days, I got mail that I have been selected as a SDE at Amazon. I would suggests to be patient and calm during interview. Think out loud. Interviewer is there to help you out.

Best of luck!!

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Amazon Interview Experience for SDE Intern (Off-Campus)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n18 Jan, 2021

Online Assessment Test: The round consisted of four sections.

1. **Debugging (time constraint):** There were 7 questions to be debugged.
2. **Coding Section (time constraint):** There were 2 coding questions, one from trees and the second one from array. The difficulty level of the question was **medium \xe2\x80\x93 easy.**
3. **Behavioural Analysis:** This section consisted of questions about work and behavioural related ones.
4. **Reasoning Ability (time constraint):** This section consists of some verbal reasoning questions and some aptitude questions. The question level was easy.

After the online assessment, I received a mail that I have been shortlisted for interviews, there were basically **2 rounds** to be held and all were elimination one, this detail was given in the shortlisting email itself.

Round 1(Personal Interview): The round started with little greetings and then I was given my problems.

1. Find the bottom and top view of the tree.

1. [Bottom View of a Binary Tree.](#)
2. [Print Nodes in Top View of Binary Tree.](#)

Basically, I needed to tell the approach of both of them and then I was asked to code the bottom view of the tree, I was able to tell the approach and code it.

2. Find the [Maximum sum such that no two elements are adjacent](#). The problem I received was not exactly the same instead of array I have to take the level order sum of a tree, I was able to solve this problem and was able to code the problem.\xc2\xab0

The interview ended with the introduction and some questions that I asked them regarding amazon and its work culture.

After this round, I received a call from hr regarding the second round.

Round 2(Personal Interview): The round started with an introduction and then I was given my problems:-

1. Find the first non-repeating character in [Queue based approach for first non-repeating character in a stream](#). I was not clear with the problem, so I asked a lot of clarification questions regarding the problem then I told him my approach, and he was satisfied with the one, then I was asked to code it which I was able to code.
2. Find the minimum time which would take the gas to reach all the cells if the explosion happened at a point in the matrix. [Check if all enemies are killed with bombs placed in a matrix](#). The problem was simpler than the given link, it was a simple BFS problem, but I was asked why we are not able to use DFS here, then I was asked to code the problem.

Then the interview was over, and after a few days, I received a mail regarding the selection. My overall experience was really great the interviewers were really cool and helping people, really

excited to start working there.

Thank you for reading!

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Amazon Interview Experience for 6-months Internship | On-Campus 2020

- Difficulty Level :[Hard](#)
- Last Updated :18 Jan, 2021

There were no eligibility criteria. But, only CSE, ECE, and EEE branches were allowed to sit for this.

First Round (Online Assessment:) This was held in AMCAT environment. The assessment consisted of four sections. You couldn't switch between different sections. After the end of any section, you can take your time to move to the next section. Also, you have to do these in order. Even if you complete any round earlier, the leftover time won't be added to the next round.

1. First, a code debugging section (20 minutes) which consists of 6 codes with some logical or syntactical errors, you have to make sure all the test cases pass for each of these 6 questions.
2. Secondly, there was a coding test (70 minutes) which had two problems:
 - [Clone a linked list with next and random pointer.](#)
 - [Find Critical connections in the given graph](#)

You can switch between these two questions. You will have the option to run and test the code before submitting it. I don't know if there were more sets than two, but some of my friends also got this question:

- [Merge two sorted linked lists](#)

A workstyles assessment (20 minutes) and a reasoning ability section (35 minutes).

Browser usage was logged, so do not open new tabs or switch to any existing one. During the reasoning section, I wasn't able to skip and return to questions. The exam wasn't proctored with webcam/microphone access.

A total of 20 students were selected for the next round. Most of the students completed both of the coding questions, so don't take the other sections lightly.

Second Round (Video interview): This was a video interview round. I had to install Amazon Chime software for the call and I had to share my screen. I was also given a link where the interviewers would type in the questions and I could edit the code. There were two interviewers in this round for me.

First, they said how the interview would go and started with their own introduction first. They said I would be given 2 questions and I would have to explain my approach before coding. I was asked to introduce myself and some questions were related to my introduction.

Then I was given 2 questions:

1. [Find the first non-repeating character from a stream of characters.](#)
2. [Minimum time required to rot all oranges](#), and just a little change in the 2nd question, there were also obstacles in the 2D grid.

For the first question, I asked what to return if there would be no nonrepeating characters. For the second, I asked if the obstacles blocked the smell of orange entirely from leaving, what should I return.

This round took 1 hrs and 30 mins. I spoke out my approach and if they were satisfied, I was asked to code it. During my explanation, he also gave me hints where I was stuck. But left me to arrive at the answer myself. I was allowed to work with pen and paper. Before coding, I was asked about the time complexity of my approach. Both the questions went almost similarly. I was also reminded of the remaining time allotted for the given question. The code wasn't being run against any test cases, but he verified my code manually.

I don't exactly know how many students qualified for the next round as the meeting link for the next round were mailed personally.

Third Round: Happened in the evening same day. This round went pretty much the same as the second round except I had to solve 1 coding question this round and the next half was about the project. The interviewer introduced himself and asked me to introduce myself. He was interested in one of the activities I did as a member of a technical team.

We then moved on to my coding question.

1. [Previous greater element](#). Just instead of the previous greater element, it was a previous greatest element.

In this question, I was given two cases, one where the queries were run offline and one where the queries were online. For the

offline queries, the fastest method would be to sort the queries and return the answer for each query as and when I went up the height of the beam.

And in the case of online test cases, we have to examine each query individually. So, my logic was to traverse the heights of the building array from left to right and keep on saving the max height of the beam corresponding to the indices of the building where the beam would hit before processing any query.

For e.g.

```
building height array - 5, 2, 5, 7, 5, 8, 10\r\nmy array will be - {5,0}, {7,3}, {8,5}, {10,7}
```

So for every query from 0-5 answers will be 0, 5-7 answers will be 3, 7-8 answers will be 5, 8-10 answers will be 7, etc.

Now, for every query, I will just use the binary search (as the resultant array will be sorted a/c to the 1st element) to find a number from the array's first number which is greater than or equal to the query and return the corresponding second number.

I asked what will happen if the beam's height will be exactly a building's height.

We then moved on to the project, I was free to describe any recent project that I took up. I explained to him about the one I did in my internship. The sir asked no questions related to Machine Learning instead of the approach that I took for the project if I could've used something else. I very briefly described the whole project and along with it the problems I faced, the change I did in my approach, some already existing systems, and the disadvantages, and some others with better advantages but why I didn't use that. What libraries I used and any alternatives to those. If the project you described was made solely by you, you will find it really easy to answer.

The same night results came in and I along with 2 others were selected for the six months internship (PPO based on performance).

My advice would be to remain calm and confident, interact with the interviewers well.

And these points will be really helpful as far as Amazon is concerned:

- Never assume anything from the question, always ask him for any condition you find not covered in the question. The interviewer will definitely say That is a good question and answer it.
- Write clean code, which the interviewer can read and understand easily without you even explaining it.
- Take appropriate variable names
- Always speak out what you are thinking regarding the approach.
- Time complexity will be one of the most considered factors in your approach.
- In your introduction, be very confident, don't just mug up the script, and don't keep it too technical.
- If you have done the project yourself, you will go through the project related questions pretty easily.

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Amazon Interview Experience For Software Developer Intern

- Difficulty Level :\n[Medium](#)
- Last Updated :\n12 Jan, 2021

Amazon visited our campus around late September to hire for the role of Software Developer Intern. There were 3 rounds involved in the process.

- **An online test**
- **Two technical interviews.**

The online test was organized on Mettl Platform and consisted of the following parts :

- **Debugging:** Had to apply some changes to a given code snippet to make it logically and syntactically correct.
- **Psychometric Test:** Situational questions.
- **Reasoning:** Was relatively easier than you would usually find in other placement tests.
- **Two coding questions :\xc2\xa0**
 1. Rewrite of **Search in a matrix:** <https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/>
 2. Rewrite of **Bridges in a graph:** <https://www.geeksforgeeks.org/bridge-in-a-graph/>

Technical Round 1:

- Started with the introduction.
- Then two coding questions were asked :
- Given the data of n buses in a bus station with their arrival and departure time, find the minimum number of platforms required so that none of the buses overlap:
<https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/>
- Gave an O(nlogn) solution by sorting all the timings.
- Given a binary matrix, find the number of shapes and their parameter (length) present in the matrix. A shape is a sequence of consecutive ones, and we can move in all eight directions:
<https://www.geeksforgeeks.org/find-number-of-islands/>
- Solved using BFS.
- Discussion on time and space complexities of each problem.

Technical Round 2 :

- Again started with the introduction and simple questions related to one of my projects.
- Then 2 coding questions :
- Given the prices of n stocks find the maximum profit that can be made by doing at most k transactions: <https://www.geeksforgeeks.org/maximum-profit-by-buying-and-selling-a-share-at-most-k-times/>
- First I gave an O(n³) DP solution, then optimized it to O(n²).
- Given the heights of walls arranged from left to right find the volume of water that will be trapped between the walls: <https://www.geeksforgeeks.org/trapping-rain-water/>
- Gave an O(n) solution using the maximum wall to right and left for each wall.
- Discussion on time and space complexities for each problem.

\xc2\xxa0After about a week, I got the news through my college that I have been selected and given an internship offer. A total of 4 students got selected.

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Amazon WoW Program

- Difficulty Level :[Medium](#)
- Last Updated :[04 Mar, 2022](#)

Are you a female looking for SDE roles in a renowned product-based organization, Amazon? If yes, then there is an opportunity for you to get an interview call from Amazon. Yes, you heard it right. Amazon has the remarkable program called Amazon WoW Program. The main aim of Amazon behind this initiative is to increase the participation of women in the tech industry. Every year Amazon offers internship and full-time software development opportunities to female candidates through the Amazon WoW program. Students from any college across the nation can apply for this opportunity.



Eligibility Criteria: Before applying for the Amaze WoW program, you must ensure to satisfy the below-mentioned eligibility criteria:

- Only Female Candidates are allowed to participate.
- BE/B.Tech/Master degree in Computer science or related stream with no backlog and CGPA greater than 6.5.
- Candidate should have coding knowledge of any one programming language such as C, C++ or Java, etc.
- Understanding of Design Patterns, Data Structure & Algorithm, and relational databases.
- Should have better problem-solving skills

Note: If you have been interviewed by Amazon in the last 6 months then you can't participate.

Selection Process: Below is the selection process of Amazon for this program.

Round 1: Online Test

It will have coding and MCQ questions that will be testing your knowledge of Data Structure and algorithms, Programming concepts, etc. Some of the crucial insights of this round, based on the candidates' feedback, are mentioned below:

- The online round consists of 28 MCQs based on programming language and Data-Structures and 2 coding questions that need to be solved within a duration of 90 minutes.

- However, there is not any sectional time limit and you can also switch the sections at any time during the test. To perform well in the MCQ section, you're required to have your fundamentals strong and have better speed and accuracy.

Round 2: Technical Interview

This will be a usual SDE level interview and consists of multiple rounds such as Technical Interview Round-1, Technical Interview Round-2, etc. Some of the most-important topics based on candidates interview experiences are Operating System, Standard Array, and String problems, Bit Manipulation, Tree traversals, graph problems, basics topics of computer networks like OSI model, DNS, Deadlocks, Processors, etc.

How to Register?

You can register yourself for the Amazon WoW Program conveniently by following the below-mentioned steps:

- Visit the official website of AmazeWiT.
- On the official website, you're required to sign in with your Google account.
- Then you'll be redirected to a dashboard page where you need to click on 'Amazon Internship and Full-time Opportunity' under the section 'Upcoming Job Opportunities'.
- Now you need to click on the 'Proceed' button and after entering the required details, click on the 'Save' button.
- At last, choose your preferred location and click on the 'Apply' button.

For the coding interview round of the Amazon WoW program, you all are advised to write short comments to make it more convenient for the interviewer to assess. Also, you can ask the interviewer to repeat the question in case you don't get it correctly the first time.

Benefits of Participation: Some of the advantages of participating in the Amazon WoW Program are:

- Competition is reduced to half as only females can apply.
- Higher package than average industry package.
- Optional Telecommute / Work from Home.
- Better Career growth.

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Amazon Interview Experience for 6-Months SDE Internship (Nov 2020)

- Difficulty Level :\nBasic
- Last Updated :\n31 Dec, 2020

Online Assessment: The online round consisted of a total of **3 sections** and behavioral sections. The Online round was conducted on the AMCAT platform.

Section 1 (Code Debugging | 20 mins): There were 7 code debugging questions in which we have to debug the code or logic to pass all the test cases. Overall the difficulty of debugging questions was easy.

Section 2 (Coding Round | 70 mins): It had 2 questions first one was Easy second one was Medium.

1. [Count pairs with the given sum](#)
2. [Clone a Linked List with next and random pointer](#)

Section 3 (Logical Reasoning | 35 mins): This section consists of some verbal reasoning questions and some aptitude questions. The question level was easy.

Section 4 (Workstyles Assessment | 20 mins): This section was made to test the student's behavioral and workstyle compatibility.

Overall the Assessment was easy. Read the past interview experiences before taking up an Amazon assessment.

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Amazon Interview Experience for SDE-1 | 6 Months Experienced (Off-Campus)

- Difficulty Level : \n[Hard](#)
- Last Updated : \n25 Dec, 2020

I appeared for Amazon\xe2\x80\x99s recruitment process in December 2020. I got a call from a recruiter at Amazon for the SDE-1 role.

There was a total of 5 rounds (1 online coding test + 4 interviews).

Round 1(Online coding test): The test contains two coding questions which you have to solve within 2 hours. You also have to submit the approach used for solving in words along with the time and space complexity of your algorithm.

1. It was based on the priority queue.
2. [Find the closest pair from two sorted arrays](#)

I solved both the problems easily and got this round cleared easily.

The recruiter then contacted me for interviews. She told me that there will be 4 rounds of interviews and every round will be an elimination round. All interviews were conducted on amazon chime. Every interview round was of 1 hour.

Interview round 1: There were two interviewers in that round. In the starting, everyone gave their introduction and then the interviewer directly jumped on to coding. 2 coding questions were asked in this round. I had to discuss the approach clearly and write a neat and clean code for this. The code should cover all the edge cases.

1. [Sorted Array to Balanced BST.](#)
2. [Given a matrix of \xe2\x80\x99s and \xe2\x80\x98s, replace \xe2\x80\x99s with \xe2\x80\x98s if surrounded by \xe2\x80\x99s.](#)

I solved both the problems and wrote a clear code for both of them. He asked me about the complexities of both the solutions.

Interview round 2: We had an introduction in the starting then the interviewer started with a coding question. The question was: There is a scientist, and he has to perform experiments on some virus. But he can perform the experiment if there is only 1 virus. Given number of virus between [1, 10^18], find the minimum number of steps to reduce the number of viruses using the below steps:-

1. Add or subtract 1 to the virus count.
2. May reduce the size by half if the count is even.

I solved the problem using recursion very easily and use memoization to optimize the code. The interviewer asked me to write the code and he was impressed by the approach I used.\xc2\xab0

He then asked about the complexity of the code, and we had a very good discussion on this. The interviewer then asked me about the DNS resolution process, the difference between MAC address and IP address, what are class A/class B/ class C IP addresses.

He then asked me about thrashing, virtual memory, caching, and real-life example of caching. I

answered all of them properly and then at the end the interviewer asked some behavioral questions based on my past work experiences.

Interview round 3 (Hiring Manager round): For the starting 45 min, we discussed my work in my previous company. We had a detailed discussion about my projects in the previous company. He asked some behavioral questions in between based on those experiences. He was very much impressed by my previous work and then in the last 15 min, he asked me a coding problem.

The problem was a variation of Stock Buy and Sell to maximize profit. I initially gave him a brute force approach, and then he asked me to optimize it. I optimized it, and then he asked me to write code for it and at the end, we discussed the complexity of the algorithm.

Interview round 4 (Bar raiser round): A senior engineering manager at Amazon took this round. For the starting 30 mins, he asked about my previous works and again some behavioral questions. After this, he gave me a coding question. The question was:

1. Given a graph, I had to find whether the given graph is a tree or not.

I discussed the approach clearly and then wrote a clean code for it.

Result: Selected

Tip: Prepare DSA well for the coding rounds from GFG or leetcode. You should be able to write neat and clean code. Also, Amazon looks for leadership skills in its employees, so be prepared for behavioral problems as well. They ask a lot of behavioral questions too.\xc2\xab

Be prepared with CS subjects like DBMS, Computer Networks, and OS.

Good luck!

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Amazon Interview Experience for SDE-1 | Off-Campus 2020

- Difficulty Level :\n[Easy](#)
- Last Updated :\n23 Dec, 2020

A recruiter contacted me through email if I was interested in applying for the SDE-1 role, I sent my resume and waited for further notice. I received an email to take up a Hackerrank Test within a week.

Online Coding Test: Coding challenge (2 scenarios) and Coding approach (elaborate why you code the way you do) \xe2\x80\x93 105 minutes: One question based on Two-pointer approach with extra use of hashmap, one was simple iteration with finding min in every loop. (Tip: Solve all coding questions from interview experiences of GFG and LeetCode.)

1. **Workstyle survey 15 minutes:** Remember the answers you choose, questions do get repeated
2. **Feedback survey 5 minutes:** The Toughest of all (PS: Just Kidding!)

Technical round 1:

Preparation: Watched a lot of DP youtube videos, solved questions from Amazon Interview Experiences in GFG.

1. 2 Coding questions:
 - Easy Graph application problem, Optimise it using DP, further optimise space by removing unnecessary data.
 - Easy Data Structures problem using hashmap and a counter.

Tip: Use sensible variable names, talk it out aloud. Modularise code into functions if needed.

Technical round 2:

Preparation: Watched a lot of Mock interview YouTube videos of FAANG companies, solved questions from Amazon Interview Experiences in LeetCode.

1. 2 Coding questions:
 - Find the kth the smallest element in an array.
 - Binary Search tree problem(GFG medium level)
2. 2 Behavioural Questions

Tip: Give as many approaches as possible, explaining which do you prefer and why.

Technical round 3:

Preparation: Nothing Much

1. 1 Coding question: LRU Cache Implementation
2. 3-4 Behavioural Questions on Amazon\xe2\x80\x93 LP: Google It!

Technical round 4 (Hiring Manager Round):

1. 1 Coding question: Implement Hashmap with a function that returns the order of insertion of <key, value> pairs into it.
2. 3-4 Behavioural Questions on Amazon\xe2\x80\x93 LP

3. Few Basic Questions on OS, DBMS

Result: Selected \xf0\x9f\x98\x89

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Amazon Interview Experience for System Development Engineer (On-Campus Dec 2020)

- Last Updated : \n19 Dec, 2020

Round 1(Mettl 1 Hr 30 Mins): The assessment consisted of 9 components like software testing, SQL/database, algorithms, Linux, pseudo code, data structures, coding, and networks.\xc2\xxa0

1. **The coding section had a single question:** [\xc2\xxa0Count Derangements \(Permutation such that no element appears in its original position\)](#)

32 students were shortlisted out of 804 students, of which 8 were selected for the system development engineer role.\xc2\xxa0

Round 2(Amazon Chime and Live code 1 Hr 10 mins): \xc2\xxa0I was really nervous when the interview began, but the interviewer was a very nice person he started with his introduction, and then we moved on to mine, I was totally comfortable with this time.\xc2\xxa0

He started discussing one of my projects (A safe file sharing system based on Linux) and asked a few questions where ever he felt like.\xc2\xxa0

Then we moved on to live code, questions asked:

1. \xc2\xxa0<https://leetcode.com/problems/two-sum/>. I solved it using an unordered map, in which I traversed the array two times he asked if can do it in one traversal, I was able to provide an efficient solution then he asked about space and time complexity, at the end he was satisfied by my approach.\xc2\xxa0
2. In order traversal of a tree without recursion. I solved it using recursion first, he asked me to explain the concept of recursion and function call stack then he asked me to do it without recursion, I was not able to code it but I explained a two-stack approach to him which again I was not able to finish, he was really nice about this and told me not to worry and moved on to the next question.\xc2\xxa0
3. **Scenario-based question:** One of my projects involved managing a site, so he asked me, how would I handle if my site got huge traffic and I had to manage a lot of data, I told him how I\xe2\x80\x99ll manage the database using indexing and database sharding if database sharding is implemented will the data be at a single server or distributed servers, which I was able to explain to him, and he was satisfied by my answer.\xc2\xxa0
4. **OS questions:** spooling and a few others I can\xe2\x80\x99t recall.\xc2\xxa0
5. **Networking questions:** Explain the OSI model\xe2\x80\x99s all layers with protocols of each layer, what are protocols of the transport layer, explain what is TCP and UDP, explain how the TCP mechanism works.\xc2\xxa0

How would you find network errors in transmission, and what type of errors are there, I told him we could analyze ICMP packets in pcap files in Wireshark , and told him about various errors like zero window, dup ack etc.\xc2\xxa0

Linux: He asked me all the Linux commands I could think of and explain their use, I was able to give him 10-15 commands with their use, he then asked about chmod, read and write permission, how they look and what denotes what in read and write permission structure, I was able to explain everything, and he was satisfied by my answer.\xc2\xxa0

Other questions:\xc2\xxa0

1. What are immutable objects, the difference between overriding and overloading, what is operator

overloading, the difference between run time and compile-time polymorphism, except immutability I was able to explain everything else with an example? \xc2\xab

- He then explained what immutability meant.\xc2\xa0
 - First-round ended he asked if I had any questions for him, to which I asked a few, after a wait of 2 hrs 8 students were selected from 32, and I was one of them.\xc2\xa0

Round 2 : (Amazon Chime and Live code 50 mins): He started with his introduction and then asked me to give mine, which I did, while I was explaining he stopped me in between and asked a few questions on one of my projects as he was not clear about the practicality of it, I explained it again in a different manner, by the sound of it he was not much satisfied. He then proceeded to live code :\xc2\xa0

Coding question: Given an array list of the

for example (abc,96,24),(cdb,34,23) sort this based on the age of the student.

For this, I was able to provide an $O(n \log n)$ solution using the map.

He asked me what does an auto variable mean, how map sorts its keys, difference between map and unordered map\x80\x99s working, and write down output for each iteration, then later he asked time complexity and space complexity of the code, I was able to explain everything, and he was satisfied.\xc2\xao

Other questions:\xc2\xa0

1. How would you check if a site is reachable?\xc2\xa0
 2. What is DNS, explain how it works.\xc2\xa0
 3. What happens when I type amazon.com in the URL
 4. Explain TCP/IP and a 3-way handshake, what is SYN, ACK packets\xc2\xa0
 5. How does an API work, explain how a search query works on espncricinfo website\xc2\xa0

I was able to answer all the questions and explain in a well-structured manner.\xc2\xao

Scenario-based questions: How will you rectify a broken site or a site that is not reachable? I told him that we'll get a status code on the broken site and then I explained to him about different status codes like 1xx,2xx,3xx,4xx,5xx what each of these meant, and how we can possibly know what and which side is causing the error, and based on the deduction rectify it. He was pretty satisfied with my approach.

Let us say your Linux server is running slow how would you deduce what is causing it and how will you rectify it, I told him about monitoring the resources using htop command in Linux and seeing which resource is being used more, since the server is running slow it is safe to assume that the server is running slow due to high CPU usage and based on this we can make some tweaks in the configuration file, he asked what tweaks exactly to which I was not able to answer as I was not sure, he said it's fine and told me that he's done with my interview and asked if I had any questions for him.

I asked a few questions and that was it.\xc2\x9aNext-Day a partial result was declared 3 students were selected, and I was one of them and the only one for the system development profile.\xc2\x9a

Verdict: Selected.

Tips: \xc2\xa0

1. Always be honest with your interviewer.\xc2\xa0
 2. Feel free to ask the interviewer for any hints or suggestions, interviewers at amazon are extremely helpful and nice.\xc2\xa0
 3. Try not to get overwhelmed by others\xe2\x80\x99 interview experiences, just give your best and

- don't worry about the results.
- 4. Believe in yourself and your abilities even if no one else does.
 - 5. Think and speak, ask for extra time, don't blabber.

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Amazon Interview Experience for SDE-Intern | On-Campus 2021

- Difficulty Level :\n[Medium](#)
- Last Updated :\n17 Dec, 2020

I am a final year BTech student at USICT, GGSIPU. Amazon visited our university for the role of SDE Intern (6 months).

ROUND 1 (Online Assessment Test): Initially, an online assessment test was conducted to shortlist candidates for the interview process.

Online test consists of four sections:

Debugging: This section had 7 debugging problems, which consist of code snippets that have some logical error that needs to be rectified. I solved all 7 problems. They were very easy.

Reasoning Ability: This section consists of some verbal reasoning questions and some aptitude questions. The question level was easy.

Coding: This section consists of 2 coding problems.

- My first question was a simple matrix problem which I solved within 3\xe2\x80\x935 minutes.
- The second question was to determine if a given tree S is a valid subtree of a tree T. I solved this problem as well.

The final section was a kind of survey or behavioural analysis. It consists of various work or behaviour related questions.

Around 30 candidates were shortlisted from my campus and over 150+ candidates were shortlisted from the university, and I was one of them. Then my first round of interviews was scheduled. I was pretty nervous before the interview.

Round 2 (Technical Interview): My interviewer introduced himself in the beginning and asked for my introduction.

1. The first question he asked was Product Array Puzzle. It was a simple problem that I was able to solve after a little thinking. <https://www.geeksforgeeks.org/a-product-array-puzzle/>
2. The second problem he asked about was an Asteroid collision problem. I tried to solve this problem. Thought of various approaches but was not able to solve this problem. I told one of my approaches to the interviewer, after discussing my approach, finally, he asked me to code the solution. My approach was not that straight forward as a result I was not able to code it properly, and he was not satisfied with the solution. <https://leetcode.com/problems/asteroid-collision/>

The interview was time-bound and I took most of my time solving the second problem leaving me no time to move forward.

Finally, the interview was over and as I knew already, I was not selected for the second round.

PS: I solved my second problem within 5 minutes after the interview was over. Maybe I just got nervous and thought too much. It was a simple problem with a straight forward and easy approach (using stack)

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Amazon Interview Experience for SDE-2

- Difficulty Level :\n[Expert](#)
- Last Updated :\n14 Dec, 2020

Round 1 (Problem Solving+Behavioural 1hour):

1. Given a list of employee-manager pairs, count the hierarchy for an employee.
<https://www.techiedelight.com/find-employees-who-reports-to-manager/>
2. [Return the largest multiple of 3 from the given array.](#)

Behavioural:

1. Most challenging Project
2. An example where you did something innovative

Round2(Problem Solving+Behavioural 1hour)

1. Find a path b/w two villages. (Couldn't recall the exact question)
2. [Find the missing number in a sorted array](#)

Behavioral:

1. You seek customer feedback and it helped
2. Something challenging you took out of your responsibility, what was the outcome
3. An instance where the customer came up with unreasonable demands and you pushed back

Round 3(System Design + Behavioural 1hour):

Q1. Design a system which receives signals from a set of sensors and display a bitmap on a screen for a given area. An area can have 1000 sensors in 100sq km.\xc2\x9a0

Round 4(Hiring Manager 1hour):

Discussed past work, some behavioral questions, and low-level design of a bus booking platform (Similar to MakeMyTrip for Buses)

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Amazon Interview Experience for SDE-1(On Campus)

- Difficulty Level :\n[Easy](#)
- Last Updated :\n10 Dec, 2020

Round 1 (Online Assessment 2hr 30min): The assessment consisted of four components, a code debugging section (20 minutes), a coding test (70 minutes), a work styles assessment (20 minutes), and a reasoning ability section (35 minutes).

Coding test questions:

1. Given a number x, and a row-wise and column-wise sorted matrix, check if x exists in the matrix or not.
2. Given a linked list, create a copy of that linked list and return a pointer to the head of the new linked list.\xc2\xa0

Round 2 (Online Interview 30 mins):

1. A small discussion on trees and graphs
2. Given a directed graph, check if it is a tree or not. Write complete clean code.

Round 3 (Online Interview 1 hr):

Interviewer: Select any one of your projects, we will then discuss it.

Did a detailed discussion on the project. The interviewer asked many technical details related to approach, implementation, results, etc, and non-technical questions like, \xe2\x80\x9cwhat was the most challenging part\xe2\x80\x9d. This took 30 minutes.

Design question: We have a system where logs are continuously being generated. Say, a few logs every minute. Each log will have a timestamp. Log type can be an error, info, etc. We are only interested in error logs. The error can be also of many types.\xc2\xa0

```
Timestamp\xc2\xa0 log type      sublog type noOfInstances
7/12/2020 12:35:00 Error\xc2\xa0 abc\xc2\xa0 2
7/12/2020 12:36:25 Error\xc2\xa0 xyz\xc2\xa0 3
7/12/2020 12:36:25 Info \xc2\xa0 pqr\xc2\xa0 2
7/12/2020 12:37:20 Error\xc2\xa0 xyz\xc2\xa0 1
```

At any time we want to fetch Error types and their number of instances in the last t minutes from the current time. \xc2\xxa0The value of t depends on the query. In addition, you should be able to tell the error name with the highest number of instances in the last t minutes.

Interviewer, then further asked to tell the top k error name with the highest number of instances in the last t minutes.

Few more small questions like \xe2\x80\x9chow will you store data\xe2\x80\x9d, \xe2\x80\x9chow will you do this\xe2\x80\x9d, etc

Round 4(Online Interview 1 hr):

1. Given a binary tree, Convert it to its mirror tree. I wrote a recursive function whose return type was void. The interviewer further asked to write one more solution, using a non-void return type function. Then a small discussion comparing both approaches, recursion-stack, worst and avg case time complexities, etc

2. Given a BST, a node value, and an integer K. Print all nodes which are at distance K from the given node. Nodes at distance K from a node can be in all 3 directions. The left path, the right path, path via parent. The interviewer further asked to do the same question for the Binary tree.

I was able to answer all questions and write error-free clean code in one go. I got the offer \xf0\x9f\x99\x82

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Amazon Interview Experience

- Difficulty Level : \n[Medium](#)
- Last Updated : \n04 Dec, 2020

Amazon visited our campus in October 2020. The process consisted of 4 rounds overall. (1 test and 3 interviews)

Online Round: The first round is an online test which consisted of aptitude, 2 coding questions(in 1hr), workstyle assessment, and some other sections.

The overall difficulty of this round is easy. Amazon repeats coding questions. So make sure you are familiar with the questions they usually ask. I got the Favorite genre(google it) problem and subtree check problem(given roots of 2 trees, check if one is a subtree of the other).

You need to pass all the test cases to even be considered by amazon.

Out of ~400 students, 51 got shortlisted after this round. Many students who did both the coding questions were not shortlisted. So, do aptitude well just to be on the safe side. Amazon took our interviews on December 1 on Amazon Chime and the code also needs to be written on some amazon platform. The code is written won't be compiled. The interviewer manually checks the code.

There were 3 rounds of online interviews. All rounds started with a 'Tell me about yourself'. The questions are as follows

First Round(Technical): LRU Cache implementation with a special focus on edge cases.

Second Round(Technical):

1. Projects discussion
2. Given a number, convert it to roman numeric form.
3. Given a binary 2D array whose rows are sorted, find the row with the maximum number of 1s. (Required complexity is $O(m + n)$)

Third Round(Technical + HR):

1. Given a list of pair of numbers, return a list of pairs which do not have an intersection with any other pair.
2. OOPS
3. Projects discussion
4. HR questions(Why amazon, do you take calculated risks, and other common hr questions)

All the questions were worded differently. I just mentioned the crux of all the questions. Also, make sure to read up on amazon's leadership principles and answer HR questions accordingly.

6 students were given the offer at the end.(including me)

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Hard](#)
- Last Updated :\n02 Dec, 2020

I got this opportunity during the COVID time and hence all the interview rounds were conducted on Amazon Chime (video call) and I had to write the code on LiveCode (a shared IDE) which was visible to both me and the interviewer.

First Round (Online Test): Online assessment consisting of 4 sections conducted on the AMCAT platform.

1. **Code Debugging:** 7 questions C/C++/Java (20 minutes)
2. **Workstyle Assessment:** (20 minutes)
3. **Reasoning Ability:** 24 questions (35 minutes)
4. **Coding:** 2 questions (70 minutes).
 - [Merge two sorted linked lists.](#)
 - [Clone a linked list with next and random pointer.](#)

Second Round: First, the interviewer asked me to introduce myself. Then he directly jumps to coding questions.

1. [Trapping Rainwater.](#) Firstly I gave him a brute force solution then the interviewer asked me to write an optimized solution.
2. [Reverse a Linked list.](#)

This round went for around 1.25 hours and I solved both the questions.

Third Round: After a formal introduction, the interviewer directly jumps to coding questions.

1. Given a matrix consists of 0 and 1, find the distance of the nearest 0 for each cell.
2. The distance between two adjacent cells is 1. <https://leetcode.com/problems/01-matrix/>

At the end, the Interviewer asked some questions on Projects and this round went for around 65 minutes, and I was successful in solving this question with the optimized approach.

Fourth Round (Technical + Behavioral): Started with an introduction and then moved on to a detailed discussion about the project.

1. What was my role?
2. What Problems I had faced while making the project?

Behavioral Questions:

1. Tell me a situation where you worked on a tight deadline
2. Tell me a situation where you took a decision

And then he asked me one coding question:

1. Find the closest pair from two unsorted arrays having equal or unequal size.

Question is similar to this: <https://www.geeksforgeeks.org/given-two-sorted-arrays-number/>

x-find-pair-whose-sum-closest-x/

This round went for around 1 hour and for the behavioral questions you need to follow the STAR (S \xe2\x80\x93 situation, T \xe2\x80\x93 task, A \xe2\x80\x93 action, R \xe2\x80\x93 result) method.

Verdict: Selected \xf0\x9f\x99\x82

Tips:

1. For coding interviews, you will first need to explain your approach verbally and then if the interviewer is satisfied with the runtime complexity, he will ask you to write the code with proper syntax. You will not have to take input, just take the input as function parameters, and write the complete logic in the function). Practice explaining your approach.
2. For behavioral questions, find the set of questions [https://leetcode.com/discuss/interview-question/437631/Amazon-Leadership-Principle-\(Behavioral\)-Questions](https://leetcode.com/discuss/interview-question/437631/Amazon-Leadership-Principle-(Behavioral)-Questions). Here is a nice simple blog explaining the process of behavioral interviews at amazon (<https://interviewgenie.com/blog-1/interviewing-at-amazon-behavioral-interview-questions>)
3. Make a list of tasks that you did
4. For every question try to fit those tasks into the situation
5. For every question be ready with at least two tasks.

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Amazon Interview Experience for SDE Internship(On-Campus)

- Difficulty Level :[Hard](#)
- Last Updated :[27 Nov, 2020](#)

Amazon Online assessment. So this round was held on the platform called AMCAT. The questions were repetitive and most of the things that were asked were available on the Internet.

So this round had 4 Parts:

1. Debugging
2. Aptitude
3. Behavioral
4. Coding

The coding round was pretty simple, some questions that I encountered were:-

1. [Create a copy of the Linked List containing Random Pointers.](#)
2. [Search in a matrix that is sorted Row -Column wise.](#)
3. [Bridge in a graph.](#)
4. <https://leetcode.com/discuss/interview-question/373006>

All the questions were easily available on the Internet. \xc2\x80

Technical Interview 1: Approx 2500 people gave the first online round and only 161 students got the opportunity for the interview. So my interview was held after a week of the declaration of the online round result.

I joined the meeting on Amazon chime, interviewer directly asked me to join the live coding platform on which he gave me my first coding question.

He told me to tell him an optimal approach, and only if he will be satisfied with my approach, I will be allowed to write the code. I told him my approach, although he gave some hints to get me to the right approach.

Question 1: [Given array nums of n integers and an integer target, are there elements a, b, c, and d in nums such that a + b + c + d = target? Find all unique quadruplets in the array which gives the sum of the target.](#) \xc2\x80

Notice that the solution set must not contain duplicate quadruplets.

Input: nums = {1,0,-1,0,-2,2}, target = 0\r\n**Output:** [[-2,-1,1,2],[-2,0,0,2],[-1,0,0,1]]

It was based on DP on trees, the first approach that I told him was a brute force approach, He wanted me to do this in O(N) so within 4-5 mins, I was able to figure out a solution. So I had to code these in 45 \xe2\x80\x93 60 mins including the discussion on the approach and time complexity. \xc2\x80

It was an amazing experience overall I faced these problems for the first time, and I was almost able to get it right. It was an amazing feeling, Super Satisfactory.

Question 2: [Given the root of a binary tree, find the maximum value V for which there exist different nodes A and B where V = |A.val \xe2\x80\x93 B.val| and A is an ancestor of B.](#)

8\r\n / \\\r\n 3 10\r\n / \\\r\n 6 14\r\n / \\\r\n 4 7 13

Technical Interview 2: This was a great round though I was not able to perform well. The interviewer was very friendly and was just observing what I was thinking while approaching the question.

So in this round too he directly asked me to join the live coding platform. Then he gave me one question to solve, I asked him whether he wants to hear my approach to which his reply was NO, \xc2\x80

He told me that he is excited to see how I will approach the problem. In this round he wasn't even expecting a proper code without bugs he was only interested in knowing my thought process and how I approach the problem.

Question 1: [You are given a string of numbers. You have to return a partitioned String Array in which substring \(i-1\)th +\(i-2\)th = ith substring.](#) \xc2\x80

If not possible return an empty string array.

For example:

Input: \r\n111122335\r\n**Output:** \r\n1 1 1 1 2 2 3 3 5\r\n**Input:** \r\n\r\n**Output:** \r\n

So I gave a Backtracking solution for the first question. The time complexity was high and I wasn't able to reduce it(Though I coded the backtracking solution correctly).

Question 2:

B, C, D reports to A\r\nE, F, G reports to B\r\nH, I report to C\r\nJ, K, L reports to H\r\nM, N reports to K\r\nO, P reports to M\r\nQ, R, S reports to N\r\nT, U, V, W, X, Y, Z reports to O\r\n

Input: \r\nEmp1: O\r\nEmp2: M\r\n**Output:** \r\nC

This was the second question nothing else was given. I had to figure out what I have to do with this.

He told me that I have to design a Data structure to hold all this information and make a proper program to show how I was going to store values in the Data Structure.

After that solve the question for the given input.

In place of A, B, C, D etc there can be a Unique ID for each employee and there can be unlimited people reporting to one person. For the second question, I build an N-Ary Tree for the solution, basically, the output was the Least Common Ancestor of the input values.

So I made a program for the whole structure with whole Input and Output (Including how I will put the given data into the Data Structure). \xc2\x80

I wasn't able to reduce to time complexity of the solution he asked me to solve this in O(1) or O(N).

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Amazon Interview Experience for FTE | On-Campus 2020(Virtual)

- Difficulty Level :\nHard
- Last Updated :\n27 Nov, 2020

Online Coding Round: 2 Coding questions based on tree and graph.

Round \xe2\x80\x93 1 (60 Minutes):

1. In a range of m and n print all the numbers having consecutive difference 1 between digits. (3 Approach)
2. Arrival and Departure of the train is given, you have to calculate the minimum number of Stations(2 Approach)

Round \xe2\x80\x93 2 (60 Minutes):

1. Given an array of candidates of a marathon, such that for every a[i], a[i] comes before i+1.(2 Approach)
If a[i]= -1, that means a[i] is the winner.\xc2\xa0
Output the array with the ranking of candidates
2. Minimum number of Steps Knight will require reaching x,y position in infinite size Chess Board(2 Approach)

Round 3 \xe2\x80\x93 (1 hr 45 Minutes):

1. Tell me About Yourself
2. Given a String having 0 and 1. Have to convert that string such that all 0 comes first and all 1 comes after 0 in a minimum number of flips

\xc2\xa0Ex.\xc2\xa0

00001000110111 output->2

3. Symmetric Tree(2 Approach)
4. \xc2\xa0kth largest element in running stream.(2 Approach)
5. Sorting(merge, Heap)
6. Heap sort Implementation
7. Thrashing
8. Deadlock
9. Polymorphism
10. Run-Time Polymorphism vs Compile Time Polymorphism (Example)

11. Inheritance vs Composition (Example)

12. TCP vs UDP

13. SQL vs NO SQL

14. Reason for Deadlock to occur

15. What happens when you type www.facebook.com

They took only 1 student and I can't make it.

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Amazon Interview Experience for SDE-1 Internship

- Difficulty Level : \n[Medium](#)
- Last Updated : \n26 Nov, 2020

Amazon came for On Campus Recruitment for SDE Internship in September 2020 to our university.

Students of B.Tech CSE, IT, ICT, MCA, and M.Tech CSE with CGPA 6 and above and no standing arrears were allowed. Totally 546 students wrote the online test which was on the AMCAT platform.

Online Test:

The online test consisted of 4 sections:

1. Debugging (C, C++, Java, Python in any of the language \xe2\x80\x93 20 mins time and it was pretty straight forward)
2. Coding (2 questions) \xe2\x80\x93 90 minutes -These were the questions I got:
 1. [Given an array A\[\] and a number x, check for pair in A\[\] with sum as x.](#)
 2. [Check if a binary tree is subtree of another binary tree](#)
3. Psychometric test \xe2\x80\x93 not timed \xe2\x80\x93 had some behavioral questions
4. Aptitude and logical reasoning

From this 48 students got selected for the 1st F2F interview and 1(that was me) got selected for both the 1st and 2nd F2F interview.

1st F2F interview: The interview happened in the Amazon Chimes app. So first the interviewer gave an introduction of himself and asked for my introduction.

Then he asked to solve 2 coding questions

1. [Level order traversal in spiral form.](#) I failed to give optimal solutions using a double-ended queue and I lost my hopes here.
2. [Connect n ropes with minimum cost.](#) I solved this question with the normal and optimal solution, and then discussed the complexities. The interviewer was satisfied with the solution to this question.

2nd F2F interview: The interviewer asked for an introduction and discussed the projects and technologies used from my Resume.

Then 2 problems were asked for coding.

1. Given a matrix filled with 0 and 1, 0 representing empty land and 1 representing an office building, find the optimal position to build a house such that the sum of the distance to all the offices is minimum.
2. [Count ways to reach the n\xe2\x80\x99th stair.](#) I solved both the questions, and we discussed the complexity and solutions.

After this, he asked some situation based questions and managerial questions.

6 people were offered internships.

Tips: Going through the problems in Geeks for Geeks tagged with Amazon is more than enough for cracking this interview. We have to be thorough with different approaches and the optimal approach.

Should know the complexities of the solutions given. If you don't have much time past Amazon interview experiences will help you. Finally stay calm and don't panic, present yourselves with full confidence.

All the best !!!

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Amazon Interview Experience

- Difficulty Level :\n[Easy](#)
- Last Updated :\n26 Nov, 2020

Round 1: Around 10 easy level questions on debugging.

Then 2 coding questions

- Longest Palindromic Substring
- Variation of closest K pair. You just have to identify the question.

3-behavioral type questions around 50

Round 2(Interview on Amazon Chime): I had lost all the hopes of an interview? Because there was no notice for further rounds. After the amount the notice came. I was one of the students who was selected for interviews.

At the time of the Interview, my internet connection got cut. HR called me and reschedule my interview. At the time of the interview, there was a problem in earphones. The interviewer was not able to hear me properly. He gave me some time and I took earphones from my friend.

Finally, the interview started First, he asked me about myself. Then told me that we first discuss the approach then move to code.

Then he gave me a question\xc2\xa0

- Implement a LIFO data structure that has Push, POP, Get middle element, Delete middle element functions.

He was very friendly whenever there is a clash he was giving me chance to speak.\xc2\xxa0

I first started with the array approach then he asked Can we use a Linked list? Then I told some the approach with the Linked List and he also asked me the advantage of using LL. In the meanwhile, I realized that we could not get the correct answer after deleting some elements if I use LL. So I told him about DLL. He again asked me about the Time and space complexity of using DLL.

He was verifying each and every step.

The discussion went for around 40-45 minutes. We discussed all the approaches.\xc2\xxa0

Then he asked me to write readable code.

- I wrote then he verified the code. There was a silly error in the delete middle element function. He told me about that.

In the end, he gave me the opportunity to ask questions I asked two. Then the interview ended.

The result came after 15 days.

Verdict: Selected

They judge only on the basis of skills. So be calm and confident during the interviews. Tell whatever approach comes to your mind.

All the best.

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Amazon Interview Experience for SDE-1 (1 year Experienced)

- Difficulty Level :\nEasy
 - Last Updated :\n24 Nov, 2020

I got this opportunity during the COVID time and hence all the interview rounds were conducted on Amazon Chime (video call) and I had to write the code on LiveCode (a shared IDE) which was visible to both me and the interviewer.

First-round (Online Test)

- There is a matrix containing 0,1 and 9. You need to start from the top left and reach the cell containing $\text{xe2\x80\x989}\text{xe2\x80\x99}$. There is only one such cell containing 9. xc2\xa0 You can move on to the cell containing $\text{xe2\x80\x980}\text{xe2\x80\x99}$. A cell containing $\text{xe2\x80\x981}\text{xe2\x80\x99}$ is an obstacle and you have one jump which you can use to cross the obstacle. We need to find the minimum number of steps required to reach the cell containing $\text{xe2\x80\x989}\text{xe2\x80\x99}$ from the top left of the matrix. (I applied BFS and it worked for me)
 - There is a list of Amazon orders, with each of them being represented by a string. Each of the strings was of the format $\text{xe2\x80\x98X XXX YYY ZZZ}\text{xe2\x80\x99}$. We need to sort these based on a few priority conditions.

Solution: I used the sort function of C++ STL and wrote a custom comparator function)

Second Round:

- Given an input string and q number of operations that need to be performed on it. There are three types of operations.
 - 1 \xe2\x80\x93 reverse the string
 - 2 1 a \xe2\x80\x93 insert the input character (here \xe2\x80\x98a\xe2\x80\x99) in the front of the current string
 - 2 2 a \xe2\x80\x93 insert the input character (here \xe2\x80\x98a\xe2\x80\x99) in the back of the current string

Solution: Firstly I gave the approach using a doubly-linked list, but he wanted to use the same string variable to perform operations instead of making a DLL. As the insertion in the front on the string is a costly operation, so we can keep the front insertions in a vector and when all the operations are completed we can then make a string out of those characters and add a prefix to the current string in which all the reverse operations and insertions at the back has been performed.

Also we need to maintain a `\xe2\x80\x98flag\xe2\x80\x99` which is toggled based on the reverse operation (as soon as there is an operation of type `\xe2\x80\x981\xe2\x80\x99` (reverse), toggle the value of flag)

* Case 1: flag == false
\xc2\xa0 \xc2\xa0 \xc2\x0\xe2\x80\x93 front operation: needs to be added to the front_vector
\xc2\xa0 \xc2\xa0 \xc2\x0\xe2\x80\x93 back insertions: insert the character at the back of the original string (concatenation)

* Case 2: flag == true
 $\backslash xc2\backslash xa0 \backslash xc2\backslash xa0 \backslash xc2\backslash xa0\backslash xe2\backslash x80\backslash x93$ front operation: insert the character at the back of the original string (concatenation)
 $\backslash xc2\backslash xa0 \backslash xc2\backslash xa0 \backslash xc2\backslash xa0\backslash xe2\backslash x80\backslash x93$ back insertions: needs to be added to the front, vector

Also, before generating the final string, you need to check if the flag is true means the string is reversed, so based on that you need to generate the output string (I missed this case, when the interviewer pointed out I incorporated this).

Dry Run Example:

abc -> input string(lets say \xe2\x80\x98s\xe2\x80\x99)

5 -> number of operations \xc2\xa0 \xc2\xa0

1 \xc2\xa0 \xc2\xa0 -> \xc2\xa0 \xc2\xa0 \xc2\xa0s = abc (front_vector {}, flag= true) \xc2\xa0
2 2 a \xc2\xa0 \xc2\xa0 -> \xc2\xa0 \xc2\xa0 \xc2\xa0s = abc (front_vector {a}, flag= true)
2 1 b \xc2\xa0 \xc2\xa0 -> \xc2\xa0 \xc2\xa0 \xc2\xa0s = abcb (front_vector {a}, flag= true)
1 \xc2\xa0 \xc2\xa0 -> \xc2\xa0 \xc2\xa0 \xc2\xa0s = abcb (front_vector {a}, flag= false)
2 1 x \xc2\xa0 \xc2\xa0 -> \xc2\xa0 \xc2\xa0 \xc2\xa0s = abcb (front_vector {x,a}, flag= false)

Front insertion string: xa

Output (Final string): xaabcb

\xc2\xa0

- <https://www.geeksforgeeks.org/find-the-farthest-smaller-number-in-the-right-side/>

This round went for around 1.25 hours and I solved both the questions.

Third Round:

- Merge two sorted linked lists (<https://www.geeksforgeeks.org/merge-two-sorted-linked-lists/>)
- Trapping rainwater problem (<https://www.geeksforgeeks.org/trapping-rain-water/>)

This round went for around 1 hour and I solved both the questions.

Fourth Round (Hiring Manager):

- Started with an introduction and then moved on to a detailed discussion about the project with my current employer which included
 - What was my role?
 - What components did I work upon?
 - How were the components tested?
 - What was the size of the user base?
 - How were the bugs reported and handled
- Behavioral Questions:
 - Tell me a situation where you worked on a tight deadline
 - Tell me a situation where you took a decision
 - Tell me a situation where you worked for a client requirement and delivered it within the deadline.

This round went for around 1.25 hours and for the behavioral questions you need to follow the STAR (S \xe2\x80\x93 situation, T \xe2\x80\x93 task, A \xe2\x80\x93 action, R \xe2\x80\x93 result) method.

Fifth Round (Senior Dev Manager):

- Started with an introduction, a brief discussion about the project with the current employer
- Anagram (<https://www.geeksforgeeks.org/check-whether-two-strings-are-anagram-of-each-other/>). \xc2\xa0 solved the question quickly but there were few exceptional \xc2\xa0cases which can be handled and this will reduce the complexity for them. As the interviewer pointed out the cases, I incorporated the changes in the code, and he was satisfied.
- Behavioral Questions:

- Tell me a situation where you worked on a tight deadline
- Tell me a situation where you went out of your comfort zone to learn and delivered something.

This round went for around 45 minutes.

Verdict: \xc2\x80Selected \xf0\x9f\x99\x82

Tips:

- For coding interviews, you will first need to explain your approach verbally and then if the interviewer is satisfied with the runtime complexity, he will ask you to write the code with proper syntax. You will not have to take input, just take the input as function parameters and write the complete logic in the function). Practice on explaining your approach.
- For behavioral questions, find the set of questions [https://leetcode.com/discuss/interview-question/437631/Amazon-Leadership-Principle-\(Behavioral\)-Questions](https://leetcode.com/discuss/interview-question/437631/Amazon-Leadership-Principle-(Behavioral)-Questions). Here is a nice simple blog explaining the process of behavioral interviews at amazon (<https://interviewgenie.com/blog-1/interviewing-at-amazon-behavioral-interview-questions>)
 - Make a list of tasks that you did
 - For every question try to fit those tasks into the situation
 - For every question be ready with at least two tasks.

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Amazon Interview Experience for SDE-1 (2 Years Experienced)

- Last Updated : \n 23 Nov, 2020

Applied for SDE-1 @Amazon through Jobs Portal for Bangalore Location. Total 5 rounds (all Online) were taken including Written Test. Below is my experience.

Round 1 (Written Test 1.5 hours):

2 coding questions:

1. Don't remember the exact question but it was String-based Custom Sorting.
2. Given an M*N chessboard find minimum steps for the knight to move from the given source to destination.

Round 2 (Technical 1 hour):

Introduction + Project Intro + 2 coding questions:

1. Given 2 strings with R, G, B letters calculate hits & pseudo-hits (same letter at same index in both Strings => Hits & same letter at different indexes => pseudo-hits. Hits not to be counted in Pseudo-hits)
2. LRU-Cache

Round 3 (Behavioral + Technical 50 min): Introduction + Project Intro + Situation based questions + 1 coding questions:

1. Tell me a time when you had to deliver a feature in less amount of time.
2. Given a chance how would you like to change your project workflow for a Better User Experience?

(2 more situation based questions I don't remember)

Coding Question:

1. Given an Infinite String of R, G, B letters rearrange string such that all R's come before all G's and B's (We have to do in 1 pass as it is infinite)

Round 4 (Behavioral + Technical 45 min): Introduction + Project Intro + Situation based + 2 coding questions:

1. What technologies do you use in your project? Why is that best for the project?
2. Why did you choose that approach for the feature delivery (1 one of the features I had implemented)?

Coding Questions:

1. Convert Ternary Expression to Binary Tree
2. Distribute Candies

Round 5 (Behavioral + Technical 1 hour Bar Raiser with Sr. Manager): Introduction + Project Intro + Situation based + 2 coding questions:

1. Tell me a time when you disagreed with your teammate.
2. Tell me a time when your manager gave you negative feedback. What did you do after that?

Coding Questions:

1. Given an M*N matrix consisting of 1 person in every cell, there is Covid Person in between. Find the minimum time it takes for the whole matrix to get infected. Infected Persons can infect persons to their Left, Right, Top & Below.
2. Follow-Up Question: Count the same when there are multiple Covid infected people in the matrix.
3. Reverse Linked List in size of K.

2 days after BR I was informed I have been selected \xf0\x9f\x99\x82\xc2\xa0

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Amazon Interview Experience for SDE Internship (Off-Campus)

- Difficulty Level :\nBasic
- Last Updated :\n20 Nov, 2020

I applied through Amazewit (collective industry wide initiative looking to shape the talent landscape and help women make better career choices) and the eligibility criteria for the role was CGPA should be above 6.5/10 and no backlogs and it was for girls of session 2021-2022. The students who were eligible got a test link which consists of 4 sections. The test was held on AMCAT platform.

- **Debugging:** This portion of the online assessment was allotted approximately 20 minutes to complete and was asked to find bugs in seven pieces of code.\xc2\xaa0
- **Logical Ability:** There were 24 questions to be completed in 35 minutes. It was all based on qualitative aptitude such as blood relations, complete series, etc.
- **Coding:** There were 2 questions to be completed in a time span of 70 minutes. We were allowed to use Java, Python, C#, or C++. One question falls under Backtracking and another Hashing. The Questions were LeetCode Easy-Medium.
- **Work Styles Assessment:** This was built around Amazon\xe2\x80\x99s Leadership Principles, and typically took 10-15 minutes to complete.\xc2\xaa0

After around 10-15 days, I got a mail stating that I have cleared the online assessment, and they asked me to apply on their amazon. Jobs portal and after the resume shortlisting I got an email that I am selected for the interview. The interview was scheduled after a week and it was the last round to be selected for the internship.

Interview Experience: He asked me 2 questions one on LinkedList and another on Binary Trees and I need to code it up and also some questions around the Operating System.

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Amazon Interview Experience for 6-Months Internship

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 20 Nov, 2020

Amazon visited our campus (MNIT JAIPUR) for 6 months summer internship programs. Eligible branches were CS ,EEand ECE.

Round 1: Online assessment consisting of 4 sections conducted on the AMCAT platform.

Code Debugging: 7 questions C/C++/Java (20 minutes)

Coding: 2 questions (70 minutes)

1. [Merge two sorted linked lists](#)
2. [Check if a binary tree is subtree of another binary tree](#)

Workstyle Assessment: (20 minutes)

Reasoning Ability: 24 questions (35 minutes)

Technical Round 1(90 minutes): First, the interviewer asked me to introduce myself. Then he directly jumps to coding questions.

1.) [Median of Stream of Running Integers using STL](#)

Initially, I told him the brute force approach using insertion sort, explained to him its complexity. Then he told me to optimise it, I gave him solution using min_heap and max_heap. He seems to satisfy, and he told me to code it.

2) He gave me a tree and ask me to print its different views. He said u have a fixed time(30 minutes), have to code this approach.

- Left -view
- Right-View
- Top-View
- Reverse-Top View

3) Implementation Details of

- LRU cache
- LFU cache
- Mixture of LRU cache and LFU cache

Then he jumps to the operating system and asked me about paging, cache, and what the advantage of caching.

Technical Round 2(50 minutes): After a formal introduction, the interviewer directly jump to coding questions:-

Give me a situation of a company, where a hierarchy of manager. A manager can have a different number of employees who are working under him. Now, this employee can have a different number of workers who are working under that employee. This can be up to any level.

He told me to find the youngest common manager of two workers.

Solution: Basically it's a problem of finding a common ancestor in the n-array Tree.

Firstly I created an n array tree then gave him 2 approaches

- Using recursion
- First, find the path from the root to that worker and then compare the path and check the node just before the first mismatching node.

2) [How to find Lexicographically previous permutation?](#)

3) Maximum Profit using at-most k-transaction

<https://leetcode.com/problems/best-time-to-buy-and-sell-stock-iv/>

I gave him 2 solutions first one was using recursion and top-down approach and the 2nd one was using the bottom approach.

Finally, the result declared after 10 days and two students were selected for the internship. I was one of them.

Thank you Geeksforgeeks for helping me prepare for my interview.

This article is contributed by **Deepak Kumar**.

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Amazon Interview Experience for 6-Months Intern (On-Campus)

- Difficulty Level :\nHard
- Last Updated :\n19 Nov, 2020

Amazon visited our campus(Tier-3) in October and asked us to apply for a job (They provide a Link for the portal). There\xe2\x80\x99s no resume screening for the OA round

Round 1: Online Assessment on Amcat (4 \xe2\x80\x99 sections)

- **Debugging Round**
- **Coding Round**
 - <https://leetcode.com/problems/critical-connections-in-a-network/>
 - <https://leetcode.com/problems/search-a-2d-matrix-ii/>
- **Logical Reasoning (easy questions)**
- **Workstyles behavior questions**

Around 40 students were shortlisted after this round

Round 2 (Technical Interview): Lasted for one hour. Nothing asked except tell me about yourself followed by 2 coding questions

1. Given an array, we need to do the following operations
 - **Operation 1:** Find the sum from the start index to the end index.
 - **Operation 2:** Update an element at a given index.

Solved using segment tree

2. Given a tree find if that tree is a max-heap or not

Round 3 (Technical Interview):

1. <https://leetcode.com/problems/best-time-to-buy-and-sell-stock-iv/>
2. Given a sorted array construct a minimal height BST

Verdict: Selected

4 people were selected from our college

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Amazon Interview Experience for 6 months Intern (On-Campus)

- Difficulty Level :\nMedium
- Last Updated :\n17 Nov, 2020

Amazon conducted 3 rounds.

Round 1: An online assessment that consisted of 4 sections.

1. **Code Debug(20 mins):** It consisted of 6 questions. (Cakewalk)
2. **Work Style assessment(25 mins):** Questions based on Amazon leadership principles
3. **Coding(70 mins):** 2 coding questions
 - Count unique pairs in an array that sum to a given target:
<https://www.geeksforgeeks.org/count-pairs-with-given-sum/>
 - Find if tree S is a subtree of another tree
4. **Logical ability(35 mins):** MCQ based aptitude questions

I was able to solve both the coding questions. 25 students were shortlisted for further rounds.

Round 2: Interview was held on Amazon Chime and LiveCode. The interviewer introduced himself and asked me for the same. After that, 2 coding questions were asked.

1. Implement a LIFO data structure that has the following operations: Push, Pop, GetMiddle, DeleteMiddle.
 I discussed the brute force approach using array along with the time complexities of all functions. Then, he told me to improve the time complexity of DeleteMiddle function. So, I told an approach to use HashMap. The interviewer said to make my own hashmap instead of relying on language. I was not able to come up with a solution. I was asked to code.
2. Pattern-based question:

```
1\r\n11\r\n21\r\n1211\r\n111221\r\nn\r\n
```

I was not able to recognize the pattern.\xc2\xab0

Round 3: Interview was held on the same platform. I introduced myself. 3 coding questions were asked in this round.

1. Given an integer array, find all the numbers which don't have a greater element on its right.
 I explained brute force solution and time complexity(TC: O(n^2), SC: O(1)). The interviewer asked to improve time complexity. I told an O(n) TC solution with O(n) space. We moved on to the next question. I coded the solution.
2. Given an array of stock prices, perform 2 queries.
 - Change the value of the stock at ith index
 - Find minimum stock price within a given range
 I told brute force solution with O(1) and O(n) TC respectively. I was not able to tell the optimal solution for the second query.
3. HOD of your college is supposed to give gifts to students.
 Input Parameters: n(number of students), List of edges representing friends, k(cost of a gift)
 If HOD gives gifts to student A, he will also have to give gifts to all the students whom A considers as his/her friend. If A considers B as his/her friend, it's not necessary that B considers A as his/her friend. Find the minimum cost HOD will have to spend.

For example, if A\xe2\x80\x99s friend is B and B\xe2\x80\x99s friend is C, 3 gifts have to be given.

I told a solution based on DFS. I was asked to code. After explaining the code, he said there\xe2\x80\x99s also an optimal approach. But, we were running out of time. So, he asked if I had any questions.

5 students were selected.

Verdict: Rejected

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Amazon AWS Interview Experience for Cloud Support Associate

- Difficulty Level :\nEasy
- Last Updated :\n12 Oct, 2021

\xe2\x80\x9cDuring our hiring meetings, we ask people to consider three questions before making a decision\xe2\x80\x9a Will you admire this person?\xe2\x80\x9a Will this person raise the average level of effectiveness of the group they\xe2\x80\x99re entering?\xe2\x80\x9a. Along what dimension might this person be a superstar?\xe2\x80\x9d
\xc2\xa0Jeff Bezos

Hello Everyone, I am extremely happy to get selected for the role of **Amazon AWS Cloud Support Associate** in October 2020. The work location was Hyderabad. We had a pool campus drive consisting of some well-reputed Institutions from around Visakhapatnam. I am from Vignan\xe2\x80\x99s Institute of Information Technology. I would love to share my experience and would be glad if it can be of any help to anyone aspiring for the same role in the future. Since we were amidst a pandemic, the entire selection process happened Virtually.

We were given a comprehensive syllabus to prepare from, consisting of topics listed below.

Computer Networking:

- Difference between router, switch.
- What is a Broadcast Domain?
- DHCP DORA process
- DNS \xe2\x80\x93 detailed explanation. TCP/UDP and why?
- Subnetting
- MSS/MTU
- Complete flow when you trigger\xc2\xa0amazon.com
- OSI model with complete details and protocols on each layer.
- TCP and SSL handshake
- Difference between TCP/UDP, examples
- Flow/error control
- What is a firewall, why do you need it?
- OSI Model

Operating Systems:

- OS boot process (Win/Linux)
- Memory management, Memory pages, Buffer, and Caches, Basic commands
- System date/time management, network time protocol
- Managing Users and groups
- File permissions
- Managing software \xe2\x80\x93 installation, uninstall, upgrade, etc.
- Managing system services and background processes
- Remote management of a system \xe2\x80\x93 SSH, RDP, etc.
- Network protocols \xe2\x80\x93 FTP, HTTP (web servers), SMTP (mail server)
- System automation \xe2\x80\x93 cron, batch jobs, windows startup tasks

First Round: Online Examination. (No web proctoring and No negative marking)

The round consisted of 4 stages.

- **Stage 1:** Job simulation. We were given various scenarios with simulated customer emails and were asked to rank the effectiveness of various measures we would take in response to such scenarios. In my opinion, the main purpose of this round was to test how the candidate would assess the importance and the response to a given scenario.
- **Stage 2:** Technical MCQs. The major topics were from Computer Networks, CCNA, and Operating Systems.\xc2\xab
- **Stage 3:** Psychometric and Behavioral test. It tests your personality and attitude.
- **Stage 4:** Personal Experience and Interests in various fields. We were given a list of topics like Networking, Databases, Deployment, Backend Support, Data Analytics, etc. and were asked our expertise in them and what topics interest us the most.

Second Round: Technical Review 1. (Online Video Call via Amazon Chime)

It was a Technical Interview involving mostly Operating Systems concepts. My interviewer was very supportive and had a jovial demeanor. It took 1 hour.

Asked me to introduce myself and if I was comfortable in Windows or Linux Operating Systems. I chose Linux.

1. Booting Process in Detail.
2. Booting Process troubleshooting.
3. Bootable Device not found. Troubleshoot it.
4. SSH connection troubleshooting.
5. How do you check which ports are listening?
6. The device is slowing down, Troubleshoot it.
7. Commands to check for CPU Utilization.
8. TOP and SAR command in detail.
9. Paging Concept.
10. What are System calls?
11. Explain about fork().
12. Explain the Process life cycle or Process States.
13. How to check for Disk Free space.
14. I have disk space available but the file is not getting created. Why?
15. Explain the importance of inodes.
16. The device is Heating up. Troubleshoot it.
17. How do PING and TRACERT commands work?
18. Explain what happens when www.amazon.com is clicked.
19. Explain DHCP DORA Process.
20. Write a program for printing the permutations of a string.

\xc2\xabThird Round: Technical Review 2. (Online Video Call via Amazon Chime)

It was a Technical Interview involving mostly Computer Networks concepts. My interviewer was really helpful in guiding me towards the solutions for the questions whose answers I had trouble arriving at. It took around 1 hour.

1. Introduce yourself.
2. Explain DHCP and DORA processes in detail.
3. What is APIPA?
4. Which messages are Broadcast and Unicast in DORA? Why?
5. Different types of IP Address allocations in DHCP.
6. Will my computer get the same IP address allocated every time?

7. Role of the Router in the separation of Broadcast Domains.
8. DNS Query Process.
9. What happens if we type www.amazon.com. This time, the interview went into depth about the process of questioning various aspects.
10. What are ports and port numbers?
11. Do different tabs making queries in the browser use different port numbers?
12. TCP handshake in detail.
13. Problem on Sequence numbers and Acknowledgement numbers.
14. What is SSL. Explain about Digital Certificates and TLS Handshake.
15. Problem on IP Addressing at the sender, gateway and destination.
16. Packet Tracing.
17. How do we check IP address and Gateway and DNS Server addresses of our device.

Fourth Round: Managerial and Human Resources (HR) Round. \xc2\x80(Online Video Call via Amazon Chime)

I had a very cool and friendly interviewer who asked me to address her by her name. She was very co-operative and engaged in a very friendly talk. She made sure I was very comfortable.

1. Introduce Yourself.
2. Detailed discussion about Projects.
3. Tell me about a time when you handled a task within tight deadlines.
4. Tell me about a time when you failed a deadline.
5. Tell me about a time when you did something out of your comfort zone.
6. Tell me how you handled non-supportive team members in your team.
7. Tell me about a time when you had to take a decision on the spot.
8. Tell me about a time when you had to take critical feedback.
9. Asked me about my interests in competitive programming.
10. Explain Competitive Programming.
11. Tell me about a time when you spent a lot of time in solving a problem.
12. Tell me about a time when you didn't get the solution even after putting in effort.
13. Did you ever ask your peers for help when you were stuck.
14. How did you develop interest on Competitive Programming.
15. How comfortable are you with learning new concepts.
16. How adaptable are you with entering the Networking sphere.
17. Any Questions for me?

After the long grueling process, I got selected for the role. A total of 9 members got selected from my college which was the highest number for any institution participating in the drive. It was a very innovative, interesting and challenging process.

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Amazon Interview Experience for SDE Intern+PPO (On-Campus)

- Last Updated : \n16 Nov, 2020

Amazon visited our campus in September 2020, for the position of **SDE-Intern** and **PPO**. The eligibility criteria were 70% throughout for 10th, 12th, and B.Tech. Around 500 students were eligible for the online round.

Round 1 (Online Round): The online round had 4 sections:

- **Reasoning Ability:** 35 minutes (easy-medium)
- **Workstyle and behavioural assessment:** 20 minutes (easy)
- **Code Debugging:** 7 questions to be debugged in 20 minutes (easy-medium)
- **Coding questions:** There were 2 coding questions.
 1. [Search in a row-wise and column-wise sorted matrix.](#)
 2. [Clone a linked list with next and random pointer.](#)

The analytical questions were easy, and I was able to solve them all. I was able to debug all 7 questions in under 10 minutes. The coding question had 60 minutes allotted. I was able to solve both questions.\xc2\xab0

Only 79 students got selected for the interview rounds.\xc2\xab0

Round 2 (First Technical Interview Round at Amazon Chime): The interview directly started with coding questions and no introduction. I was sent a link to an online editor to write the code.

1. [Count distinct elements in every window of size k.](#)
2. [Convert a given tree to its Sum Tree](#)
3. [Trapping Rain Water](#)

The interviewer wanted to discuss the approach before moving to the code. I started with brute force approaches and then gave the most optimal solution. For the first question, I missed an edge case in the code and the interviewer gave me some hints. I was able to fix the code. I was able to write the code for the second question in one attempt. For the third question, it took me some time to figure out the approach and after some discussion, I arrived at a solution with linear time and space. I wrote the clean code in one attempt. Later, I was told to optimize the space. After 5-7 minutes of thinking, she told me we have to hard stop here as we were running out of time. The interview went for around 1 hour 30 minutes.

21 students got selected for the next interview round.

Round 2 (Second Technical Interview Round at Amazon Chime): It started with small introductions and discussions on projects. He asked me questions about React and API calls which were implemented in my project. The discussion went for around 20 minutes, and we moved to coding problems.\xc2\xab0

1. [A Product Array Puzzle.](#)
2. [Asteroid Collision](#)
3. A very big random scenario was given. The problem statement was not clear to me but after a lot of discussions, it was a simple question of DFS/BFS.

I discussed all the brute force approaches first for all questions and then proceeded to give

optimized solutions. I was able to solve the first question. I missed an edge case in the second question and the interviewer was not satisfied with my solution. I also thought that my solution is incorrect, and we moved to the next question. I was able to solve the third question after discussion and some hints.

Later after the interview when I checked my solution for 2nd question, it was just 4 more lines of code to be written to handle that edge case.

Result: Rejected, 9 students got selected for internship offer of 6 months from January 2021

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Amazon Interview Experience for SDE-1 | 6-Months Intern (On-Campus)

- Difficulty Level :[Medium](#)
- Last Updated :[17 Sep, 2021](#)

Round 1: An online assessment that consisted of four parts:

- **Code Debugging:** 7 questions to be debugged in 20 minutes. (easy-medium)
- **Coding Test:** 2 coding questions to be solved in 70 minutes. (medium)
- **Workstyles assessment:** 20minutes
- **Reasoning ability:** 35 minutes (easy-medium)

38 members were shortlisted for the interviews.

Round 2: It was a technical interview for 1 hour. The interviewer gave her an introduction and asked about me. Then I was given the following questions.

1. <https://www.geeksforgeeks.org/word-break-problem-dp-32/>. Asked me to discuss the time and space complexity of my approach and then to code.
2. <https://www.geeksforgeeks.org/trapping-rain-water/>. I was able to solve this easily and discussed the time and space complexity.

Around 12 members were shortlisted for TR-2

Round 3: It was a technical interview for 1 hour. After a brief introduction the interviewer asked the following question:

1. Given a binary tree, return the sum of all the nodes whose Kth parent (Kth ancestor) value is even. Where $0 < K < 10^7$.

Example:

K=2
8 / \ 2 3 / \ 4 5 7 \ 6 1

- The 2nd ancestor of 4 , 5 ,7 is 8 and 8 is even
- The 2nd ancestor of 6 is 2 and 2 is even
- The 2nd ancestor of 1 is 3 and 3 is odd

Finally, I wrote a code with linear time complexity using post-order traversal.

VERDICT: **SELECTED**

THANK YOU SO MUCH GFG TEAM!

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Amazon Interview Experience for Internship 2021 (On-Campus)

- Difficulty Level :[Medium](#)
- Last Updated :[03 Nov, 2020](#)

Amazon visited our campus (NIT Jamshedpur) in September 2020. Around 120 candidates were shortlisted for round-1.

Round 1: This round was an online coding round held on AMCAT. It consisted of 4 sections.

1. **Code Debug (20 mins):** It had 7 questions which were quite easy.
2. **Coding (70 mins):** It consisted of 2 coding questions.
 - **Question 1:** Merge two sorted linked lists.
 - **Question 2:** Given a list of N packing crates in the facility, any of which is a candidate to be moved to the new facility. The truck is initially at the origin of capacity M. Return the list of M locations closest to the truck.
3. **Work Styles Assessment (10-15 mins):** It was based on amazon leadership principles.
4. **Logical ability (35 mins):** 2 MCQs based on aptitude

30 candidates were selected for the next round.

Round 2(One-to-One Interview) We were provided an amazon chime link for the meeting. First of all, the interviewer introduced himself and asked me to introduce myself. Then he asked me 2 coding questions.

1. Given 2 strings a and b. a represent the first lane in which vehicles move from left to right. The b represents the second lane in which vehicles move from right to left. Vehicles can be B (bike), C (car), T (truck). collision will occur only between two trucks. Find the probability of collision.

Example:

```
a = TCCBCTTB\r\nb = BTCCBBTT\r\ntotal number of collisions=7\r\nProbability of collision = 7/36
```

First I gave the simple solution (time complexity: O(N), space complexity: O(N)), he told me to write the code and then asked me the optimised approach. So I gave a constant space and linear time complexity algorithm and improved the earlier code.

2. Given a binary tree having unique values and an array arr of integers. Return a list of root nodes of every component of the tree after deleting the nodes which are present in arr. I told the O(N) time complexity approach then he asked me to code it. We discussed the edge cases, and I was able to write the full code. He seemed satisfied at this time and asked me to give the brief intro of the project I mentioned in my resume within 30 seconds.

Then we had a 5-10 minute discussion on the questions I asked him. The interviewer was very friendly.

I was expecting to be shortlisted for round-3, but 10 candidates(including me) were offered an internship after the round-2 itself.

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Amazon Interview Experience for Internship (On-Campus)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n01 Nov, 2020

I am a 3rd-year B.tech student at NIT Jamshedpur. Amazon visited our campus for Internships.

ROUND 1: The first round was an online round, and there were 4 sets in this round.

1st set was the code debugging round and there was approx 6-7 code. 2nd round was the coding round and was also quite easy, 3rd was the aptitude round and the last round was the behavioral questions round.

The 2 coding questions in the online round were:

1. [Merge two sorted linked lists](#)
2. There was a 2d matrix with each cell containing a value. we have to consider all paths to reach from the top-left cell of the matrix to the bottom-right cell. We can move in the only bottom or right direction And we have to consider 1 minimum value cell in all paths and then we have to find the maximum all those minimum values.

Example:

array a[3][3]

```
7 10 6
8 5 11
3 4 9
```

Here all possible paths is (7->10->6->11->9), (7->10->5->11->9), (7->10->5->4->9), (7->8->5->11->9), (7->8->3->4->9), (7->8->5->4->9). so here minimum cells in these paths were 6, 5, 4, 5, 3, 4. And so the maximum of these is 6. so 6 is the answer. I solved this with the use of a dp table, by observing i got the relation $dp[i][j] = \max(\min(a[i][j], dp[i+1][j]), \min(a[i][j], dp[i][j+1]))$.

ROUND 2 (Face to Face): This was the final round. there were a total of 2 questions. First, he introduced himself to me and his role in the company, and then he asked me to introduce myself. After that, he jumped straight into the coding questions

1. This question was quite difficult to interpret at first because I think the interviewer was testing that can I implement a data structure here. the question was:- There is an ant colony with n ants. And there will be a total of m interactions between ants. So, (a colony will be good only if all the interactions were between opposite genders). We have been giving the interactions between ants, and we have to find out whether this colony can be good or not. for eg:-

Input: \r\n3 3 \r\n1 2\r\n2 3 \r\n1 3

So there are a total of 3 ants and 3 interactions. ant 1 interact with ant 2, 2 with 3, and 1 with 3. we have to tell whether this colony can be good or not. So here this colony cannot be good, as 1 interact with 2 and 3, so the gender of 2 and 3 should be the same, but 2 and 3 also interact so there is no possible way for this colony to be good

I solved this by implementing a graph in this question and used the concept of bipartite components in this question.

2. [Next Greater Element](#)

VERDICT: SELECTED

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Amazon Interview Experience for SDE | 2-Months Internship(On-Campus)

- Difficulty Level :[Hard](#)
- Last Updated :[01 Nov, 2020](#)

Amazon visited our campus (NIT Jamshedpur) on 3rd October. It consisted of 2 Rounds (1 Online Assessment and 1 Technical Interview)

Round 1: Round 1 was an online assessment that consisted of four parts:

1. **Code Debugging:** 7 questions to be debugged in 20 minutes.(**Difficulty** [Easy](#))

2. **Coding Test:** 2 coding questions to be solved in 70 minutes.

1. [Longest Common Subsequence](#)

2. Given a matrix with r rows and c columns, find the maximum score of a path starting at [0, 0] and ending at [r-1, c-1]. The score of a path is the minimum value in that path. For example, the score of the path 8 2 86 92 4 2 86 92 5 2 86 92 9 is 4. Don't include the first or final entry. You can only move either down or right at any point in time. (<https://leetcode.com/discuss/interview-question/383669/>)

Example: xc2xa0

Input: [[1, 2, 3], [4, 5, 1]]
Output: 4

1 -> 2 -> 3 -> 1

3. **Workstyle assessment (Scaling your ability with respect to different situations and characteristics):** 20 minutes

4. **Reasoning ability:** 35 minutes

Out of 150+ students, 30 students were selected for round 2. I was one of them.

Round 2: Technical Interview (It was held on 25th of October)

First, the interviewer introduced himself and told me to introduce myself. Then he jumped to coding questions as given.

1. There was a family of ants. We need to find if it is a GOOD or BAD family. (Note: A GOOD family is that in which all the interactions between the ants takes place in opposite gender)

xc2xa0
Input : 3 3 (3 ants, 3 interactions)

1 2 (1 interacts with 2 and vice versa)

2 3

The interviewer just showed me the questions and didn't tell anything else, even though I asked him to explain. I have to find the output of the above test case and code accordingly. xc2xa0After 10 mins of thinking, I told him that if we can divide the graph into two parts then we can say that the family is GOOD else BAD. (<https://www.geeksforgeeks.org/bipartite-graph/>)

He asked me to proceed with the code and I wrote the code on the given text editor then he checked it and didn't say anything and moved to the second question.

xc2xa0

2. The second question was to find the distance between the two farthest nodes in a graph.

I told him the brute force approach, he asked me to optimize my code. I tried to optimize the code, but he told me that we were running out of time and if I have any questions. I asked one question about the scope of Deep Learning on Amazon. And then we left the meeting and the interview was over.

xc2xa0

The result was announced on the very next day. **Among 30 students 10 were selected** for the internship and thankfully I was one of them.

Though I didn't receive any acknowledgment from the interviewer neither he explained the question much but I gave him the best answer I could, and I was pretty confident and satisfied with my given answers in the limited time.

Will suggest you prepare and give your 100% and leave the rest. All the very best!

xc2xa0

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Amazon Interview Experience for SDE-1 FTE (On-Campus)

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 22 Feb, 2022

Amazon visited our campus for SDE-1 FTE hiring. There were a total of 4 rounds (1 Coding Test+3 Technical Interviews)

Round 1 (Coding Test): This round had 4 sections, debugging, coding, Workstyle Assessment, and aptitude. Debugging and aptitude were easy and didn't even require any preparation. You just need to be a little quick in all these rounds.\xc2\xab0

In the coding round, 2 random questions were chosen for everybody from this pool of questions.

- <https://leetcode.com/discuss/interview-question/344650/Amazon-Online-Assessment-Questions/>

Try all the questions in the new and old sections.\xc2\xab0

Round 2 (Technical Interview 1):

1. [Two nodes of a BST are swapped, correct the BST.](#)
2. Given a number N, count the number of arrays that can be constructed such that the sum of elements is N. One constraint is that each element should be greater than 3.\xc2\xab0

Example:

Input: 6\n**Output:** 2\n**Possible arrays:** [3, 3], [6]

I gave the recursive solution. They wanted the time complexity of that solution. which was something like $(N-6)^{(N/3)}$. Then they asked for the optimized solution of the same using DP.

Round 3(Technical Interview 2):

1. Given 2 numbers N and M count the number of set bits in them. He first asked me to make a function that returns the number of set bits of a number, then asked to code the solution. He wanted the most optimized solution something like this. <https://www.geeksforgeeks.org/count-total-set-bits-in-all-numbers-from-1-to-n-set-2/> Which I was not able to give.
2. Given dependencies like A->B, C, D and B -> D and D -> E. Print the ordering of the tasks. for ex E D B C D A. I came up with the topological sort solution <https://www.geeksforgeeks.org/topological-sorting/>. He wanted to look for all the edge cases and check if the code was perfect. I found the case when there are circular dependencies and changed the code accordingly.
3. Then he asked for a few OS and networking questions like the Difference between semaphore and mutex, the Difference between TCP and UDP, and what is Banker's algorithm. Then he jumped to my CV and asked about the Internship I did.

Round 4(Technical And Managerial):

For me, the round was only for 45 minutes.\xc2\xab0

1. Given a binary tree find the level with maximum nodes and give the sum of nodes at that level. He wanted me to use just the queue and nothing else, and then he asked to optimize it as the tree is huge. Then he asked for the time complexity of the same. I missed one edge case in this.
2. Tell me about a time when you were faced with a complex problem and what solution you came up with? Then he asked if I could have done anything different and better.

3. Tell me a time when I had to process a lot of data in a small amount of time? Again asked if I could have gone for any different approach.

Check this for more details. https://www.amazon.jobs/en/landing_pages/in-person-interview

In the end, there were 8 students who gave 4 rounds and 6/8 were selected including me

Note: They were very serious about the time complexity of every algorithm. Prepare for the behavioural questions, and read about leadership principles and STAR format, mentioned in the above link.

They wanted the runnable code for every question also covering all the edge cases.

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Amazon Interview Experience for 6-Months SDE Internship

- Difficulty Level :[Hard](#)
- Last Updated :[27 Oct, 2020](#)

Round 1: Online assessment consisting of 4 sections conducted on the AMCAT platform.

1. **Code Debugging:** 7 questions C/C++/Java (20 minutes)
2. **Coding:** 2 questions (70 minutes)
3. **Workstyle Assessment:** (20 minutes)
4. **Reasoning Ability:** 24 questions (35 minutes)

In the coding section, the questions were,

1. [Search in a row-wise and column-wise sorted matrix.](#)
2. [Copy a linked list with a random pointer.](#)

Around 16 students cleared the test out of 185.

Round 2 (F2F Technical Interview): This was held on Amazon Chime(A video calling platform) and the interview lasted for 1 hour.

1. First, the interviewer asked to introduce myself, and then he shared about his role and projects he's working on. It was a 2-3 minute formal introduction and went straight to the coding question.
 2. You are tasked to develop a simple search engine that also takes care of correcting the spelling mistakes and shows the words matching the given word in the dictionary. (It is also given that user can make at most one spelling mistake)
- Input:** D = ["abc", "bcd", "ad", "ab"]
User: 1. "bbc"\r\n Return ["abc"]\r\n 2. "bb"\r\n Return
3. He asked me to explain the approach first.
 4. Firstly, I shared a brute force approach and gave time and space complexities. I was asked to optimize.
 5. I shared a little optimized approach. The interviewer was expecting the most optimized solution.
 6. Finally, I told the trie data structure solution, and then I was asked to code it.
 7. I started coding the solution in the live coding environment and had a continuous talk with the interviewer discussing various edge cases and possibilities. He helped me a lot and was very friendly.
 8. I linking a GFG article for reference but the solution needs to be modified: [Trie-Insertion-and-search.](#)
 9. We then made a dry run through the code and found a bug and fixed it and also discussed Complexities.
 10. This took so much time, the interviewer was satisfied with the code and asked me if I have any questions.
 11. I was asked only one question but some of my friends were asked 2-3 questions in total.

Round 3 (F2F Technical Interview): This was also held on Amazon Chime (A video calling platform) and the interview lasted for 1 hour. The round started with a brief introduction from both the interviewer and me (after around 15 mins another interviewer joined in). He directly headed towards the coding questions.

1. **Asteroid Collision** (<https://leetcode.com/problems/asteroid-collision/>)

We are given an array of asteroids of integers representing asteroids in a row.

For each asteroid, the absolute value represents its size, and the sign represents its direction (positive meaning right, negative meaning left). Each asteroid moves at the same speed.

Find out the state of the asteroids after all collisions. If two asteroids meet, the smaller one will explode. If both are the same size, both will explode. Two asteroids moving in the same direction will never meet.

- Started asking questions to clarify doubts on constraints.
- In a usual way first I shared a brute force approach and gave time and space complexities. I was asked to optimize.
- I gave an optimal stack solution and was asked to code it.
- I missed out edge cases which were later pointed out and I corrected the code.
- Dry run through the code and discussed Complexities.

2. **Single Element in a Sorted Array** (<https://leetcode.com/problems/single-element-in-a-sorted-array/>)

You are given a sorted array consisting of only integers where every element appears exactly twice, except for one element which appears exactly once.

Find this single element that appears only once.

- I shared the brute force approach and was asked to optimize.
- I gave 2 more approaches that were not the most optimized.
- Later I gave Binary Search Modification but couldn't complete the code and was stuck confused wasn't able to figure out what was going wrong.
- After a while, the interviewer asked me to switch to another question.

3. **Sum of all the numbers that are formed from root to leaf paths**

You are given a binary tree, where every node value is a digit (0-9). Find the sum of all the numbers which are formed from root to leaf paths. For example, consider the following Binary Tree.

```
\r\n      6\r\n      / \r\n      3   5\r\n      / \r\n      2   4\r\n      / \r\n      7   4
```

- I shared a solution and the interviewer asked me to explain the question asked.
- I was tensed for not finishing the previous code and misunderstood the question and gave an approach.
- Later I asked questions to clarify my doubts.

There are 4 leaves, hence 4 roots to leaf paths:\r\nPath

Number\r\n6->3->2

- I shared an approach and coded it which had bugs.
- Time was up and the interviewer asked me to stop and asked if I have any questions.

Result: Unfortunately, I did not clear the interview. Only 2 students were selected out of 16.

Tips:

1. Before jumping into the solution, carefully listen and understand the question properly, and avoid any assumptions regarding the problem. Ask doubts and clarify every detail of the question.
2. Stay calm, positive, and focussed during the interview. (Don't talk with peers before the interview)
3. Be clear with your approach and try to consider all possible edge/corner cases.
4. Try to familiarize yourself with the time and space complexity of every part of your approach.
5. Be confident. If you are stuck somewhere the interviewer usually helps you out to find the right path. Just keep thinking aloud.

6. Interviews have a slight luck factor and kind of day dependency. Just be confident and solve all the problems with a positive attitude.
7. Practice questions from GeeksforGeeks and LeetCode and read recent interview experiences.
8. Don't get demotivated by rejections. Just do your best and improve every day, so you don't regret anything from the preparation side.

Some interviews just don't have a happy ending.

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Amazon Interview Experience for 6-Months Internship (2020)

- Difficulty Level :[Easy](#)
- Last Updated :[25 Oct, 2020](#)

Recently Amazon visited our college Campus for SLI.

Selection Process:

- Online Test: Code Debugging 7 questions
- 2 Coding questions
- Workstyle Assessment
- Aptitude

Followed by two Technical interviews on the Amazon Chime Platform.

Online Round: Coding questions were from these set of questions-

- Find if a tree is a subtree of another tree.
- Search in a row and column-wise sorted matrix.
- Bridges in a graph.
- Count all two sum pairs.

Around 280 students appeared for Online Assessment and 38 students were shortlisted for further rounds.

Technical Round 1: Rearrange an array such that positive and negative numbers are at alternating positions. Starting from a positive integer. If there are extra positive or negative numbers place them at the end.

- [Rearrange positive and negative numbers in O\(n\) time and O\(1\) extra space](#). Discussion about all approaches and time complexity of each.

Technical Round 2: Started with introduction and discussion on projects. Then 2 coding questions were asked.

1. [Given a string you have to remove k consecutive occurrences of a character.](#)

Example:`\xc2\xab0`

string="abbbaa" and k=3. So output will be "" \r\nstring ="abbahjjjddj" and k=2. So output will be "h". \r\n

2. [Min steps to reach the end.](#)

3. Discussion on time complexities for each problem.

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Amazon Interview Experience for SDE | Off-Campus (1-1.5 year experienced)

- Difficulty Level :
Hard
- Last Updated :
22 Oct, 2020

Round 1 (Online coding Round): This round was held on Amcat. There were 2 coding questions.

- Given the 2D matrix. Each cell has a value 0 or 1. 1 represents land and 0 represents water. Find the Number of islands.
Example: 1 1 0 0 0 1 0 0 1

Input: 1 1 0 0
0 1 0
Output: 2
0 0 1

Approach: DFS in 2D matrix and take a count of how many times you have to do DFS to cover all 1s.

- You have an array of logs. Each log is a space-delimited string of words. For each log, the first word in each log is an alphanumeric identifier. Then, either:

Each word after the identifier will consist only of lowercase letters, or;

- Each word after the identifier will consist only of digits.
- We will call these two varieties of logs letter-logs and digit-logs.

Reorder the logs so that all the letter-logs come before any digit-log. The letter-logs are ordered lexicographically ignoring identifiers, with the identifier used in case of ties. The digit-logs should be put in their original order.

logs = ["dig1 8 1 5 1", "let1 art can", "dig2 3 6", "let2 own kit dig", "let3 art ze

Approach: Separate letter log and numeric log. Then sort letter log using own comparator then merge letter log and numeric log. After solving these questions there is a section where I have to write the approach in words and have to write time and space complexity. After that, there was a work-life survey and feedback survey section. After this round, I got the mail that I cleared the online coding round and wait until further communication.

After some weeks I got the mail and schedule three rounds of interviews in one day.

Round 2 (online on Amazon Chime): The first interviewer introduces herself then I introduce myself. Then She asked me two coding questions.

- One array is given with size N each index has one value ≥ 0 . This value represents how many maximum steps I can go further. I have to find a number of ways to reach the end of an array. If not possible then return -1.

Input: 1 2 1 4
Output: 2

Explanation: arr[0] = 1 so, I can only go to index 1
arr[1] = 2 so, from here I can go to index 2nd and 3rd.

arr[2] = 1 from here I can go to index 3rd.

possible paths to reach at the end of the array: 0->1->2->3

0->1->3

Answer: 2

Approach: Start from the end and go to the indexes which are possible to go from the current index and take the sum of the number of ways to reach the end from that index. Do it of all indexes from right to left and you will get the number of ways to reach at the end of the array.

Input: 1 2 1 4
Output: 2 2 1 1

Explanation: 1 2 1 4

- For 3rd index: it already ends so set as 1
- 2nd index: arr[2] = 1 so, take the sum of index 3 from the answer and update the answer array ans[2] = 1
- 1st index: arr[1] = 2 so, take the sum of the index 0 and 1 from answer array ans[1] = 2
- 0th index: arr[0] = 1 so, take the sum of index 1st from answer array. ans[0] = 2;
- At the end return ans[0];
- Edge case N=1 return 0.
- Time complexity: $O(n^2)$;

- Given two values l and r. I have to find special numbers between l to r. Special Number: adjacent digit has an exact absolute difference of 1 special number: 10, 12, 21, 23

So, first I gave a brute force approach. Traverse l to r and check number is a special number or not. This approach takes time complexity $O(n * (\text{number of digits}))$. So, she asked me to optimize more. So, I gave some different approaches and in the end, I gave her a queue approach to solving this problem.

Link: <https://www.geeksforgeeks.org/stepping-numbers/>

Round 3 (online on Amazon Chime): In this round interviewer asked me 3 coding questions and some behavioral questions. It starts with my and interviewer's quick introduction.

- There is a 2d matrix of size NxM. Each cell has a positive value. from each cell, I can go only to diagonally right down or diagonally right up. I have to find the maximum sum path from the first column cell to the last column cell. I gave the $O(n^2)$ approach and she was satisfied with that.

C++

2. One array is given of size n . n is always even. There are two players A and B. For each turn, one player can take an element from the start or the end of the array. If a player takes one of the elements then it adds to the sum of that player and removes it from the array. Both players are playing optimally. Have to find the maximum sum achieved by player A.

First I gave to exponential approach using recursion the add memorization in it and make the top-down approach of DP. She was satisfied with my approach.

This is a similar question: <https://www.geeksforgeeks.org/optimal-strategy-for-a-game-dp-31/>

3. There is an array of string. All the string in the array is in camel case. The abbreviation of each string will be the capital letters of that string.\xc2\xa0

I have to make API that where input is as an abbreviation and have to return all strings in which abbreviation has input abbreviation as a prefix. \xc2\xao

Example:

String array: \r\nGoodMorning\r\nGood\r\nGoodNight\r\nLightHouse\r\nAbbreviation of the above strings will be: \r\nGM

For this question, I gave two approaches. First using a map. Where I store the key as a prefix of an abbreviation and value as a vector of string which has this key as a prefix in its abbreviation.

The second approach I gave to use Trie Data structure. She asked me to implement a map approach and write space and time complexity.

After that, she asked some behavioral questions which are base on amazon leadership principles. This interview lasts around one and a half hours.

Round 4 (online on Amazon Chime): This interview was completely based on amazon leadership principles. The interview starts with my and interviewer's quick introduction. He asked about some situations which face in my current company and how I handle it and what was the outcome of that. This round was more interactive round. He asked me 2 small questions. First was what is thread and process and the difference between them. Then he asked me to explain hashmap and hashtable. I know that hashmap and hashtable is a concept of JAVA and my complete experience was C++. So he asked me to explain the difference between a map and an unordered map and its internal working. This interview lasts around 40 min.

After 2 weeks of 3rd round, I got the mail and set 4th round with Software Development Manager.

Round 5 (Bar Raiser)(online on Amazon Chime): The interviewer was Software Development Manager, and he had 9 years of experience on amazon. The interview starts with my and interviewer\xe2\x80\x99s quick introduction.\xc2\xao

1. There is one small toy shop which can contain Maximum X toys. The shop owner has contracted with a toy company that gave supply to the owner on a time basis. So, at one time when new toys arrived, it is possible that the total toys increased more than the limit X. So, the owner has to remove those toys which come first in the shop. The owner has the previous year selling data which shows how many time-specific toys were sold.

I have to make a data structure for two queries.

- When new toys arrived and the limit exceeds X then which toys will be removed.
 - Return max sold toy from last year's data. But that toy should be present in the shop.

For the first query, I suggest deque and map data structure and for the second query, I suggest a map and max_heap data structure. We discuss this approach, and he was satisfied with my answer.

2. He asked me one coding question. There is one binary tree. I have to update the binary tree node value to the sum of the right subtree. Leaf nodes should be as it is.

C++

He asked me some behavioral questions based on amazon's leadership principles. We had a healthy discussion on every question. For each behavioral question, I have to explain the situation and each situation connects with the present company's project. He asked many queries and we discuss that.

After some days I got the mail that I've selected for the SDE-1 profile

Tips:

- Be interactive, as much as possible with the interviewer. If you don't know the solution to the question then tell the interviewer in which way you are thinking. Interviewers are very helpful if you interact with them they will guide you to the solution.
- Write clean and production-ready code and cover all edge cases. The interviewer checks your solution with test cases.
- First, give the brute force approach and then move to the optimized approach. For each question, they want an optimized solution

Thanks, GeeksforGeeks. It helped me a lot in preparation.

Best of Luck!

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Amazon Interview Experience | 6-Months Intern for SDE-1 (On-Campus)

- Difficulty Level :\nHard
- Last Updated :\n16 Oct, 2020

Round 1: Online Test, it was the first round with 4 sections.

1. Code Debugging test
2. 2 coding questions(70 min)
 - [Given an array A\[\] and a number x, check for pair in A\[\] with sum as x](#)
 - [Clone a linked list with next and random pointer](#)
3. Personality Questions
4. Logical Reasoning

Something which I observed and pointed out in round one was, the solution must be most optimized in the coding round and as questions were not with a higher difficulty level, thus must have been solved in lesser time. In my case, I finished the test half an hour before the allotted time.

Round 2 (Technical Interview 60 min): First, the interviewer asked to introduce myself. Then he asked about the projects I did. After an introductory discussion on projects, he gave me 2 coding questions on their personal live code environment.

He asked me to explain the approach first and then code it down. I had to explain the time complexity of each solution and optimal code if possible with lesser time complexity.

1. Given an array, make in-place replacement such that every element is replaced by its greatest element in right.
2. An array with multiple characters(may have more than one occurrences) given with a value K. Makes the minimum number of replacements in the array such that in the resultant array we have only K distinct characters(This question was asked as a word problem with some given conditions.)

Round 3 (Technical Interview 120 min): Similar to the first round there was a brief introduction from both sides. This round was coding plus the kind of HR. After 2 coding questions, I was asked to describe a tough situation which I faced while completing any project of mine, what was my target, what I did to overcome it, and what was the end result.

1. A sequence is given as [T T T T B B B B B B B B B B \xc2\x80 T T] where T denoted the number of TVs bikes and B denoted Bajaj bikes. Write code to count the number of Bajaj bikes in the garage in the most optimal way.

I solved it in O(log n) using binary search.

The second question was typical to understand. And I initially thought that I won't be able to solve it. But the interviewer was very friendly and cooperative. And he made me reach towards the answer with an optimized solution. I was asked to write a complete working function for this one.

2. You are given a bulk of data of 10Mbs and you have a 1Mb RAM available with you. How would you sort the complete 10 Mb of data using this RAM?

The first approach I explained it using merge sort. But it was not that optimized. I was also asked to explain the complexity of each function of the merge sort in every pass. This was something like merging N arrays.

At last, I gave a solution using heap with lesser time complexity, and the interviewer was satisfied by it in last.

15 students were selected among 38 in the interview rounds and I was one of them.

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Amazon Interview Experience for SDE-1 | 6-Months Internship (On-Campus)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n16 Oct, 2020

Round 1 (Online Assessment): This was conducted on AMCAT. It had 4 sections (total 2.5 hrs)

1. **Code debugging section** \xe2\x80\x93 7 questions, C/C++/Java (20 minutes)
2. **Coding section** \xe2\x80\x93 2 questions (70 minutes)
3. **Workstyle assessment** (20 minutes)
4. **Reasoning ability** \xe2\x80\x93 24 questions (35 minutes) \xe2\x80\x93 we could not skip and return to a question

38 students were selected for online interviews.

Round 2 (F2F Technical Interview): This was conducted on their own platform Amazon Chime (1 hr). First I had to give an introduction about myself. Then 2 coding questions were asked.

1. [Clone a binary tree with random pointer](#). I discussed the hashing approach, he then asked me to code it, then we discussed time complexity.
2. [Add all greater values to every node in a given BST](#). First I gave him brute force approach $O(n^2)$, then a better approach $O(n\log n)$, then reverse order traversal approach $O(n)$.

Round 3 (F2F Technical Interview): Again a brief introduction about myself. Then 2 coding questions were asked (1 hr).

1. **Rotten oranges** \xe2\x80\x93 [Minimum time required to rot all oranges](#).
2. **Peripheral traversal of binary tree** \xe2\x80\x93 [Boundary Traversal of binary tree](#).

15 students got the offer for an internship, I was one of them. \xc2\xab\xc2\xab

Note:

1. Even if you are not able to give the correct solution, try to build your solution considering all the cases given by the interviewer. I did the same in one question and it really helped.
2. Amazon focuses only on DS Algo and its leadership principles.
3. They ask questions mostly on Tree, Graph, DP, Stack (in the decreasing order of frequency)\xc2\xab\xc2\xab

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Amazon Interview Experience for SDE | 6-Months Internship (On-Campus)

- Difficulty Level :Medium
 - Last Updated :15 Oct, 2020

Amazon visited our university (Thapar Institute) for **hiring interns** (6 Months internship) in the month of **September 2020**. The entire process was **virtual** due to the COVID pandemic. There was **no CGPA cut**. Branches allowed were **CS, ENC, ECE, EIC, and EE**. Around 600 students gave the test.

1st Round (Online Test): The test consists of four sections.

1. **Code debugging section (20 minutes):** 7 questions were there. We had to find the logical error in the given code snippet and to correct the same. This section was easy.
 2. **Coding test (70 minutes):** 2 coding questions were asked and everyone had a different set of questions.
 - [To find an element in the row-wise and column-wise sorted matrix.](#)
 - [To check whether one tree is a subtree of the second one or not.](#)
 3. **Workstyles assessment (20 minutes):** These were some behavioral questions.

4. Reasoning ability section (35 minutes). Around 24-

2nd Round F2F Interview on Amazon Chime(1 Hour Long): The interviewer went through my resume. Then, he directly jumped to coding questions. \xc2\xa0

1. For an N-ary tree, print its apex. Apex is defined as the first and the last element at each level. Firstly he asked to code the function part only. Then, he asked me to write the full code that is to write the main function also.
 2. For a string prints its previous lexicographic permutation. I wrote the code for this, and then he asked me for some optimizations in some parts of the code. In the end, he asked me if I have any questions.

About 60%-65% of the students made it to the second interview.

3rd Round F2F Interview on Amazon Chime(40-45 Minutes Long): The interviewer went through my resume. Then, he directly jumped to coding questions. I was asked two questions in this round.

Given a tree-like-

1 \r\nn / \\ \r\nn 2 3 \r\nn / \\ / \\ \r\nn 4 5 6 7 \r\nn / \\

Where the elements are continuous integers starting from 1. All the levels except the last one are completely filled. I have to check whether a given element exists in the tree or not.

- First I gave the approach for comparing each and every node with the given value using recursion. Time complexity $\mathcal{O}(n)$.
 - He then asked me to optimize the solution (Expected time complexity $\mathcal{O}(\log n)$).
 - I came up with the approach that we can check for the left-most node at each level as it is always a power of 2. But this didn't work out.
 - Then, I saw there is a relation that **children of a node** $\mathcal{O}(2^i)$ and 2^{i+1} and for every **node** $\mathcal{O}(x80 \times 98 \times x81 \times x99)$, its parent is $i/2$. So, if I want to search for 11, then I will start from 11 -> parent of 11 will be $5(11/2)$ -> parent of 5 will be $2(5/2) \rightarrow$ parent of 2 will be $1(2/2)$. So, I have to just traverse the path $1 \rightarrow 2 \rightarrow 5 \rightarrow 11$.
 - Then, I wrote the code for this approach and the interviewer was satisfied with the code.

In the above tree, I have to find the maximum value present in the tree.

He asked to use the above approach for this question. So, I came up with this approach-

The maximum value node will always be present in the last level. So, the answer will lie in the range $\lfloor \frac{n}{2} \rfloor$ to $2^{\lfloor \log_2 n \rfloor}$. So, then apply binary search in this range and check whether the mid-value exists or not. Time complexity $\log n * \log n$.

In the end, he asked me if I have any questions. This interview ended.

Got Selected.

The results came the next day in the morning. A total of **17 students** were selected for an internship, and I was one of them :-).

I would like to thank Geeksforgeeks which really helped me a lot with the interviews \u26a0

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Amazon Interview Experience for SDE Intern | On-Campus 2020

- Difficulty Level :[Medium](#)
- Last Updated :[14 Oct, 2020](#)

Round 1: Round 1 was an online assessment that consisted of four parts:

1. Code Debugging 7 questions to be debugged in 20 minutes.
2. Coding Test 2 coding questions to be solved in 70 minutes.
3. Workstyles assessment 20minutes
4. Reasoning ability 35 minutes

Round 2: Shortlisted students from Round 1 went through round 2 which was a technical interview Round.

The interview was held on Amazon Chime. The interviewer was very nice. After 2-3 minutes of introduction, he went straight to Coding questions. I was given a link to the code editor, and he explained to me the problems. The interview lasted approximately 60 minutes.

1. [Check if a binary tree is BST or not.](#) The interviewer asked me to first tell the approach. After I solved it, I was asked about the time and space complexities.
2. Given an array of strings containing only lowercase alphabets, return a string of 26 English lowercase alphabets in which the alphabets are in the same order as in the array of strings. The strings in the array do not contain repeating characters.

Example: abcdefghijklmnopqrstuvwxyz

Input : {"abc", "def", "qrs", "uvwxyz"}
Output : abcdefghijklmnopqrstuvwxyz

The first round was only about two coding problems to test your knowledge of data structures and algorithms. I was not able to solve the second problem. I couldn't make it to the 2nd technical interview.

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Amazon Interview Experience for SDE-1 | 6-Months Internship (On-Campus)

- Difficulty Level :[Medium](#)
 - Last Updated :[13 Oct, 2020](#)

Online Test: It consisted of 4 sections:

1. Debugging Question (Level was quite easy)
 2. Coding Section\xc2\xa0

- Create Music Recommendation System for Amazon Prime(Almost Similar to the below link).

<https://leetcode.com/discuss/interview-question/861432/>

- Find Maximum Average in n-ary Tree.

<https://leetcode.com/discuss/interview-question/349617>

3. Work-Life assessment (Basic Situational Questions)
 4. Aptitude and logical reasoning (You should keep track of time while solving this section)

Out of around 2500 students who participated in the 1st round, 70 were shortlisted for the next round.

Technical Interviews (On amazon chime): The Interview was of 60 min (approx). For the first 5 minutes, I gave my introduction and after that, the interviewer gave his introduction and his position and current project at Amazon.

1. The first question was to find the complexity of the following program:

C++

Gave the Answer and formula for the complexity of code. The Interviewer told me that it is Correct.

2. The second question was to find the GCD of numbers between the given range(l,r) in an Array. I came up with the brute force approach and explained it to him. But he asked me to code only in

Optimised Solution. Unfortunately, I was not able to code the Optimised Solution (Segment Tree Approach) but explained it to him.\xc2\xab0

3. [The third question Bitwise XOR of two numbers in an array](#).I asked him for the input constraints and came up with optimised approach, and he was satisfied with the explanation. Then he asked me to code it. I wrote the code, and he pointed out that I have missed an edge case. Corrected the code, and he told me that my solution is correct.

Note:

- Ask as many questions as you can.
- Always ask about the input constraints before coding your solution.
- Be Confident and Share your thoughts with the Interviewer during the entire Interview.

Results are expected to be declared for the next round.

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Amazon Interview Experience for SDE Internship | AmazeWoW 2020

- Difficulty Level :[Medium](#)
- Last Updated :[04 Mar, 2022](#)

Round 1 (Online Test): Online test was conducted on Mettl platform. The duration was for 1hr 30 min. It was webcam proctored and consisted of 28 MCQs and 2 coding questions. MCQs were based on data structures, predict output, C++, and algorithms.

Round 2: The interview started with tell me about yourself. After that, he asked coding questions.

1. Find the longest substring containing distinct characters.

Ex:

Input: abbabcd
Output: 4

Reference:<https://www.geeksforgeeks.org/length-of-the-longest-substring-without-repeating-characters/>

2. Given preorder and pre_LN that contains whether the node is leaf nodes or not, construct a binary tree.

Ex: 1 2 45 3 5
N N L L L
Tree: 1 / 2 / 5 / 45

Reference:<https://www.geeksforgeeks.org/construct-a-special-tree-from-given-preorder-traversal/>

The duration was for **1 hour**.

Round 3: The interview started with tell me about yourself.

1. A bag contains magic balls. Each ball has a specific weight. Every time, balls with two highest weight are removed (let the balls be X and Y) and collision which may or may not result in a new ball following the given constraints :

- Case 1: If $X > Y$ then they result in a new ball of weight $X - Y$
- Case 2: If $Y > X$ they result in a new ball of weight $Y - X$
- Case 3: $X = Y$ No new ball
- Example: [2,4,6,8]
◦ Pick 6,8 → New ball=2 → Array becomes [2,4,2]
◦ Pick 4,2 → New ball=2 → Array becomes [2,2]
◦ Pick 2,2 → Array is empty → return 0
◦ Example2: [3,10,17]
◦ Pick 10,17 → New ball=7 → Array becomes [3,7]
◦ Pick 3,7 → New ball=4 → Array becomes [4]

Since the array contains only 1 ball, return its weight → return 4

2. There are n workers, each having some capacity. The workers are given rotis based on their capacity, i.e workers with a higher rating will get a more number of rotis. A worker can only know the rotis and capacity of two of his neighbors, one on the left and other on the right. Given an array specifying the capacity of workers, find the minimum rotis that should be given for each worker, so that no worker feels unfair.

Example: 1 3 5 4 (ratings for 4 workers)

Input: 1 3 5 4 (ratings for 4 workers)
Output: 1+2+3+2 = 7

Example: 5 3 4 2 1 6

Input: 5 3 4 2 1 6
Output: 2+1+3+2+1+2 = 11.

3. Since there was time left, he asked ACID properties in DBMS and mutex, semaphores, deadlocks (operating system concepts).

The duration was for 1 hour.

Result: Selected

GeeksforGeeks has been very helpful for my preparation. Thanks a lot!!

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Amazon Interview Experience for 6-Months SDE Internship

- Difficulty Level :\n[Hard](#)
- Last Updated :\n12 Oct, 2020

Round 1 (Written Round): It consisted of mainly 4 sections.

- **Debugging Round:** 7 codes to debug in 20 minutes
- **Coding Test:** 2 coding questions in 70 mins
- **Personality Assessment:** No time limit given (Ideally takes 15-20 mins)
- **Reasoning Ability Section:** 24 questions in 35mins

In the coding section there were 2 questions:

1. [Given two sorted linked list. Merge them into one and return the head pointer.](#)
2. [Find critical connections \(Bridges\) in a graph.](#)

Those who cleared all the test cases in both questions were further selected for the Interviews.
(37/200 cleared)

Round 2 (Technical Interview): It started with a formal introduction. The interviewer told that this round will last for an hour and 2 questions will be asked. So make sure to complete the code of each question within 30 minutes individually. A codeshare link was given for the writing code.

The interviewer was really friendly and was expecting the most optimized solution for the same. The interviewer also helped a lot in various approaches and was asking for edge cases for the approaches.

Question 1: Given, product ID and sales of the particular product, design a data structure to display the top N trending products by sales and also make a function to update the sales value.

Solution: Use a modified max-heap. Make the structure and implement the functions like maxHeapify, extractMax, increase/decrease key. In the max Heap, the array should be of pair<int, int> to store both product ID and sales.

Question 2: Implement locking in a binary tree. A binary tree node can be locked or unlocked only if all of its descendants or ancestors are not locked. For reaching the optimized solution, you are allowed to change the structure of the tree.

The interviewer helped in the process and gave 1-2 hints, which I could catch.

Link: <https://www.dailycodingproblem.com/blog/lockable-binary-trees/>

This round was not an elimination round and everyone proceeded for Round 3.

Round 3 (Technical Interview): The interviewer asked me to introduce myself and asked about the projects. A few cross-questioning followed and then the interviewer told that again 2 coding questions will be asked within the time span of 1 hour. Make sure to not exceed the time.

Question 1: Given a string and an integer k. A group of k identical characters is to be removed any number of times until it is no longer possible.

Solution: Used a stack and then kept on comparing the character to be added with the top of the stack (k times). Time Complexity: O(nk)

The interviewer asked for further optimization, used pair<char, int> in the stack to store the characters and its continuous occurrence.

(Link: <https://www.geeksforgeeks.org/reduce-the-string-by-removing-k-consecutive-identical-characters/>)

Question 2: Given a 2D grid, containing multiple people, open points, and blocked locations. A person can move in four directions (up, down, left, right). Find the min distance for each open point from its nearest person. If any open point is unreachable, store -1 in it.

Solution: Consider a queue and store the coordinates of each person in that queue. After that create a distance array of the same dimension (Initialized as INT_MAX). Apply BFS for each person and keep on finding the min value possible for all the points in the grid. The interviewer helped in arriving at this approach.

Finally, it was told that the interviews round are over and the results will be out soon.

Verdict: Selected \xf0\x9f\x99\x82\xc2\xab

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Amazon Interview Experience for SDE-1 | 1.3 years Experienced (Aug-2020)

- Difficulty Level :[Medium](#)
- Last Updated :12 Oct, 2020

Round 1 (Online Coding Round): Two questions.

1. [Find number of Islands](#)
2. Custom sorting.

You have been given the task of reordering some data from a log file. In the log file, every line is a space-delimited list of strings. All lines begin with an alphanumeric identifier. There will be no lines consisting only of an identifier.

After the alphanumeric identifier, a line will consist of either: 1) a list of words using only lowercase English letters. 2) or list of only integers.

You have to reorder the data such that all the lines with words are at the top of the log file. The lines with words are ordered lexicographically, ignoring the identifier except in the case of ties. In the case of ties (if there are two lines that are identical except for the identifier), the identifier is used to order lexicographically. Alphanumeric should be sorted in ASCII order (numbers come before letters). The identifiers must still be part of the lines in the output strings. Lines with integers must be left in the original order they were in the file.

Write an algorithm to reorder the data in the log file, according to the rules above.

Sample Input:

```
logFileSize = 5\r\nlogLines =\r\n[a1 9 2 3 1]\r\n[g1 act car]\r\n[zo4 4 7]\r\n[ab1 off key dog]\r\n[a8 act zoo]
```

Sample Output:

```
[g1 act car]\r\n[a8 act zoo]\r\n[ab1 off key dog]\r\n[a1 9 2 3 1]\r\n[zo4 4 7]
```

Round 2 Interview (Online on Amazon Chime): Topic: DS-Algo and basic introduction

1. Find a number of triplets in an array A that satisfy the condition: $A[i] < A[j] < A[k]$ where $i < k < j$
2. [HTML parsing](#) (similar to the linked question. Just replace parenthesis with HTML tags)

Round 3 Interview (Online on Amazon Chime): Topic: DS-Algo and basic introduction

1. Discussion regarding hashing. Hashing techniques. Collision resolution. Data structure to be used for the best performance.
2. Don't remember this question, but it was not very difficult.

Round 4 Interview (Online on Amazon Chime): Topic: DS-Algo and basic introduction

1. [Zig-Zag tree traversal](#)
2. A modification of [Delete a Linked List node at a given position](#)

Round 5 Interview (Telephonic Behavioral Test)

1. A situation when you identified a customer-facing problem and how you solved it.
2. A situation where you had to build up some features up to completion within a short time.
3. For example whenever you were in a tough situation with another team member.

Round 6 Interview (Online on Amazon Chime): It was hiring managerial round

1. Introduction.
2. Discussion regarding the current job and current project. The impact of the project and my impact on it.
3. A few behavioral/situational questions.
4. Asked me to explain the project I did during my 3rd-year internship.

Result: Selected.

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Amazon Interview Experience | 6-Months Internship for SDE-1 (On-Campus)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n08 Oct, 2020

1st Round Details (Coding test): Coding round on their own platform. It consisted of 4 sections.

1. 7 debugging questions (C++/Java).
2. 2 coding questions.
 - [Search for a given number in a row-wise and column-wise sorted matrix.](#)
 - [Check if a given tree is a subtree of another binary tree. \xc2\xa0](#)
3. Psychometric test based on Leadership principles.
4. Aptitude and Logical reasoning.

2nd Round Details (F2F technical round 1): Introduced myself and jumped right into coding. The following two questions were asked.

1. [Given a binary tree, write a function to check if the tree is a mirror image of itself or symmetrical. This was done using recursion with time complexity of O\(n\) and space-complexity of O\(1\).](#) We discussed the approach and the interviewer was satisfied with it. I was asked to code it completely, covering all edge cases and having no bugs.
2. [Given a string of 1\xe2\x80\x99s and 0\xe2\x80\x99s, we can flip the 1\xe2\x80\x99s to 0\xe2\x80\x99s and the 0\xe2\x80\x99s to 1\xe2\x80\x99s. Find the minimum amount of flips required to make the string monotone increasing \(all the 0\xe2\x80\x99s on the left, and 1\xe2\x80\x99s on the right\).](#) This was a dynamic programming question. I didn\xe2\x80\x99t get the approach right on the go, but the interviewer gave me a hint, and I was able to code it. He wanted the most optimized solution which I got in the end.

Note: The above link is somewhat similar and the space complexity of the solution can be optimized even more.

3rd Round Details (F2F technical round 2): Again, just introduced myself and jumped right into coding. The following two questions were asked.

1. [Given a row-wise and column-wise sorted matrix, return the kth highest number. I solved this using a max-heap.](#) The interviewer was satisfied with it and asked me to code it from scratch (including the class for a heap). I think it could have been optimised even more.
2. Given the employees of an organization, each employee can mail two other employees, and so on. The CEO is at the root. Calculate the time taken for \xe2\x80\x98m\xe2\x80\x99 mails sent by the CEO to reach all the employees. This was a binary tree question and can be solved by finding the height of the tree.

Note: The above link is for kth the smallest element.

This was the last round and there were no HR questions, questions about my projects, or other topics.

Verdict: Selected!

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Amazon Interview Experience for SDE-1 Internship

- Last Updated : \n06 Oct, 2020

The first round was the Online coding round which was held on the AMCAT platform

It consisted of 4 sections:

1:) Debugging Question (Pretty straight forward questions)

2:) Coding Questions

2.1:) Merge two sorted linked list

<https://www.geeksforgeeks.org/merge-two-sorted-linked-lists/>

2.2:) Check whether a tree is a subtree of another tree or not

<https://www.geeksforgeeks.org/check-if-a-binary-tree-is-subtree-of-another-binary-tree/>

3.) Work-Life assessment

4.) Aptitude and logical reasoning

Some other questions were

- <https://leetcode.com/problems/critical-connections-in-a-network/>
- <https://www.geeksforgeeks.org/clone-linked-list-next-arbit-pointer-set-2/>
- <https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/>
- <https://leetcode.com/problems/two-sum/>

Out of around 200 students who participated in the 1st round, 32 were shortlisted for the next round

Round 1.) On amazon chime

1. This round took approx 60-70 minutes
2. The round started with a brief introduction from both the interviewer and me
3. After 2-3 mins of Introduction, he headed towards the question
4. The interviewer asked me only 1 question. Although my friends had an experience of being assessed on 2-3 questions.
5. The questions were mainly focused on DS topics like graphs (topological sort particularly), stacks, trees, and heap.
6. The interviewer analyzed my thought process and the approach I took, the reason for the approach, and the time and space complexity for the same.
7. The interviewer was very friendly, he discussed the approach I took and how I came up with this approach and all edge cases. He helped me clarify any doubts I had for the same.
8. The discussion took around 40 minutes after which I was told to write clean code for the same following proper naming convention.
9. To my luck, the interviewer was satisfied with the code after suggesting a few alterations
10. He pointed out one edge case which I missed and the discussion ended once I fixed it

The question was based on a graph that is to be solved by DFS/BFS.

After this round, 19 were shortlisted to proceed with the 2nd round

Round 2:- \xc2\x0On Amazon Chime

1. This round took approximately an hour
2. The round too started with a brief introduction from both the interviewer and me
3. The interviewer assessed me on the company principles by asking some behavior questions
4. After this, he asked me about the LRU cache and some test case
5. I was asked to implement the same and explain the time and space complexity of each approach I took
6. The interviewer asked me If I have any questions that he can help answer.

Verdict: Selected for 6 months Internship.

12 people made it through!

Tips: \xc2\x0

1. Be honest with yourself.
2. Be clear with your approach and try to consider all edge cases
3. Try to familiarize yourself with the time and space complexity of every part of your approach.
4. Be confident. If you are stuck somewhere the interviewer usually helps you out to find the right path.
5. Read past Interview experiences. They helped me a lot.
6. Don't get demotivated by rejections. Just do your best and improve day by day, so you don't regret anything from the preparation side.

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Amazon Interview Experience | WoW 2020 (6 months Internship)

- Difficulty Level : Hard
 - Last Updated : \n04 Mar, 2022

Amazon WoW is an initiative which gives an opportunity to women students in their final or pre-final year to work at Amazon as an intern or full time employee. The process started with filling an application in Amazon WoW website, in the application basic info about college, branch, resume were to be submitted. After a few days based on the resume mail was sent regarding the round 1 test.

The test consisted of 28 MCQ's (C++, data structures etc.) and 2 Medium level coding questions.

I was able to solve both the coding questions so I passed the round 1 test.

Round 1 Technical interview:

The interview was online and took place on Amazon Chime platform. The interview started with my introduction and followed by his. After this he jumped straight into the coding questions.

I was asked 2 coding questions:

- ## 1. Given a graph of n nodes and e edges.

Find the minimum number of edges that must be added to the graph to make it strongly connected.

Example:

$\backslash xc2\backslash xa0 \backslash xc2\backslash xa0$ Here
1 $\backslash xe2\backslash x80\backslash x93>2$ and 3 $\backslash xe2\backslash x80\backslash x93>4$ are connected to make it strongly connected we need to join
either 1 $\backslash xe2\backslash x80\backslash x93>4$ or 2 $\backslash xe2\backslash x80\backslash x94>4$ or 3 $\backslash xe2\backslash x80\backslash x93>1$ or 2 $\backslash xe2\backslash x80\backslash x93>3$

Approach: This can be done by finding number of strongly connected components using DFS. If there are N strongly connected components then the minimum number of edges that must be added to the graph to make it strongly connected would be N-1.

[Minimum path sum](#)

I was asked to tell the time complexity before writing the code. (clean code in my preferred language)

Round 2 Technical interview:

The interview started with my introduction and followed by his. After this he jumped straight into the coding questions.

I was asked 2 coding questions:

1. [Flattening a linked list](#)
2. [Merge k sorted arrays](#) (priority queue approach)

Some discussion on priority queue insertion time complexity was also done.

Round 3 Technical interview:

Usually Amazon internship have only 2 rounds but sometimes if they do not have enough data points on a candidate they conduct an additional round.

So I had this round 3.

In this round he asked me:

1. [Convert a sorted linked list into a balanced BST](#)
2. An efficient data structure for searching, inserting and deleting.

Lot of discussion was done on the 2nd question. He was satisfied with Hashing method.

Few DS, CN, OS questions were asked at the end.

Verdict: Selected

Knowing how to calculate time complexity is important. Staying confident, calm and focused throughout increases your chance of clearing the interview.

The secret of cracking an interview is **Never Giving Up.**

Practice from GeeksForGeeks, LeetCode and any other coding platform with which you are comfortable.

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Amazon Interview Experience for SDE-1 | 6 months Internship (On-Campus)

- Difficulty Level : \nMedium
- Last Updated : \n01 Oct, 2020

Online Round: Around **250 candidates** appeared for this round

The online round comprised of 4 sections:

- Code Debugging Round (20 minutes \xe2\x80\x93 7 Questions)
- Coding Section (70 minutes \xe2\x80\x93 2 Questions)
- Work Style Assessment (25 minutes)
- Aptitude and Logical Reasoning (35 minutes \xe2\x80\x93 24 MCQs)

Coding Questions:

1. [Search in a row wise and column wise sorted matrix](#)
2. [Clone a linked list with next and random pointer](#)

Different sets had different coding questions from some 5-6 questions. All the sections were fairly easy, but one needs to be a bit quicker to finish all the questions on time.

39 candidates were shortlisted for interviews. The interview process (Organized through Amazon Chime App \xe2\x80\x93 5 days after the online round) consisted of two rounds.

Round 1 (F2F Interview for 35-40 minutes): Formal Greetings and Introduction. Tell me about your favourite project (2-3 minutes). Let\xe2\x80\x99s jump to the coding questions (No discussion of any other stuff and also no counter questions on projects as well)

1. Given an array of random numbers, move all zeroes to the end of an array.
 - For example, if the given array is {4, -2, 0, 1, 0, 0, 3, -7, 0} then the output should be {4, -2, 1, 3, -7, 0, 0, 0, 0}. The order of all the other elements should be the same.
 - I have discussed 3 approaches and then told me to write down the optimized solution of O(n) time complexity and O(1) space complexity.
 - I write down the complete code and then the interviewer checked all the edge conditions and also told me to dry run the code for the given input.
 - <https://www.geeksforgeeks.org/move-zeroes-end-array/>
2. Sort the given linked list and return the head pointer of the resultant linked list.
 - I have discussed the approach first and then told me to write down the code (An only function which takes the head of the linked list as input and returns sorted linked list\xe2\x80\x93s head pointer).
 - I write down the code using Merge-Sort and the interviewer checked all the corner cases and also told me to dry run the code for the given input. Also asked about the time and space complexity of the code.
 - <https://www.geeksforgeeks.org/merge-sort-for-linked-list/>
- Asked me if I have any questions.

24 candidates were shortlisted for the second round.

Round 2 (F2F Interview for 60-75 minutes): Formal Greetings and Introduction. Directly jump to the coding questions (No other CS Fundamentals questions and also No questions on any project or

on the resume)

1. Given a sorted dictionary (array of words) of an alien language, find the order of characters in the language.
 - I haven't seen this question beforehand and also I am not so good at solving graph problems.
 - It took me 4-5 minutes to understand the question completely. The interviewer also gave 2-3 examples to give me a better idea of understanding the question.
 - I think about the different approaches but I didn't think of a Graph-based solution so the interviewer gave me a hint after 3-4 minutes to rethink if the question can be solved by building the graph.
 - After thinking 2-3 minutes I told the approach to solve the question using topological sorting and I described briefly about how the approach gonna work and also dry run on the pseudo-code using examples and then told me to write down the complete code.
 - Although I found it difficult to write down the complete code. But somehow I managed and the interviewer also helped me whenever I got stuck.
 - I write down the code using different logic but the approach for solving the problem is the same. Then the interviewer told me to explain the complete code line-by-line and also told me to dry run for the given 2-3 inputs and also checked all the corner cases and also asked me about the time and the space complexity of the code.
 - <https://leetcode.com/problems/alien-dictionary/>
 - <https://www.geeksforgeeks.org/given-sorted-dictionary-find-precedence-characters/>
 2. There are given n strings of different lengths, we need to connect these strings into one string. The cost to connect two strings is equal to the sum of their lengths. We need to connect the strings with minimum cost.
 - I have discussed 2 different approaches and also the optimized approach using a priority queue. Also discussed the time and the space complexity of the optimized approach.
 - Also asked me how the priority queue is defined (Here, I told that it is acting as minHeap for this question) and looked satisfied with my answer. Then asked me to write down the complete code.
 - It took me approx 1 hr to solve the first problem, so when I just started to write the second code, the interviewer told me that we're running out of time and no need to write the code as my approach is correct.
 - <https://www.geeksforgeeks.org/connect-n-ropes-minimum-cost/>
- Asked me if I have any questions.

Both the rounds went smoothly. The interviewers were very sharp and had sound knowledge. They were very friendly.

Finally, 17 candidates were selected for an Internship including me.

Additional Information:

- The Interviews were conducted on Amazon Chime (A video calling platform).
- Coding questions were asked to code on Amazon's LiveCode platform where both the interviewer and the interviewee can simultaneously edit and view the code.

Tips:

- Interviews have a slight luck factor and kind of day dependency. I would advise you to wait for your day, and on that day I guarantee you, no one can stop you from getting what you deserve, just be confident and solve all the problems with a positive attitude.
- Be polite and carefully listen to the interviewer (you might be lucky to grab a few clues)
- Interviewers will help you whenever you are stuck just keep thinking aloud. Before jumping into

the solution, understand the question properly, and avoid any assumptions regarding the problem statement and get them all-clear by asking the interviewer as many questions as possible. Think of all possible edge/corner cases. Discuss your solution with the interviewer and explain the cases that you are handling.

- Be thorough with Time and Space complexity calculation, as it is the first question you might get after proposing an algorithm to the interviewer.

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Amazon Interview Experience for SDE

- Last Updated : \n 01 Oct, 2020

PPI after 2 months Internship

Amazon conducted Interviews at the end of last summer Internship for SDE roles. Unlike previous years it was completely Work from Home and thus interviews were conducted to better judge the candidature of interns for full-time conversion at the end of the 2-month internship.

There were 2 rounds of interviews in the last week of the internship and the first round interviewer was an SDE and the second-round interviewer was a senior manager. Both rounds were conducted through amazon chime and a two-way code editor was used.

Round 1: In this round, the interviewer focused on coding skills/problem-solving skills. \xc2\xab

- The interview began with a brief introduction from my end and then the interviewer jumped to my CV and asked to explain the projects that I had in 2nd year, and I was caught off guard as I wasn't prepared for it. I tried to explain as much as I could but he wasn't satisfied with the explanation.
- Next, he asked me [Maximum sum triplet](#) and I gave a brute force solution to it and I coded it and then he asked me to optimize it. I suggested 2 methods, one with sort and the other with taking 3 variables(most optimized approach). He asked me which sort I would use and I told [merge sort](#) and then he asked me to write merge sort where I struggled and ended up only explaining the approach. Later, I coded the most optimized approach.

Round 2: In this round, the interviewer focused more on the DS/Algo proficiency.

- My first question was a very typical one and I couldn't solve it.
Ques: There are two amazon centers, one in Bangalore and one in Hyderabad where the candidates need to go for interviews. A candidate needs to visit one of the centers and the expense would be on amazon. Each location needs to have half of the candidate(N, candidate number is even) and the cost associated with the travel expense needs to be minimized. Output the cost.

Ex: For 6 candidates {20,40}, {10,60}, {5,80}, {60,10}{100,15}, {150,20}. Here lets assume cost is given {Bangalore, Hyderabad} thus first 3 candidates should go to Bangalore and next 3 should go to Hyderabad and total cost is 70.

- The second question was transforming BST to [Greater sum tree](#), which was fairly easy and less time-consuming to write.
- The third question was to implement an audio/song player where there are n songs and needs to be played in a randomized order and a played song must not be repeated until all the unrepeated songs have been played. It was my first time with these questions and I struggled little with this. I gave 2-3 approaches with different data structures to implement it. Later, the interviewer told me to try this without any extra space as I was using O(n) space with using DS and the given form was an array/array list. Then, I suggested a two-pointer approach to it. One pointer(p1) would indicate the songs in the right are unplayed and another pointer(p2) to access the songs in this right to end range randomly and play and then swap that song with the p1's immediate right song and then increment p1 by 1 thus including that song in played portion. If all the songs have been played the rest both pointers to 1st element and now the songs can be repeated.

My performance was not up to mark as I made some mistakes during the 2 rounds of interview, and I was not offered a full-time role.

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Amazon Interview Experience | 6 Months Intern for SDE-1 (On-Campus)

- Difficulty Level : [Medium](#)
 - Last Updated : [28 Sep, 2020](#)

Round 1(online) :

Consisted of 5 sections:

- 1) 10 debugging questions
 - 2) 2 coding ques :- i) <https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/>
ii) <https://www.geeksforgeeks.org/check-if-a-binary-tree-is-subtree-of-another-binary-tree/>
 - 3) Personality questions
 - 4) Logical Reasoning questions

Round 2(Technical 1) \xe2\x80\x93 remotely \xc2\xa0 :

- 1) Introduced myself
 - 2) 2 coding questions were asked

i) <https://www.geeksforgeeks.org/minimum-steps-to-make-the-product-of-the-array-equal-to-1/>

Basically you have to find operations to change each non-negative element to 1 & negative element to -1. Count the operations for each element by taking absolute diff. If count of negative numbers is odd and no zeros are there then increase the operations by 2.

ii) In a binary tree, find a path between 2 nodes. There was a modification that the height of the tree is infinite and the tree is not in memory.

The structure of tree is like :-

I discussed with him to go from \xe2\x80\x9cnode to root\xe2\x80\x9d instead of general \xe2\x80\x9croot to node\xe2\x80\x9d. He asked me how and I found out LCA using map and stack.

\xc2\xa0 He said the approach is right but he does not want to use map/stack or any derived DS. Use only primitive DS. Solved it using arrays. \xc2\xa0I gave a case where the map-stack approach

would be more optimized. So he told me to analyze both the approaches w.r.t. time and space and explain why it is so.

Time and space for both approaches were $O(\log(n))$ for the worst case. For average cases and in runtime map-stack would be more optimized and he agreed on it. He asked me to code any of the 2 approaches. I coded the array one as it was simpler to implement. Then he asked if I had any ques and concluded the interview.

Round 3(Technical 2) \xe2\x80\x93 remotely :\\xc2\\xa0

No intro, no small talk, straight to coding

1. <https://www.geeksforgeeks.org/count-distinct-elements-in-every-window-of-size-k/>

\xc2\x0 No constraints on k & N and was told to handle all possible corner cases.

\xc2\x0 Discussed approach -> coded it -> approved -> discussed time complexity and why it is $O(n)$

2. <https://www.geeksforgeeks.org/convert-a-given-tree-to-sum-tree/>

\xc2\x0 Explained approach -> she asked which traversal will be used and why -> postorder as we calculate left and right child first and then process root -> coded it -> approved

3. <https://www.geeksforgeeks.org/trapping-rain-water/>

\xc2\x0 Gave the solution with 2 arrays i.e. left-max & right-max. She told me to do it in a single extra array. Did after taking 5 mins. Then she told me to do it in constant space. \xc2\x0

\xc2\x0 I didn't think that was even possible. After trying for 10-12 mins I told her I am getting nowhere. She told me to code the single-array approach.

\xc2\x0 Coded it -> had some logical mistakes -> she gave a direction what the error can be and did a dry run together -> solved it after some time and code was approved.

\xc2\x0 She told me we have some time to think about how to do it in constant space. 10 mins later, the time was up I did not come up with anything and the Interview was over,

\xc2\x0 NO projects, subjects, HR questions

Verdict :- Selected

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Amazon Interview Experience for SDE-1 (Full Time-Referral) 2020

- Difficulty Level :\nExpert
- Last Updated :\n28 Sep, 2020

Hi geeks! wish to share my interview experience with you all.

During this pandemic time, Amazon interviews were all virtual through Chime(Video Conferencing & Online Meetings App)

Round 1: \xc2\xd0(Online Assessment \xc2\xd0Round)\xc2\xd0

Q1) Maximized partitions of a string such that each character of the string appears in one substring

Q2) \xc2\xd0Count of substrings of length K with exactly K \xe2\x80\x93 1 distinct characters
\xc2\xd0\xe2\x80\x93 I have linked a similar problem in geeksforgeeks.

It was nearly 3 weeks gap before I got a call from Amazon regarding the interview process after this Online round.

So be patient and keep preparing.

Round 2: \xc2\xd0(Technical Interview Round-1)

It is a coding round consisting of two coding questions. I was asked to discuss my approach and analyse the time complexity before getting into the actual coding.

Q1) Find the smallest window in a string containing all characters of another string

\xc2\xd0\xe2\x80\x93 I was able to come up with O(S + T) solution where S and T are lengths of the strings

Q2) Remove minimum number of parentheses to make the input string valid

Round 3: \xc2\xd0(Technical Interview Round-2)

Q1) Find k closest elements to a given value \xe2\x80\x93 given array is not sorted

I thought of a binary search solution after sorting but was asked to use an apt data structure.

Later I explained my solution using Heap.

Q2) Given a input string 2(a3(bc)) output should be abcbcbcabcdbc

Solution was using stack

Round 4: (Hiring manager Round)

Lots of questions on my project with follow up questions as well.

I was asked to design classes for a deck of card with functionalities like shuffle and hand-over.

Discussed about Serializing and deserializing the binary tree and many more

Round 5: Bar Raiser Round

Q1) Bubble shooter : Given a matrix of colors

`[["r","g","b","g","b","r"], ["g","b","r","g","b","r"], ["b","r","g","b","r","g"], ["g","b","r","g","b","r"], ["r","g","b","g","b","r"], ["g","b","r","g","b","r"]]` and a target array `["g","b","r","g","b","r"]`

take each bubble from target array and try to blast the same color bubble in the matrix from the bottom view.

if able to hit a bubble, then that bubble in turn hits the neighbor bubble (4-direction) of same color.

Bursting a bubble makes the spot transparent and could allow to view the interior bubble from bottom view.

If one target color couldn't hit the matrix then the game ends `return count of the burst bubbles`.

I was asked for an optimized solution `return count of the burst bubbles` mainly for checking the bottom view

I used a hash to keep track of active rows for each column. whenever a bubble is burst active row is the row below it.

so bottom view for each column is `matrix[active_row[col]][col]`

Q2) Immediate next larger element in an array.

I was asked for O(N) solution `return count of the burst bubbles` Used monotonous stack for my approach

There was a follow up `return count of the burst bubbles` to find Immediate left larger element without extra traversal or extra space

I was able to answer that too

After these there were plenty of behavioral and project related questions. Some of them are

- 1) what is the challenging project that you worked on? `return count of the burst bubbles` asked to explain in detail about the implementation, schema discussion etc.
- 2) Total number of the projects and how big they were.
- 3) Any customer tickets that you worked on.
- 4) Asked about [KMP algorithm](#) and [Segment tree](#).
- 5) Explain about a time when you had a tight deadline.
- 6) Explain about a time when you came up with any ideas or automation.

Result: SELECTED

Before Interview :-

I would like to share about my preparation process. Choose any programming language of

your like and keep solving plenty of problems in geeksforgeeks or similar sites to get the idea of problem solving. While solving problems my pattern is to cover the data structures one by one, understanding it's best/average/worst case time complexity. When you are using a STL in your code make sure you are clear about its time complexity. I used to spend some time in the discussion board and solution panel after submitting my approach to understand various thought process of other geeks and learnt a lot.

During Interview :-

The Interviewer expects the most optimized solution with proper usage of suitable data structures and algorithms for every question with full implementation. Interviewers will help you whenever you are struck just keep thinking loud. Before jumping into solution, understand the question properly and avoid any assumptions regarding the problem statement get them all clear by asking the interviewer as many questions as possible. Think of all possible edge/corner cases. Discuss your solution with the interviewer and explain the cases that you are handling. It would be nice to make a rough run through your approach with an example input.

All The Best !

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Amazon Interview Experience | Internship Drive

- Difficulty Level :\nHard
- Last Updated :\n16 Sep, 2020

Online Round:

Around 800 candidates appeared for this round

The online round comprised of 4 sections:

- *Debugging(C,C++,Java,Python)* You have to choose one among them 20mins approx)
- *Coding(2 coding questions medium to difficult level 90 mins)*
- *Psychometric test based on Leadership principle*
- *Aptitude and Logical reasoning* (I felt a short of time)

76 candidates were shortlisted from this round.

F2F Interview (Round-1)(1hr approx)

We were given two coding problems in this round.

Note: Every coding problems have to be coded in any one of your favourite language

Q1: Rearrange a string such that no two characters are same if not possible return -1

<https://www.geeksforgeeks.org/rearrange-characters-string-no-two-adjacent/> \xc2\xab0

Q2: Given a sequence of words, print all anagrams together

We discussed about 2 approach and did complexity analysis and coded the hashmap \xc2\xab0

solution

<https://www.geeksforgeeks.org/given-a-sequence-of-words-print-all-anagrams-together/>

This round was basically to test your problem solving skills,coding skills.

F2F Interview(Round-2)(1.5hr approx)

Initially had a 2 min introduction

Then went on to project discussion explained in detail about the SIH project which we did \xc2\xab0 for about 10min he was keen on understanding the challenges faced and knowing the complexity of the project.

Then went with coding problems

Since we were talking about internship experience which involved recommender system got a question from search engine related \xc2\xab0with pattern matching

Q1: Find the pattern in a string is existing or not

Discussed about naive approach complexity, not satisfied with it

Implemented Boye Moore\xe2\x80\x99s method.

Q2: From a grid of letters find whether a given word exists.

<https://leetcode.com/problems/word-search/>

`\xc2\xa0Q3`: Sort a string according to the order defined by another string.

<https://www.geeksforgeeks.org/sort-string-according-order-defined-another-string/>

By end of these three questions he was quite happy.

He later made a dry run through my resume and came to know the technologies I know \xc2\xaa and asked a few questions regarding that.

Both the rounds went smoothly. Interviewers were very sharp and had a sound knowledge. They were very friendly.

Finally 9 candidates made it through!

Tips :

- Stay calm and positive during interview.(Don't talk with peers before interview)
 - If you have enough time try to read as many interview experience as possible in GFG as it will be really helpful in technical rounds on how to go about.
 - At last if unfortunately, If you are turned down don't worry keep the same spirit throughout the process(I was rejected during the interview of other 6 good companies even at hr levels but finally got what I wanted).It is a test of time,patience and faith.Keep yourself positive and confident.

Thanks a lot GFG !

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Amazon Interview Experience for SDE

- Difficulty Level : \n[Medium](#)
- Last Updated : \n14 Sep, 2020

Online Round: There were multiple sets. Each set contained four sections.

1. Code Debugging section(20 minutes)
2. Coding section(70 minutes)
3. Work Style Assessment(10-15 minutes)
4. Logical Ability(35 minutes)

Except for the coding section and work style assessment other sections were MCQ type. In these sections, speed mattered.

Coding questions:

1. It was based on hashing. After little thinking, the question simply got reduced to calculate two values in an array having sum equal to a given integer k. Simple 5-7 lines of code were sufficient to pass the given test-cases (**Difficulty-Easy**)
2. It was based on strings. We were given a string consisting of words separated by spaces or punctuation. Another vector of strings was given which were to be excluded. We had to return a vector consisting of strings having max frequency. It was simply a hashing based question, there were some strong corner cases which were to be handled. (**Difficulty-Medium**)

31 students were shortlisted for interviews. The interview process(Organized through **Amazon Chime App**) consisted of one round.

Round 1 (Technical): First, the interviewer told me to introduce myself. Then 4 coding questions were asked one by one.

1. [Count distinct elements in every window of size k](#)
2. [Convert a given tree to its Sum Tree](#)
3. [Partition problem](#)
4. [Trapping Rain Water](#)

The interviewer first asked about the brute-force solution and the optimal approaches were asked afterward. She was convinced of my solutions, and then she asked whether I had any questions for her. I asked her about the kind of work and the prerequisites during the internship. Further, I asked about the schedule and work hours during the internship. No questions were asked about my projects.

Tips: Be patient and confident as I have experienced sometimes your hard work didn't result in what you expected and you would feel depressed, in these situations just be patient and wait for the best. Also, interviews have a slight luck factor and kind of day dependency. I would advise you to wait for your day, and on that day I guarantee you, no one can stop you from getting what you deserve, just be confident and solve all the problems with a positive attitude.

Result: Finally 17 students were offered internships for the SDE profile.

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n10 Sep, 2020

First round:

1. Given an array of strings. Find all the strings that match the given pattern
2. Minimum number of insertions to make a string palindrome
3. Find max sum root to leaf path and print that path.

Second round:

1. Given A tree whose leaf nodes are connected to form a circular doubly linked list. Print all the leaf nodes.
2. Modified BS- Searching in sorted rotated array

Leadership principles:

- Tell me about a time when u did some that were outside ur role
- Tell me about a time when u had to get something done within a given timeline but u didn't have enough data
- Tell me about a time when u did something outstanding that was not expected of you.

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Amazon Interview Experience 2020 for SDE-1

- Difficulty Level : \n[Medium](#)
- Last Updated : \n08 Sep, 2020

Hi geeks, I appeared for the amazon\xe2\x80\x99s interview for SDE 1, and here is my experience

Round 1: This round was online assessment and questions asked were:

1. [Stickler Thief\xc2\xa0](#)
2. Binary Tree \xe2\x80\x93 [Distance b/w two given nodes.\xc2\xa0](#)

Round 2: I don\xe2\x80\x99t know why my second round was an SDM round. This was more concentrated on my previous projects,

1. Give me the situations where you failed and pushed back.
2. Tell me the hardest task done by you till now and how you solved it.
3. If you are assigned two interns and there are two other interns who are assigned to someone else outside the team. But these two are also in your team, and they notice other two interns asking questions to you and so they start asking thing to you, due to this you are lacking in your productive time, how will you react?
4. Tell me the thing that hurt you the most in your career and how did you react to it?
5. Some leadership-related questions were also there.

And some more questions on OS and CN.

Round 3: This was straight coding round.

1. The zigzag traversal of a Binary tree: Gave a solution with BFS using Queue and Stack but he wanted me to optimize it, so used two stacks and that worked. (no miss in edge cases)
2. How to [delete a node from Singly linked list when you are given only the node](#) (head is not provided): simply copy the next nodes data to current and delete the next. Coded as well (no miss of edge cases)

Round 4: Here we started with the discussions of my previous projects and some system designs and how I solved the problems that occurred in the way of my projects.

Only one question was asked to create an HTML validator, I couldn\xe2\x80\x99t find it on Gfg, but I understood this is a variation of [balanced parentheses problem](#) and gave a solution with stack and coded as well (here I missed 2 edge cases).

It\xe2\x80\x99s been 1 week since I appeared for these interviews, no updates till now and I think I am **rejected** :-(\xc2\xa0

But if I get some more updates, I\xe2\x80\x99ll update this article.

Tips:

- Keep asking for the clarifications and edge cases.
- Keep track of all edged cases and ask your interviewer about them.
- Don\xe2\x80\x99t make your own assumptions, tell them that you are making these assumptions, and if they are good with that then only proceed with your solution.

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Amazon Interview Experience for FTE SDE Internship (AmazeWoW)

- Last Updated : \n04 Mar, 2022

AmazeWoW is a development initiative with internship and FTE SDE (Full-time Software Development Engineer) opportunities for Amazon in India, focused on bringing in top talent from engineering institutes. AmazeWoW aims at building gender balance at the entry-level for the SDE role so that with Amazon\xe2\x80\x99s talent nurturing environment, the future leadership pipeline of the Amazon technology team is more diverse.\xc2\xao

Online Test: There were 4 sections in the online test, code debug, coding test (two questions), Work Styles Assessment, and logical ability.

Coding Questions :

1. Longest Palindromic Substring: Standard DP question.
2. Find the most frequently occurring word in a sentence that is not in a given list of banned words: Divide the sentence into a stream of words, then use a hashmap to keep the count of the number of occurrences of each word that is not in the list of banned words and print the words from the hashmap with the maximum count.

Telephonic Interview: The interviewer first asked me to introduce myself.

Coding Questions:

1. [Queue based approach for first non-repeating character in a stream.](#)
2. Output the leaves of a tree in the first line, then output the nodes which will become leaves after removing the current leaves in the next line. We had to repeat this process until the tree was empty. This can be done by storing the height of each node. Output the nodes in ascending order of heights.

He asked me the time and space complexities at each and every step. He also asked me to check my codes for edge cases.

Result: SELECTED

Important Tips:

1. Be thorough with your data structures and algorithms.
2. Know the time and space complexities of every piece of code you write.
3. Before coding during the interview, clarify all your doubts with the interviewer.
4. Check your code for all the edge cases.
5. Write clean code.

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Amazon Interview Experience (AmazonWow)

- Difficulty Level :[Medium](#)
- Last Updated :[04 Mar, 2022](#)

Online Test: There were 28 MCQs mostly based on stacks, queues, predict the output, Sorting, and Binary Trees and 2 coding questions.

1) Given a string convert it into a valid address by inserting a `\xe2\x80\x98.\xe2\x80\x99` after www then insert a `\xe2\x80\x98.\xe2\x80\x99` before com and if there are more characters after com then put a `\xe2\x80\x98/\xe2\x80\x99` after com and then the rest of the characters.

Eg:

Input: wwwgooglecomr\r\n **Output:** www.google.com/r

[Print the length of the longest decreasing subsequence.](#)

Round 1 (Interview 1): The interviewer introduced himself and asked me to introduce myself.

Coding Questions

1. [Print all the pairs whose sum is equal to 0.](#)
2. [He extended the question to find all the triplets with sum 0.](#)

Round 2 (Interview 2): Coding Question

1. Given n strings in `\xe2\x80\x98a/b=0.5\xe2\x80\x99,\xe2\x80\x98b/c=0.9\xe2\x80\x99` format. Find the answer of q queries in `\xe2\x80\x98a/c\xe2\x80\x99` format.`\xc2\xa0`

Hint: (Make a directed graph with a, b and other alphabets as vertices)

Round 3 (Interview 3): `\xc2\xa0`

1. **Tree-Based:** [Given a binary tree and one node is set on fire so find the time required to burn all the nodes.](#)
2. **Stack Based:** Given a string with `\xe2\x80\x98U\xe2\x80\x99` and `\xe2\x80\x98D\xe2\x80\x99`. Find the number of mountains and valleys`\xc2\xa0`

Eg: `\xc2\xa0`

Input: UUDDDDUDUU\r\n **Output:** Mountain 1 is formed by UUDD and 1 Valley by DDUDUU

The interviewer expected me to code all the questions completely and helped in between if stuck to find the optimized approach.

Tips: `\xc2\xa0`

- Start coding after the interviewer is satisfied with your approach.
- First, clarify all the doubts and then give your solution.
- Dry run your code for multiple edge cases
- Try to write a clean code.

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Amazon Interview Experience | 2020 On-Campus for SDE-1 FTE

- Difficulty Level :[Hard](#)
- Last Updated :[02 Sep, 2020](#)

Round 1: It was a written test and this written test was cleared by 52 aspirants.

1. Construct a custom stack, operations of the stack, **push**, **pop**, **delete** the middle (expected Time complexity: O(1) per operation)

I don't remember actually, but possibly a good question

Round 2: Brief Intro of both interviewee and interviewer

Two Coding Questions were asked:

1. Given a binary tree, if any node is affected on this tree with a virus, its adjacent nodes will also be affected the next day. Give a list of an affected node, how many days will the whole tree be affected. (Tree Node can be customized)
2. An array with some numbers, return another array. The index i contains a number which is the multiplication of all except the current number, use of division and subtraction was prohibited.

Eg:[xc2xa0](#)

{1, 2, 3, 4} → {24, 12, 8, 6}

Round 3:

1. Pick any one of your projects and detailed discussion over that project regarding concepts.
2. OS Question like Process vs Threads, Thrashing, virtual Memory, Java Question like overloading vs over
3. **Coding:** Time of meetings of different employees, find a 1-hour slot which is free in the day.

Eg:

00:00 is written as 0\r\n01:30 is written as 1.3\r\nMeeting Time\r\nA\r\n<0 - 12>, <12- 14>, <4.5 - 11>\r\nB\r\n<13 - 1

Round 4:

1. Print a generic tree \xe2\x80\x93 reverse order bottom-up fashion.
2. Friends of Friends Network, list the top 1000 watched movies list. Input is a network (e.g. FB networks with each node containing a watched movie list) \xe2\x80\x93 It is up to you to decide input data structure to use for this problem

Given a reference node to you in that network, you need to return the top 1000 movies that have been watched by your friends and their friends.

Output the movie list with 1000 movies

**made mistake on time complexity: didn't consider that we have to show only 1000 (constant factor \xe2\x80\x93 O(1))\xc2\xa0

Behavioral test based on Leadership Principles:[xc2xa0](#)

1. Tell a situation when you faced a bug and it took a lot of time to resolve and how did you handle that situation.

Round 4 was the final round and only 10 students gave it. I solved all the problems and hopefully optimally, but rejected after the fourth round 6/10 selected.

Tips:[xc2xa0](#)

- Every round starting: A brief introduction of interviewer and interviewee, so prepare one
- Every Round Ending: They asked, \xe2\x80\x9cAnything you want to ask about Amazon?\xe2\x80\x9d So be prepared for the same.
- Time and space complexity was asked for every question
- Production-ready code is required
- Not necessary to write to start writing from class and import, just required functions, assumptions (just ask before assumption) were allowed

Please mind my grammar and mistakes, good luck.

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Amazon Interview Experience for FTE/6 months SDE-1 Internship

\xe2\x80\x93 AmazeWow

- Difficulty Level :\nEasy
- Last Updated :\n04 Mar, 2022

I applied for Amazon SDE-1 Internship through the AmazeWow program only for Women.

Online Test Round: It was a quite easy round. It consists of around 28 MCQs on the basic concepts of Data structure and algorithms, C/C++ outputs, Time, and Space complexity.

1. How many push and pop operations for below operations will be required if we implement a queue using stack?

```
push (5), push (7), push (2), pop (), push (3), \r\npop (), pop (), push (6), pop (), pop ()
```

In this question, 4 options were given stating no of push and pop operations. The trick was when we implement a queue using stack, we will require 2 stacks and then count no. of push and pop operations.

\xc2\xd0Second Round: This round consisted of 2 coding questions which were quite easy.

1. Given a string of type **a+b=c** where any one of them is unknown, we have to find its value.

\xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 **Example:**

Input: x+5=7 Output: x=2

\xc2\xd0 The only challenge was to consider each case and convert string to an integer.

\xc2\xd0 Given a large number in the form of the string, output its remainder modulo 11.

\xc2\xd0 **Example:** \xc2\xd0

Input: 121 Output:0

Technical Interview Round 1: The interview started with the interviewer\xe2\x80\x99s introduction followed by mine. Then he asked me about anyone project mentioned in my resume. Then he jumped to coding questions. The interview lasted for an hour.

1. Given n students starting from 1 in circular orientation starting from k and m gifts. Distribute these gifts among n students one by one. The last gift is broken. The return which student got the broken gift. It was a simple problem I started with traversing twice using 2 loops then he asked me to remove the last loop after that he asked me to remove the first loop as well, I took some time then did it \xe2\x80\x93 Just a modulus% operation was needed to make it work in O(1)\xc2\xd0
2. [Next Smaller Element](#)

With this, the interview ended. Within 1 week, I got the mail that I have been shortlisted for the next round of interviews.

Technical Interview Round 2: The interview started with the interviewer\xe2\x80\x99s introduction followed by mine. Then he jumped to coding questions. It lasted for 1.5 hours.\xc2\xd0

1. [The Largest value in each level of Binary Tree](#)
2. [Farthest Smaller element in an array](#)

I started with brute force then the interviewer asked me to think of more efficient solution, so I was not sure which data structure to use. So I started with a stack like next smaller but it turned out to be wrong. Then I tried queue but the interviewer said it will have the same complexity as the brute force. Then he helped me with a hint to think about binary search after which I was a little confused, but he asked me what is going on in my mind and helped me again with a hint. Then I was able to code it further \xe2\x80\x93 time complexity O(n).

With this, the interview ended. I was nervous because I could not do the second question all by myself but luckily I GOT SELECTED.

Tips:

- Be loud while thinking so that interviewer could come to know your thought process, take it as a discussion and not a

test.

- Don't hesitate in asking for help if you got stuck somewhere.
- Ask every detail about the question like constraints.
- Be confident
- Practice questions from **GeeksforGeeks** and **leetcode**.
- Discuss space and time complexities with the interviewer.
- If you know the answer then pretend that it is a new question and take some time.
- Always start with brute force first.

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Amazon Interview Experience for SDE Internship

- Difficulty Level :\n[Medium](#)
- Last Updated :\n14 May, 2021

I applied for Amazon SDE Internship through college.\xc2\xad

Online Round: There was an online round that had technical MCQs and 2 coding questions. The coding part was pretty simple. 7-8 people were shortlisted for the interview process.\xc2\xad

First face-to-face Interview Round: The round lasted for an hour. Firstly the interviewer asked me to introduce myself. Later there were 3 coding questions.

1. [Sort an array containing 0s, 1s and 2s](#). The interviewer wants you to give the optimized solution. They will help you to optimize the code.
2. [Given a 2-dimensional array containing 0s and 1s in ascending order in each row. Find the array which has the most 1s.](#) Firstly I gave 2 solutions for this problem he wanted me to optimize it further.
3. Given a binary tree in which the leaf nodes point to the adjacent leaf nodes and vice versa. Find if the given node is a leaf node or not. This can be solved by traversing the tree and checking if(node->left->right==node || node->right->left==node) return true;

The selected candidates were called for the next round.

Second face-to-face Interview Round: This round lasted for 1&1/2 hour. Three coding questions were asked.

1. [Given inorder and preorder traversal of a tree. Print the actual tree.](#) The interviewer verified it with an example.
2. [Rotate a given 2D array by 90 degrees.](#) Again the optimized solution was asked.
3. Given a number and asked the number of ways the number can be obtained as a sum of the natural numbers. I faced some issues coding this. The interviewer helped along the way and it is done using recursion.

2 people were selected for the internship from our college.

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Amazon Interview Experience for SDE-1 FTE/6 Months Internship \xe2\x80\x93 AmazeWow

- Difficulty Level :\nHard
- Last Updated :\n04 Mar, 2022

Online Coding Test: The test consisted of 28 MCQs primarily focused on C/C++ outputs, data structures, OOPS Concepts. 2 coding questions were also asked.

1. Find mean, median, mode.
2. An array consisted of a number of chocolates each child had, we need to find a number of steps in which all children can have the same chocolates such that one can pass its chocolates to next one.

Coding Questions were comparatively easy. The most difficult part was the output based question. I was lucky enough to clear the online round.

Then I had 4 rounds of interviews that were conducted through Amazon Chime. Each interview was about 1hour except the 3rd one, it lasted for about 1hr 30 minutes.\xc2\xab0

Round 1 (Coding 1): It started with the introduction of the interviewer and then mine. He then directly jumped to coding questions

Questions asked were:

1. [Rearrange characters in a string such that no two adjacent are same](#)
2. Given 2 strings of numbers, I was asked to add them.

With this, my first round ended.

Round 2 (Coding 2): After introducing himself, he directly jumped to the coding question

1. [Path in a Rectangle with Circles](#) I was required to print the path.

The interviewer then asked me to make the code easier to understand by using structures. With this, the interview ended.

Round 3 (Tech): This round started after the introduction. The interviewer jumped to coding questions.

1. [Box Stacking Problem](#) (But there was an assumption that we have the only box of each dimension.)
2. A person is standing at floor \xe2\x80\x98A\xe2\x80\x99 and wants to go floor \xe2\x80\x98B\xe2\x80\x99 using a lift. A lift can either go x floors up and y floors down. I was supposed to tell the minimum number of steps.

After thinking, I reached a solution using BFS and the interviewer was satisfied.

The interviewer then asked some basic computer fundamental questions:

- Features of oops
- Where we should not use the concept of oops
- Deadlock and its conditions and its avoidance
- OSI layer which among these layers is most important according to me

- Difference b between SQL and no-SQL

With this my 3rd round ended.

Round 4 (Technical+HR): The interview begins with the introduction of the interviewer and the mine. The interviewer asked me about my projects.

Then asked some HR questions like:

- The technical problem you faced during any of your projects
- Anything you learned on your own

Then the interviewer asked questions related to CS fundamental

- What happens when we type www.amazon.com basically he was asking about DNS
- Deadlock and its conditions
- OOPs and its features \xc2\xa0I explained using real-life examples
- No-sql
- ACID properties

Then he asked me one coding question\ xc2\x a0

1. [Reverse words in a given string](#)

But here the string was in form of linked list like:\ xc2\x a0

g->e->e->k->s->\ ' \ '->f->o->r->\ ' \ '->g->e->e->k->s

I used the same i.e. reversed the entire linked list and the reversed words using the approach same as [Reverse a Linked List in groups of given size](#) with this my 4th round ended. After 2 days, I got the result and I am offered FTE + 6 months internship.

Tips:

- Be loud while thinking so that interviewer could come to know your thought process.
- Don\x e2\x 80\x 99t give up coding questions, keep on discussing it with the interviewer and you will reach to the approach.
- Be confident
- Practice questions from GeeksforGeeks and leetcode.
- Should be able to calculate space and time complexities.

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Amazon Interview Experience | 2 months Internship

- Difficulty Level :\n[Easy](#)
- Last Updated :\n23 Aug, 2020

It was a one-hour technical interview under AmazeWoW program for 2 months internship after the third year.\xc2\xab0

First 20 minutes: The interviewer started with asking questions on OOP concepts, revolving around abstraction, polymorphism, inheritance, accessibility of variables.\xc2\xab0

After OOP, we moved to Computer networking basics. He asked me about HTTP, https, TCP/IP, different layers(7) in networking.

Next 40 minutes:\xc2\xab0

1. [The first question was to do post order traversal of binary tree using a single container.\xc2\xab0](#)
2. The second question was based on array. Given an array of integers, find triplets x, y,z such that all three are elements of the array and $x^2 + y^2 = z^2$.

\xc2\xab0 \xc2\xab0

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Amazon SDE-1 FTE/6 Months Internship Experience |x80|x93 AmazeWow 2021

- Difficulty Level :[Medium](#)
- Last Updated :[04 Mar, 2022](#)

Online Coding Test: The test consisted of 28 MCQs primarily focused on C/C++ outputs, data structures, OOPS Concepts.

Two coding questions were also asked:

1. Given an equation of the form $X + Y = Z$ where one of X, Y, Z is missing, find the missing variable's value.
2. [Count Derangement \(Permutation such that no element appears in its original position\)](#)

After clearing the coding test, I had virtual interviews.

First Round: It was a coding round. Three coding questions were asked.

1. Find the number of page faults given cache size $80 \times 98 \times 80 \times 99$ and the page replacement algorithm is LRU.

I solved this using a doubly ended queue in python. The interviewer was convinced by this approach.

Given a very large number $80 \times 98 \times 80 \times 99$. Find the number of k digits with the second-highest frequency.

[Ex:|xc2|xa0](#)

n=1234123456785678 k=4 \r\nOutput:1234

Given various time slots, find the minimum number of blocks required to schedule deliveries.

[Ex:|xc2|xa0](#)

Time slots: [1,3], [2,4], [16,20] \r\nOutput: 2

This is a variation of the merging intervals problem. The interviewer asked me to do it in $O(n)$ time.

Second Round: This was also a coding round. Two coding questions were asked.

1. Given a dictionary where the values are the connections of the key. Find if a person A can send a connection request to person B. A person can only send a connection request if the number of connections between the two people is at most $80 \times 98 \times 80 \times 99$.

Input: {1:[2,3,4], 4:[5,6], 6:[7,8]} k=1 A=1 B=8 \r\nOutput: NO

I initially decided to use the DFS approach but the interviewer pointed out that I don't have to calculate the path, only the number of nodes. So I applied BFS and kept track of the level. If the level exceeded k before I found the node, I printed No else Yes.

[Ex:|xc2|xa0](#)

This round was a technical round as well. One coding question and multiple concept based questions were asked.

1. Given a number $80 \times 98 \times 80 \times 99$, construct all the possible structurally different binary trees(not BST)

Other questions that were asked were:

1. Difference between semaphore and mutex
2. Discussion of deadlock conditions, deadlock prevention, and recovery
3. Normalisation
4. Converting a given table to 2NF then 3NF and BCNF.

Fourth Round (Bar Raiser): This round was a mix of behavioral + technical questions.

It started with a discussion of my internship project. Then the following questions were asked.

1. Tell me about a time when you learned something on your own. Why did you learn it?
2. Tell me about a time when you had a conflict with your teammates and how did you handle it?
3. Tell me about a time when you were stuck at something. How did you handle it?

A few other questions regarding teamwork were asked

One coding question:

1. Given a list of dependencies of a module, print the build order of that module.

Input: A-> B,C,D | B-> C,F | C->E Print build order of A\r\nOutput: E C F D B A (Multiple correct answers were po

I discussed the DFS approach and was asked to code it. The interviewer was satisfied with my approach.

After waiting for two weeks, I got my results. I was offered an FTE + 6 months internship.

Note: When approaching the coding questions, think loudly. Discuss your approach with the interviewer first and take into account the suggestions provided. Think about the time and space complexity of your code and discuss that with your interviewer. Most importantly, be calm and composed throughout your interview as it would help you a lot.

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Amazon Interview Experience | On-Campus for SDE-1

- Difficulty Level :\nHard
- Last Updated :\n18 Nov, 2021

There were totally 5 rounds,(1 online coding Test+3 Technical Interviews+1 (managerial-cum-technical \xc2\x90Round))

Round-1(Online Coding Test)

The test was conducted on amazon\xe2\x80\x99s platform.

It had 4 sections:

1. Code Debugging (C, C++, Java)[Not sure of python and other languages]. (20 minutes)
2. Aptitude and Reasoning Ability. (35 minutes)
3. Workstyles Assessment. (20 minutes)
4. Coding Round. (70 minutes)

The first 3 sections were fairly easy, but one needs to be a tad bit quicker to finish all the questions on time.

There were 2 coding questions. Different sets had different questions. links to a few of them are as follows:

Q1) <https://www.geeksforgeeks.org/merge-two-sorted-linked-lists/amp/>

Q2) <https://www.geeksforgeeks.org/clone-linked-list-next-arbit-pointer-set-2/>

Q3) [https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/ \xc2\x90](https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/)

Q4) <https://leetcode.com/problems/two-sum/>

Q5) <https://leetcode.com/problems/critical-connections-in-a-network/>

Round -2(Technical Interview)

Q1) <https://www.geeksforgeeks.org/check-number-can-expressed-sum-consecutive-numbers/>

The solution given on the above link was not expected, but the interviewer was satisfied\xc2\x90
with $O(n^{0.5})$ approach

Q2)<https://www.geeksforgeeks.org/print-k-sum-paths-binary-tree/>

Round-3(Technical Interview)

Q1)The idea was similar to the problem given in the link below, but the question was completely different.

<https://www.geeksforgeeks.org/painters-partition-problem/>

Q2)<https://stackoverflow.com/questions/28871860/algorithm-to-find-the-maximum-non-adjacent-sum-in-n-ary-tree>

Round-4(Technical Interview)

Q1)<https://www.geeksforgeeks.org/minimum-steps-reach-target-knight/>

A lot of reasonings and variations(like, why BFS, can we do with DFS, if no then why?, its time and space complexity, can we do by using only O(1) memory to keep track of distance, etc). \xc2\x0

Q2)As the first question gulped the majority of the time because of its variations and reasoning, he told me that he would ask me a theoretical question.

So, first, he asked me to write down all the data structures which I know. And then, to think of real-time applications of each of them. \xc2\x0

Round-5(Technical-cum-Managerial)\xc2\x0

1)<https://www.geeksforgeeks.org/find-rotation-count-rotated-sorted-array/>

2)What would you do if you are stuck in a huge Technical problem? Support your answer with a realtime situation you have faced.

3) Describe an incident where you were in a difficult situation(professional, not personal) first but then, finally came out of it successfully?

And a few other \xe2\x80\x9cDescribe an incident\xe2\x80\x9d Questions were also asked.
\xc2\x0

Additional Information

- The Interviews were conducted on Amazon Chime(A video calling platform).
- Coding questions were asked to code on Amazon\xe2\x80\x99s LiveCode platform where both the interviewer and the interviewee can simultaneously edit and view the code.
- The Interviews were of 1 hr each.

Tips:

- Be thorough with \xc2\x0Time and space complexity calculation, as it is the first question you might get after proposing an algorithm to the interviewer.
- Don\xt be silent in the interview, keep sharing all your thoughts and budding ideas, it would not only engage the interviewer but also help you to get fresh ideas.
- Be polite and carefully listen to the interviewer(you might be lucky to grab a few clues).

A big Thank you to **GeeksforGeeks** for transforming me from a reader to a writer.

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Amazon Interview Experience | On-Campus for SDE-1

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 17 Aug, 2020

Recently, Amazon came to our campus for the role of Software Development Engineer. The hiring process consisted of 1 coding test and 4 interview rounds.\xc2\xao

Round 1 (Coding Round): The coding round consisted of a code-debugging section, Aptitude questions, and 2 coding questions. The code-debugging section was simple where we had to find the fault in the code due to which wrong output was coming. Aptitude questions were general logical-reasoning questions. The coding questions were also easy. I only remember one question.

- [Find an element in a sorted 2-D matrix.](#) \xc2\xao

After this round, 57 people were shortlisted for interviews. Due to the current situation of coronavirus, all the interviews were conducted online on the Amazon Chime platform.\xc2\xao

Round 2 (Technical): I was asked three coding questions. I was asked to write the code on the LiveCode site that Amazon uses and discuss the time and space complexity.\xc2\xao

- [Find the number of disconnected components in a graph.](#) \xc2\xao

I first gave a DFS approach by using a visited array but the interviewer asked me to use O(1) space. Then, I suggested changing the node value when we visit the node.\xc2\xao

- [Populate the next pointer in a binary tree.](#) \xc2\xao

I first gave a level order traversal method which required a queue. She then asked me to do it in O(1) space. So, I gave a recursive solution in which we traverse each level before moving forward.\xc2\xao

- Given a BST, find the number of arrays that will result in the same BST.\xc2\xao

For eg \xe2\x80\x93 Given a BST like this: One array is 2 3 4 5 7 6 10. Another array is 2 5 7 6 10 3 4. But this is not valid array \xe2\x80\x93 2 5 10 7 6 3 4. This is because if 10 comes before 7, then 10 can become the root and 7 become the left child which will result in different BST.\xc2\xao

```
5\r\n / \\\r\n 3    7\r\n / \\\r\n n2   4 6 10
```

Round 3 (Technical): The interviewer first asked me some questions on the project that I had done. Then, he asked me two coding questions.\xc2\xao

- Given an array where each element denotes the cost, we will take two elements, add them, then insert it back in the array. The cost of the operation is the sum of the cost of both elements. We have to minimize the cost.\xc2\xao

Eg: given array as 2, 3, 4, 10. The minimum sum is 5 (2+3) + 9 (5+4) + 19(9+10) = 33.\xc2\xao

The solution that I gave was to insert all elements in a min-heap (implemented as a priority queue) and then pop two elements from the queue, add them and push it back in the queue. We will do this till the size of the queue becomes 1. He then asked me to write the complete implementation of a priority queue, that is, the push, pop, top, empty, and size functions.

- [Devise a stack data structure that performs the following operations in O\(1\) time \xe2\x80\x93](#)

push, pop, top, max element, min element.

I first gave a solution by using three stacks one for the actual stack, one for min element, and one for the max element. He asked me to optimize the space complexity. So, I gave a solution where we encode the min element in the stack itself.

Round 4 (Technical): In this interview, I was asked questions from literally all topics. He started with networks and asked me all the steps that happened when I type www.google.com. Then, he went on to ask what happens in the OS when I type this and how does the OS responds to this high priority process. Basically, he was asking about the scheduling policy used for scheduling a high priority process. He then asked me what happens in the server and possible causes of bottlenecks in servers. Then, he moved on to OOP and asked me about the importance of inheritance and interfaces in OOP. He then asked me two coding questions.

- Given a linked list, return a new linked list such that the order of nodes us 1->n-1->2->n-2 and so on.

For this, I gave the solution to split the linked list in the middle, reverse the second half and traverse both the halves alternately.

- Given a hashmap, we need to print the hashmap in sorted order.

For this, I didn't know the concept of a linked hash map in Java. He gave me the concept of a linked hashmap as I was stuck. I gave a solution to add the key-value pairs in a vector, sort them, traverse the vector and populate the next pointers in the nodes of hashmap. Then, by just traversing the hashmap, we will get a sorted order of nodes.

Round 5 (Behavioral + Technical): In this round, the interviewer asked me many behavioral questions. Some of them were about the difficulties I faced in a project, how I solved them, and how I will handle disagreements in a group. Then, he asked me two coding questions.

- Find the number of couplets and triplets in an array whose sum is 0. I gave him the two pointer approach for solving this problem.
- Given a string, I have to find the longest substring with no repeating characters.

This is a basic sliding window problem where the window will only contain non-repeating characters. We will update the max length if the size of the window becomes greater than the max length.

In the last round, the interviewer was more interested in my approach than the code itself. Also, he asked a lot of behavioral questions in the last round. This can be considered as an HR round, although it was not explicitly mentioned anywhere.

Overall, the interviews were fascinating and whenever I got stuck somewhere, the interviewer would guide me in the right direction. In the end, 7 people were shortlisted for the job, and luckily, I was one of them.

I would suggest doing the amazon interview questions from GeeksforGeeks and interviewbit as they contain all the types of questions asked to date. The archive interview questions in GeeksforGeeks are very helpful as it contains all types of problems with varying difficulty. I would also suggest revising the concepts of Networks, OOP, OS as they might ask questions from those topics too.

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Amazon Interview Experience | Internship \xe2\x80\x93 AmazeWit

- Difficulty Level :\nMedium
- Last Updated :\n17 Aug, 2020

I got to know about Amazewit through the Training and Placement Cell of our college. Check it out here \xe2\x80\x93 <https://www.amazewit.in/>. They had a recruitment drive for both 2021 and 2022 batches. I think their criteria was CGPA>=6.5 , No backlogs, and opened applications on 20th April till 5th May 2020. I received an Online Assessment confirmation shortly after that. This was followed by a series of webinars through Facebook live that might also be available at AmazeWit\x80\x99s Facebook Page.

Online Assessment \xe2\x80\x93 May 22nd \xe2\x80\x93 24th

They sent extensive details about the assessment and we could attempt it anytime within the test duration. They also held a webinar to clarify all relevant doubts. It had the following sections:

(i) **Code Debug** \xe2\x80\x93 20 minutes for I think 4 or 6 questions, I don\x9t remember exactly, but they were fairly simple and time was adequate.

(ii) **Coding** \xe2\x80\x93 70 minutes for 2 questions. the questions weren\x9t direct but if you read them carefully, they boiled down to simpler problems like as follows.

1. It was something like there is flight, and select a pair of movies such that the maximum possible sum of the time is 30 mins less than the time of the flight. Return the index of the pairs. So it boiled down to <https://www.geeksforgeeks.org/pairs-difference-less-k/> . I think I missed some corner case here, as all of my test cases didn\x9t pass.
2. It was something like you need to deliver something so find the closest warehouse. So it boiled down to <https://leetcode.com/problems/k-closest-points-to-origin/> . All test cases passed.

As far as I remember I solved both of them with a sorting approach.

(ii) **Work Style Assessment** \xe2\x80\x93 10-15 minutes \xe2\x80\x93 I was 100% honest and didn\x9t think too much really, and I recommend the same.\xc2\xab

(iv) **Logical Reasoning** \xe2\x80\x93 35 minutes \xe2\x80\x93 I had not prepared for this. We couldn\x9t skip and come back to questions here, I did as many questions I could do as quick as possible.

F2F Interview \xe2\x80\x93 18 June

I had a really nice and humble interviewer !\xe2\x80\x99d say, it was a wonderful experience. I was pretty excited too. We had it over Amazon Chime, due to the pandemic, and we both had our cameras on. (Some people\x80\x99s interviewers didn\x9t switch on their camera too though). He looked at my Resume and asked me to quickly go over it. He also asked me one very genuine question from skills that I had mentioned, about my choice of technologies.

Then we started with coding. Amazon has a very cool coding platform of their own for interviews. He commented and explained the questions there only.

1. <https://www.geeksforgeeks.org/check-anagram-string-palindrome-not/> , a fairly easy question to start with, i asked him some clarifying questions e.g. if its an ASCII string or Unicode and

- about my choice of using an array or a hashmap etc., explained my approach and time complexity of my approach, and then proceeded to coding.
2. <https://www.geeksforgeeks.org/find-missing-number-string-numbers-no-separator/> I was seeing this question for the first time and I don't remember my exact approach. I first explained my approach, time complexity and there he reminded me of the corner case of 99100. Then I coded my solution and did a dry run.
 3. <https://leetcode.com/problems/number-of-islands/>, here also I explained my approach and I had also done this question in the Leetcode Challenge. I had clarifying questions like, do we need to preserve our matrix, etc. (I in general ask a lot of questions for every task so I was really happy that interviews encourage clarifying questions and asked alp that I had xD), and solved it and discussed the solution, time complexity etc.

We were a little bit over time, but my interviewer was gracious. He asked if I had any questions and I had thought of two, one related to Amazon's culture and one related to internships.

I was really happy with the process, and after a long wait we received the results on 6 August.

VERDICT SELECTED

I derived a lot of help and experience by reading interview experiences here at geeksforgeeks and hope to help others too! All the best!!

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Amazon Interview Experience | Off-campus AmazeWow

- Difficulty Level : \n[Hard](#)
- Last Updated : \n04 Mar, 2022

Round 1: Online Assessment

The AmazeWow assessment: 28 technical questions + 2 coding questions.

Time: 1.5 hours

1. \xc2\xd0Evaluation of Postfix Expression

\xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0<https://www.geeksforgeeks.org/stack-set-4-evaluation-postfix-expression/>

2. \xc2\xd0Given n dices each with m faces, numbered from 1 to m, find the number of ways to get a given sum X. X is the summation of values on each face when all dice are thrown.

\xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0<https://www.geeksforgeeks.org/number-of-ways-to-get-a-given-sum-with-n-number-of-m-faced-dices/>

Technical MCQs were based on Data structures, OOPs, Computer fundamentals, etc.

Round 2: Technical Interview 1

1. \xc2\xd0 Given a sorted array with possibly duplicate elements, the task is to find indexes of first and last occurrences of an element x in the given array.

\xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0<https://www.geeksforgeeks.org/find-first-and-last-positions-of-an-element-in-a-sorted-array/>

2. \xc2\xd0 Given an N * N binary maze where a 0 denotes that the position can be visited and a 1 denotes that the position cannot be visited without a key, the task is to find whether it is possible to visit the bottom-right cell from the top-left cell with only one key along the way.\xc2\xd0

\xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0<https://www.geeksforgeeks.org/maze-with-n-doors-and-1-key/>

Time and space complexity of each approach.

Round 3: Technical Interview 2]

Ques: Given an array of strings \xc2\xd0

String 1 : a/b=1.6

String 2 : b/c=2.3

String 3 : p/q=2.8\xc2\xd0

\xe2\x80\x99

String n: y/m\xc2\xd0

Then return the value of a/c

There can be more such queries like f/a or anything.

Time and space complexity of the approach used.

Round 4: Technical Interview 3

Ques: The cost of a stock on each day is given in an array, find the max profit that you can make by buying and selling in those days. Given conditions

(i) You can make any number of transactions.

(ii) For a particular day, you can either buy or sell a stock, but not both.

(iii) You cannot sell a stock before buying it. (Lol Quite obvious)

<https://www.geeksforgeeks.org/stock-buy-sell/>

Modification: Modify the code for k number of transactions instead of any number of transactions.

Time and space complexity for each.

Computer fundamentals and networking questions. A few of them are listed below:

(i) If we have our services over several locations, how do we reduce the latency for retrieving data?

(ii) What are the types of cache?

(iii) Difference between thread and process.

(iv) Which one is light-weight among thread and process and why?

(v) What happens when we type a URL on our browser?

(vi) How servers handle a large amount of load?

(vii) Networks among systems are centralized or peer to peer?

Round 5: Technical Interview 4 + HR round

Projects:

Personal projects + projects completed during internships

Fundamentals check:

Some basic fundamentals of python and OOPs

(i) Difference between list and tuple

(ii) Difference between deep copying and shallow copying

(iii) Overloading and overriding

(iv) Given 2 examples of overriding , tell why or why not overriding concept will fail here.

Behavioral:

Tell me about a time when you have faced some challenging situation in your past (during any project or internship) and how I tackled the situation.

Coding:

Given an array of strings

Each string in the format <Operand><space><Operator><space><Operand>

Operand = [a-z]

Operator = greater than or less than sign (> or <)

Find if the given set of strings is valid or not. A set of string is valid if there is no paradox.

Verdict: Selected

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Amazon ACMS Interview Experience | SDE Intern

- Difficulty Level : \n[Medium](#)
- Last Updated : \n17 Aug, 2020

ACMS is **Amazon Campus Mentorship Series** for women in Tech. Amazon visits a few colleges to select a few students for this program by conducting an online exam.

Selection process: Amazon conducted a test to shortlist the students for the mentorship program. The test had around 23 MCQ\xe2\x80\x99s and 2 coding questions. MCQ\xe2\x80\x99s were quite simple. They covered Programming languages, DBMS, and few topics of OS.

The coding questions were simple too. One was the Coin Change problem (Minimum number of coins). I don\xe2\x80\x99t remember the other one but it was quite simple too.

The results were declared exactly after 15 days of the test.

Mentorship Program \xe2\x80\x93 Sessions: After Amazon shortlisted few students for mentorship, we had various sessions on Object-Oriented Principles, Amazon Leadership Principles, Data Structures and Algorithms, Databases, etc. There were 4 sessions one every month(almost) from February. \xc2\xabAfter the first session, we were divided into a team of 5 and were assigned a mentor. \xc2\xab

We were informed about the interviews in our last sessions and were asked to prepare all the CS topics. After our final session, we had a mock interview with our mentor where our mentor wanted to give explanations to us how interviews are done at Amazon. The mock interview was quite helpful to prepare for the original interviews.

Mentorship Program \xe2\x80\x93 Team division and project: The team division was random. We had a call almost every 2 weeks with our mentor, and we were working on a project decided by our mentor. The main aim of the project was to check if we\xe2\x80\x99re a team player and the technologies we know etc. Since it was the COVID season, the only first session was offline at the campus in Hyderabad. All the other sessions including the meetings with mentors were virtual.

We were given a month to complete the project. So the work division and the presentations were done accordingly. This gave us an experience of how projects are done at Amazon. The entire project was divided into 5 parts which were database designing, backend connectivity, 2 separate features, and front end. I worked on the front end of the project.

Later in the last week, we were asked individually to integrate the project and were asked questions on the integration of the project in the mock interview.

Mock Interview: Since the interviewer was my mentor itself, he directly started asking me a coding question and asked me to optimise as much as possible. The question was a basic problem on arrays: \xc2\xab

- [Given an array arr\[\] of n integers, construct a Product Array prod\[\] \(of the same size\) such that prod\[i\] is equal to the product of all the elements of arr\[\] except arr\[i\].\xc2\xab](#)

He then asked me not to use the division operator and asked me to modify as much as possible. After that, he asked me to add a feature to the project we did and asked me to code for the feature and make necessary changes. This was just for him to get an idea about us since the sessions weren\xe2\x80\x99t offline, they had to conduct a mock interview individually to check our

performance.

Interview Round 1: The interviewer asked me a question on strings. The question was quite simple.

- Given a string s with opening and closing brackets (parentheses), the number of parentheses to be removed to make it a valid string.
- I was asked to print the valid strings. I was asked to optimise as much as possible but since it was a timed interview for 1 hour, I couldn't code the entire thing.

Interview Round 2:

The interviewer started by asking me about myself and my **ACMS** experience and then he started asking coding questions. The question was similar to the Two Sum problems from leetcode.

<https://leetcode.com/problems/two-sum/>

The questions were simple and straight forward. If you're stuck anywhere make sure to ask the interviewer for hints. They will surely help you out.

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Amazon ACMS Interview Experience

- Difficulty Level :\n[Medium](#)
- Last Updated :\n13 Aug, 2020

Hi! If you're looking to know about ACMS, I am here to share my experience with it.

What is ACMS?

Amazon Campus Mentorship Series(ACMS) is a diversity initiative to help women in tech to integrate into business through a series of workshops, training and business communication. This follows the model of classroom based learning facilitated by Amazon leaders and spans over 4 classroom sessions over a course of 24 weeks. Each session is of 4-6 hours duration. Along with these sessions, students are grouped and assigned a small project to give them an opportunity to apply the learning. Mentoring is one the key factors and each group is assigned a mentor. These mentors work with their respective groups for the entire duration and help the students in completing their assigned projects.\xc2\xab

Amazon came to our campus and conducted the first round of selection on 25th January 2020, where 8 students were selected for the mentorship.\xc2\xab

Once the mentorship started we got to visit the Amazon Hyderabad Campus and have the first face to face session in the February of 2020. Although other sessions were to be carried out in a similar fashion, due to the pandemic, our face to face sessions were carried out online on Amazon Chime. In these sessions we learned topics such as Functional programming, OOPs concepts, Machine learning introduction, Problem solving, Data structures, Amazon leadership principles etc.\xc2\xab

In the April of 2020, we were assigned our teams(8 girls from our college were made into 2 teams. Students of previous years were assigned teams randomly) and our mentor made contact with us for the first time and notified us about the project. We were given around 45 days to complete the project during which our mentor was always available to clear our doubts and suggest new ways to approach the problem. It was a huge learning experience.

Our mentor also conducted mock interviews and weekly meeting to track our progress about the project and train us for the upcoming interviews and gave us tips to improve ourselves.

Our final face to face session was scheduled in mid July. Where we were informed that our interviews would be scheduled in July.\xc2\xab

Our interviews were conducted on Amazon Chime and a live coding platform. After a month of the interviews we were given our results, where 6 out of the 8 students have secured an intern position at Amazon.

Interview Experience:

First Round:

The questions were on the easy side.

- MCQs about C (find error, find output etc.)
- 2 programming questions (learn standard Dynamic Programming questions)

SDE Interviews:

First Interview: (1 hour interview. 2 questions apart from \xe2\x80\x9cIntroduce yourself\xe2\x80\x9d)

1. Given a sorted array whose size is unknown find the number of times a given element occurs.
2. Given an array find the shortest subarray to delete such that the remaining array in non decreasing order.

Second Interview: (1 hour interview (same day). 2 questions apart from \xe2\x80\x9cIntroduce yourself\xe2\x80\x9d)

1. Assume a binary tree with a mirror passing vertically through the root node. Given a node on the tree. find which node would become it\xe2\x80\x99s reflection.
2. Given an array of stock prices. Find the maximum profit one can make by buying and selling any number of times. But you cannot sell before you buy.

Practice carefully and do not get nervous in your interviews. Never be afraid to ask your interviewer doubts or hints. For each question you should be able to give a proper time and space complexity analysis \xc2\xa0for every solution you propose.

All the best for your interview preparation.

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Amazon Interview Experience for SDE-1 | Amazon-WOW 2020

- Difficulty Level : \n[Medium](#)
- Last Updated : \n04 Mar, 2022

Amazon has a special program called AmazonWOW for women. It is to promote women in technology. It is a very good opportunity for women as they have to only compete with other females, not with males. The online application came in April. The program consists of a two-month internship for prefinal year student and fulltime plus Internship for final year student.

It consisted of a total 4 rounds, first was an online coding contest and then 3 telephonic interviews.

Online test :\xc2\xd0

The first round was an online coding round. It consisted of 2 coding questions and 28 MCQ. We had 1.2 hrs. The coding questions were quite simple but MCQs were very difficult. I would like to say that luck matters a lot in cracking online coding round.

1. First question: Find the longest common subsequence between two string. It is standard Dynamic programming question but the constraints were not very high so I solved it using recursion.

2. Second question: I did not find the exact question on any platform but it was very simple. You are given a string consisting of lowercase English alphabets, return the internet resource address of the string.

Internet resource address of a string is defined as

<protocol>://<domain>.ru[/<context>]

<protocol> can be either http or ftp.

<domain>is a string consisting of lower case English alphabtes.

<context> is a non mepty string of lower case English alphabtes.

Ex:\xc2\xd0: httpsunrux -> http://sun.ru/x

For MCQs, you must have a strong grip on OOP and c++ language.:

Round 1:\xc2\xd0

For this round, I was given an amazon chime link and live code editor link in which I had to code. The interviewer started by asking me my introduction and then he gave his introduction. In my introduction, I told him about my passion for competitive coding, writing and reading.

Then Immediately we moved to coding questions. He told me that I have only 45 minutes to answer so I have to come up with the best approach possible.

1. First Question:\xc2\xd0 Find $x^y \bmod z$. I gave him the $O(\log(y))$ approach. I covered all the edge cases when x will be zero or negative when y will be zero or negative. When y will be negative, he told me to return an error to the user. I coded properly using indentation and suitable variable and function names. I used int to store the variable but when the value is very high I should use long long int. I missed this case. He then moved to the second question.

2. Second Question: Given a set of dependencies I have to find one of the suitable ordering of the dependencies. I told him I will use topological sort for this. He told me to explain my approach and then I coded it. But while coding I missed an edge case when there will be a cycle in the dependency. He told me to correct my code. I corrected my code by checking if there is a cycle present in the dependency.

3. Third Question: For this question, I gave him two approaches, first one was linearly counting the no of x and second was using a modified binary search. He did not ask me to code this question.

The best part was that I had already solved all these questions before so I did not get nervous there. In the end, I asked him where I can improve, He told me to check code before finally submitting to the interviewer.

After 12 days the result of this round was declared.

Round 2:\xc2\xd0

For this round also, I was provided with the Amazon chime link and live code link. The interviewer asked me two questions.

1. First Question: Add all greater values to every node in a given BST. I gave him O(n) time complexity solution. Initially, I had written the wrong code but my approach was right. He dry ran my code, pointed out the mistake that I made in code and told me to correct the code. I corrected the code and he was satisfied by my approach. I told him about the time complexity ie O(n). I told him if we consider internal stack then space complexity will be O(n) because in the worst case the height of BST can be O(n) if it is skewed BST.

2. Second Question: But in this question, He gave me three conditions.

1. You can traverse the data structure in only one direction.
2. You cannot use extra space ie in-place algorithm.
3. You can use any data structure of your choice.

My first approach was to use an array data structure. I told him that in first traversal I will find the count of negative numbers and then I will start filling my result array. But he said I cannot use extra space.

My second approach was to use a binary search tree and the result will be inorder traversal of the tree. But he told me that I have to return the data structure which I am using.

Then He asked me what are the data structures that I know. I told him I know heap, queue, stack, singly-linked list and doubly linked list. Then suddenly doubly-linkedList came to my mind and I told him I will use doubly Linked List. He told me that in doubly-linked you can traverse in both directions. Then I told him that I will use a singly linked list. He told me to write code and dry ran my code. He was satisfied with my code.

My second interviewer was a very helpful and knowledgeable person. In the end, he said \xe2\x80\x9cit was nice to interview you. \xe2\x80\x9d

After 11 days the second-round result was declared.

Round 3:\xc2\xd0

For this round also, I was provided with the amazon chime link and live code link. The interviewer

was a very nice and chill person. He tried to make me comfortable. He introduced himself and then I gave my brief introduction. In this round, I was asked two questions. One was a coding question and the other was OS(operating System) question.

1. First question: If we have a well-optimised code, On what factors the maximum no of threads in a process depends?

We had around half an hour discussion on this topic. I told him how threads are used in the client-server application, use of threads in a text editor which simultaneously performs writing, auto-correction and suggestions. He asked me if a site has 1 million clients, then 1 million threads will be created, I told him about the use of multiple servers. I told him the no. thread depends upon the resources of the machine. I told him it will depend upon the memory of the computer. Then He wanted to know, which memory affect it, primary memory or secondary memory. I told primary memory will affect the no of threads as all the processes/ threads reside in the primary memory. I was thinking of other factors also but then he moved to coding question.

After this, we moved to coding question.

2. Second Question: Find the first missing positive number in an array.

My first approach was to use hashing, the time complexity of this approach was $O(n)$ and the space complexity was $O(n)$. He told me to do it in constant space. I suggested to him that whenever I will encounter an element and if it is smaller than n, then I will make element negative at that index. Then I will traverse the whole array again and if I find any index whose value is non-negative, its means that element is not present and it is the first missing positive no. If no such no. is found then the answer will be n (size of the array) + 1. But this approach will not work for an array containing negative and repetitive no. So I improved my code to handle the negative and repetitive no.

He was very much satisfied with my approach. In the end, he asked me to ask a question to him. I asked him how can I improve more. He seemed to be very much impressed by me. He told me that I am very sharp in handling all the edges cases and I am very focussed.

Result: **SELECTED**

Some important tips:

1. Always believe in your self.
2. Communication skills matter a lot in the interview.
3. Luck is an important factor, you can not ignore it.
4. Always be positive in life. No matter how difficult the situation do not give up.
5. Practise and patient is the key.

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Amazon Interview Experience | SDE-1 (Off-Campus, 1 Year Experienced)

- Difficulty Level : \nMedium
- Last Updated : \n10 Aug, 2020

Hey guys !\xc2\xa0

I am sharing with you my interview experience with Amazon for SDE-1 role in June 2020. I was contacted by the HR asking me for my Resume. Next day she said she will be sharing an Online Assessment link.\xc2\xa0

Round 1:(Online Coding Round on Amcat Platform)\xc2\xa0

There were two coding questions need to be completed in 90 Min.\xc2\xa0
\xc2\xa0

1. <https://leetcode.com/discuss/interview-question/542597/>
2. <https://leetcode.com/discuss/interview-question/411357/>

<https://leetcode.com/discuss/interview-question/344650/Amazon-Online-Assessment-Questions/350386>\xe2\x80\xb3>

After this round, All rounds were **Virtual Onsite Interviews** of 1 hr each held on video call through Amazon Chime.\xc2\xa0

Round 2:\xc2\xa0

This round started with the Interviewer\x80\x99s introduction and then my introduction. He then jumped to questions.\xc2\xa0
\xc2\xa0

1. [Search an element in a sorted and\xc2\xa0rotated array](#)

I gave him the pivoted approach. He then asked me to code it on a live code share.\xc2\xa0

2. Follow-up question: He asked me to solve it in a single Binary Search without finding the pivot.\xc2\xa0

Then I gave him the Improved Solution and he asked me to code it.\xc2\xa0

3. Tell me about a project that you have completed in your current organization.\xc2\xa0
4. Behavioural question: Any situation when you had to cut corners to meet a deadline.\xc2\xa0

\xc2\xa0\xc2\xa0

Round 3:\xc2\xa0

This round again started with the Interviewer\x80\x99s introduction and then my introduction. He then jumped to questions.\xc2\xa0
\xc2\xa0

1. [Count number of occurrences \(or frequency\) in a sorted array](#)

First I gave him the naive approach and then optimized to the best solution. He asked me to code

it.\xc2\x0

2. There are N bags, each having some no. of coins given by an array. We will be making K turns. In each turn, we have to select a bag and take out half coins from it (if coins=even, then coins/2 else coins/2+1). Return the maximum no. of coins that can be taken out in K turns.\xc2\x0

Approach: Solved using Max Heap.\xc2\x0

\xc2\x0\xc2\x0

Round 4:(Hiring Manager)\xc2\x0

This round again started with the Interviewer\xe2\x80\x99s introduction and then my introduction. He then asked me a lot of Behavioural questions related to the projects for the first 40 minutes. [Here](#) you can find some Amazon Behavioural Questions. Then he asked 2 coding questions:\xc2\x0\xc2\x0

1. [Print all subarrays with 0 sum](#)

We first discussed the approach and then he asked me to code it.\xc2\x0

2. [Print all pairs with given sum](#)\xc2\x0

He wants me to discuss all the possible solutions (Naive, Sorting, Hashing) with their time complexities. Only the approach, no need to code.\xc2\x0

\xc2\x0\xc2\x0

Round 5:(Bar Raiser)\xc2\x0

This round was taken by a Senior SDE having 10+ years of experience at Amazon. The round started with his introduction and then my introduction.\xc2\x0
\xc2\x0

1. Tell me about a project that you have completed in your current organization.
2. Some Behavioural questions related to the project.
3. [Transform a BST to greater sum tree](#)
4. [Find intersection of intervals given by two lists](#)

Verdict: Selected

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Amazon ACMS Interview Experience

- Difficulty Level : \nMedium
- Last Updated : \n04 Aug, 2020

Hey Everyone! Amazon visited our campus for ACMS selection. I am sharing my experience of entire journey here.\xc2\xab0

ROUND 1: Everyone who satisfied the required cgpa (probably 7) criteria was allowed to sit for this round. There were three coding questions to be completed in 1.5 hrs.\xc2\xab0

1. Arrays and Strings\xc2\xab0

2. Linked list \xe2\x80\x93 A linked list was given : 1->1->1->2->2->3->\xc2\xab0

Required Output: 1->3->2->2->3 (finds the occurrence for each element in an unsorted list and printing it next to the element if frequency is greater than 1)\xc2\xab0

3. Linked List\xc2\xab0

ROUND 2: Shortlisted students received a mail from Amazon with another test link of duration of 1.5 hrs.\xc2\xab0

The test had two coding questions and 30 MCQs. MCQs were based on OOPS concepts, DSA, DBMS, OS and networking, Pointers in C++: concepts of pointer to a pointer, function pass by values versus pass by reference, expected output.\xc2\xab0

The selected students received a mail after 3-4 weeks. Mentorship was started where three people were assigned a mentor, SDE in Amazon who guided us throughout. There were 4-5 technical sessions where we were taught different topics like OOPS, Data structures, functional programming, DBMS, Design patterns, scalable services, web hosting, database clustering, NoSQL etc..\xc2\xab0

Along with the technical sessions, assignments were given each week. A project was also assigned to us. Based on assignments and project, we were shortlisted for interviews.\xc2\xab0

ROUND 3: INTERVIEWS\xc2\xab0\xc2\xab0

I had two interviews on same day.\xc2\xab0

First Interview:\xc2\xab0\xc2\xab0

1. I was asked about a puzzle. You can refer the link below to know exact problem statement.\xc2\xab0

<https://www.geeksforgeeks.org/puzzle-two-robot-parachute-line/>\xc2\xab0

2. Second question was easy.. it was similar to trapping rain water\xc2\xab0

<https://www.geeksforgeeks.org/trapping-rain-water/>\xc2\xab0

Second Interview:\xc2\xab0\xc2\xab0

1. I was asked about my mentorship and projects.\xc2\xab0

2. He asked me questions about hashmap in detail.. collision handling, hashing, hash code etc.. He covered almost every topic related to hashing and hashmap in depth.\xc2\xa0

3. LRU Cache\xc2\xa0

4. Questions related to graphs and trees in depth.\xc2\xa0

Time complexity and space complexity for each question was asked.\xc2\xa0

After around 3-4 weeks, I got the mail of selection along with 3 other students from my college.\xc2\xa0

TIPS FOR PREPARATION\xc2\xa0

I practiced for about 5-6 months . Initially I practiced topic wise , later when I was confident enough I started practicing company wise (mainly for those companies which visited our campus). Also I made it a habit to read atleast one interview experience from gfg daily.\xc2\xa0

TIPS FOR INTERVIEW\xc2\xa0

1. Think out loud. Interviewer is more interested in knowing your thought process than the exact solution. So, speak whatever you are thinking while creating a solution.\xc2\xa0
2. Don\x92t give the most optimised solution directly even if you know, tell the brute force solution first and then optimise the solution.. (my mentor gave me this tip since he had also interviewed many candidates and rejected few who acted too smart because he thought they are more of textbook geeks)\xc2\xa0
3. Ask the interviewer before starting to write the solution\xc2\xa0
4. Explain your approach first using examples and walk the interviewer throughout the solution. This creates an impression of clarity.\xc2\xa0
5. Interviewers drop hint whenever you are going in wrong path during interview, try to form your solution around that hint.
\xc2\xa0

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Amazon Interview Experience (On-Campus for Internship 2019)

- Difficulty Level :\nEasy
- Last Updated :\n29 Jul, 2020

Amazon visited our campus for internship and full time. I took part in the internship drive and I am sharing my experience here.

Round 1 (Online) :

Everyone who satisfied the required cgpa (probably 7) criteria was allowed to sit for this round . It was mixture of aptitude and coding questions . The main parts were :

1. Logical Reasoning \xe2\x80\x93 Questions based on basic mathematics , relations , paragraph based questions were asked .
2. Debugging \xe2\x80\x93 We were asked to correct the given code / write the output of the given code in preferred language (c++, java etc).
3. Coding \xe2\x80\x93
 1. Graph based question (BFS) :
<https://www.geeksforgeeks.org/shortest-distance-two-cells-matrix-grid/>
 2. Matrix based question :\xc2\xao
<https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/>

I could solve both the coding questions in minimum time and space complexity .

Round 2 (Pen and Paper Round) :

We were given two DSA questions and we had to write production ready code from scratch in 30 mins. The questions were:

1. <https://www.geeksforgeeks.org/lowest-common-ancestor-binary-tree-set-1/>
2. <https://www.geeksforgeeks.org/print-a-given-matrix-in-spiral-form/>

The code had to be syntactically correct and also all edge cases should have been covered . Additionally if you are confident enough do mention the time and space complexities. Small things like **proper variable names , edge cases consideration , neat code** makes a huge difference .

Round 3 (PI) :

This was the first face to face interview round . The interviewer was friendly and made me feel at ease before starting the interview . First he had a quick look at my cv . I didn\xe2\x80\x99t have any personal project / previous internships / extra technical skills .So I was asked mostly conceptual questions . \xc2\xao\xc2\xao

He asked me my preferred programming language . (I said C++). He asked me some questions on object oriented programming aspect like what are the main features of object oriented programming , difference between the access specifiers , where to use what , what are the benefits of oop , inheritance & polymorphism in depth etc .\xc2\xao

He asked me some dbms questions . I was asked to write one or two sql queries mainly based on joins.

Then he shifted to DSA . I was asked about hashing \xe2\x80\x93 how it is implemented , types etc . I was also asked to design a hash function of my own . I couldn\x9t answer this question perfectly . Then I was asked two DSA questions \xe2\x80\x93

1. LCA : <https://www.geeksforgeeks.org/lowest-common-ancestor-binary-tree-set-1/>

At first I couldn\x9t give the space optimized solution . He gave me some hints and ultimately I could give the space optimized solution .

\xc2\xd0

2. <https://leetcode.com/problems/k-th-symbol-in-grammar/>

I could give the recursive solution for this but it was not space optimized , so he gave me several hints . I followed them ,even went in the right direction but couldn\x9t come up with the correct solution . However I shared my thought process throughout the discussion .

This round took about 1 hour . Some of my friends were called for a second PI round .

NOTE \xc2\xd0: It\x99s better to be fluent in java as most interviewers prefer that . Also it\x99s not always important to give the correct code. The way we are approaching the question , our thought process matters as well . Therefore **think loud**.

Verdict : Selected

I practiced from geeksforgeeks for about 5-6 months . Initially I practiced topic wise , later when I was confident enough I started practicing company wise (mainly for those companies which visited our campus). Also I made it a habit to read atleast one interview experience from gfg daily .

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Amazon Interview Experience- System Dev Intern

- Difficulty Level :\n[Hard](#)
- Last Updated :\n30 Jul, 2020

Written Test

There were 30 MCQs based on DBMS, OS, output questions, OOP concepts. And there were 2 coding questions \xc2\x90

- One simple question based on the array.
- Second based on Dynamic Programming [Number of ways to get a given sum with n number of m faced dices.](#)

Both the coding question needed to be solved to proceed for the interview.

Based on my performance in the written test and maybe my resume they had selected me to interview for the System Dev Intern.

Interview Round -1

The interviewer went through my resume. Without wasting any time he said let\xe2\x80\x99s move into coding. He told me that first he would explain/write the question. Then I will have to tell my approach and then after the approach in final, I will write down the working code in an A4 size paper.

Question- \xc2\x90[Search an element in a sorted and rotated array](#)

I told him about the approach to find the pivot using binary search and then apply binary search in two half to find the element. He told me if I can find the pivot using binary search then I can also find the element without finding the pivot. I got stuck at this moment. Then I asked him for a hint he said you have the first element in the array, last element and the middle element how you can use it, using this I was able to solve and write the working code in the paper.

Why I used mid= start +(end-mid)/2 ? \xc2\x90(to avoid overflow!)

Time Complexity of the program was asked. (O(log n))

Then he asked me some questions related to my project, internships and all went fine.

Interview Round -2

The interviewer started that your projects and internships were discussed by the previous interviewer lets start with coding. He asked a simple character count program but basically wanted to know about my knowledge about STL i.e use of Map.

The main interview started with questions from subjects

- Basic shell commands like cd, pwd and also asked me grep, cut commands as had done shell scripting before in my project.
- Operating system related question, scheduling
- What happens when I write a URL and press enter in the browser.
- Networking related questions like TCP and UDP
- He gave me some example and asked which protocol is used here.

- And some scenarios which one should we use and why?
- When should we increase the number of servers and when we should increase the performance of servers. (Vertical and Horizontal scaling)

That\xe2\x80\x99s all at the end of the day I was selected.

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Amazon Interview Experience | SDE-2

- Difficulty Level :\n[Medium](#)
- Last Updated :\n18 Sep, 2020

I was recently interviewed for Amazon SDE 2. There was a **online test** followed by **4 rounds** of online interviews.

Online Test : 2 Questions.

1. You are a in-flight movie service provider. You are given a list of movie lengths and the duration of the flight. Return a pair of (2) movies whose combined length is the highest and is less than or equal to flight duration. If multiple such combinations are possible, return the pair which has the movie of longer longest duration.

Ex :

MovieLengths : {27, 1, 10, 39, 12, 52, 32, 67, 76}

Flight Duration : 77.\xc2\xa0

The 2 possible pairs are (1,76) and (10,67), The answer is (1,76) as per the last constraint.

\xc2\x02. You are given a list of pairs of items(strings) where each pair is an association. Return the association group with the highest number of elements. If two groups have the same size, return the group that has the lexological smallest element between these 2. Also while returning the group, return it in a lexological sorted order.

Sample Input : {{Item0,Item1}, {Item2, Item3}, {Item0, Item4}}\xc2\xa0

Round 1: Technical round and some Amazon Leadership Principle questions.

1. Brief Introduction.
2. <https://www.geeksforgeeks.org/find-number-of-islands/>
3. Why Changing Company.
4. Why amazon.
5. Explain a situation where you have taken an initiative in the current role that helped the team/company in a quantitative way.
6. Explain a situation where you solved a problem which had a lot of time constraint associated with it.

Round 2: Technical Round \xe2\x80\x93 1st Try

1. <https://www.geeksforgeeks.org/longest-increasing-subsequence-dp-3/>

I had internet problems, so had to retake round 2.

Round 2 : Technical Round \xe2\x80\x93 2nd Try

1. Given a list of pairs of characters \xe2\x80\x9cPairs Array\xe2\x80\x9d and a list of double

numbers \xe2\x80\x9cWeights Array\xe2\x80\x9d resolve the weights of query array.

Sample Input :

Pairs Array : {{a,b}, {b,c}, {c,d}, \xe2\x80\xa6}

Weights Array {5.0, 7.0, 2.0,\xe2\x80\xa6}

Query Array {{a,c}}

Explanation : each object in Pairs array is associated with the equivalent element in the weights array as follows.

a/b = 5.0, b/c = 7.0, c/d = 2.0.

Query = {a,c} = a/c = a/b * b/c = 5.0 * 7.0 = 35.0

So the answer is 35.0.

Do Note that the Weight Array can have Zeroes.

2. asked to write code, explain algorithm and space, time complexity.

Round 3 : Hiring Manager Round: (Design)

1. Brief Introduction.
2. Describe projects I had worked on.
3. Some technical questions on the projects.
4. Explain a situation where you had to go deep to resolve an issue.
5. Design a file sharing system with Version control of files. (Dropbox)

Round 4 : Bar Raiser:

1. Give the result of \xc2\xad<https://www.geeksforgeeks.org/previous-greater-element/> and <https://www.geeksforgeeks.org/next-greater-element/> in a single pass over the input data.\xc2\xad
2. Explain a situation where you have taken an initiative in the current role that helped the team/company in a quantitative way.
3. Explain few answers in the previous interviews that you would like to change now.
4. Explain few design patterns that you have used till date.
5. Elaborate on the software designs that you have created in you work.
6. Design a Chess Game.\xc2\xad

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Amazon SDE Internship Interview Experience | On Campus-2019

- Difficulty Level :\nBasic
- Last Updated :\n14 Jul, 2020

AUG-2019

ROUND 1: It was a Computer Based Test Interview of 90 min.

Difficulty : Medium.

3 TIMER SECTIONS :

- 1- Aptitude questions.
- 2- Debug the code.(JAVA/C++/C /PYTHON ETC.)
- 3- Two medium coding questions .

- <https://www.geeksforgeeks.org/round-robin-scheduling-with-different-arrival-times> . PS:OS-based coding question
- Finding path in matrix.

20 /90 got selected.

ROUND 2: Coding Interview Round

Started with friendly handshake and cliche question \xe2\x80\x9d Tell me about yourself something unique which is not mentioned in cv\xe2\x80\x9d .

All the coding questions were asked in 3 phases:

- 1-Data structure & Algo to be used
- 2- Writing explicit code & explaining complexity.
- 3-Again solving it with modifications & optimization.

Q1: <https://www.geeksforgeeks.org/minimum-number-of-jumps-to-reach-end-of-a-given-array/>

Further solving if negative jumps are given.

Q2: <https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/>

The main focus was on algo used i.e. BFS

Q3: <https://www.geeksforgeeks.org/check-if-value-exists-in-level-order-sorted-complete-binary-tree/>

I told basic approach i.e. traveling in the right direction & then storing the required level and doing Binary search. But the use of gray code was required.The interviewer helped me to get to the soln.

Q4: Sort a nearly sorted (or K sorted) array.

Interviewer hinted to use searching algo.I got the point to use insertion sort.

Then he asked if i could use any data structure to optimize it .I used heap .

There wasn\xe2\x80\x99t any time pressure .If you aren\xe2\x80\x99t getting any idea of how to start , interviewer will give you suggestions.

Do a dry run on paper to explain your code.

He moved to cse fundamentals :

1- Explain on paper Deadlock.

2-Elucidate inheritance.

3-Asked for preference JAVA /C++. I said java.

4-Does JAVA support multiple inheritance?

He expected me to explain the diamond problem with a clear example.

At last, asked me if I had any questions for him.

This is a great opportunity to showcase your oratory skills. I Asked about current projects, domain of intern work which would be given.

The interviewer was really helpful in steering my way to get to the optimized soln by giving constantly hints. Its just that you need to speak out your thought process.

I would like to owe 80% of my success in cracking amazon interview to GFG who have beautifully curated sections like :

1-AMAZON Interview Experiences.

2-<https://www.geeksforgeeks.org/must-do-coding-questions-for-companies-like-amazon-microsoft-adobe/>

3-<https://www.geeksforgeeks.org/must-coding-questions-company-wise/#amazon>

I must say there was a huge questions question resemblance that helped me to get on to the solution approach in time quickly.

I am really proud & elated from being an avid reader of AMAZON Interview Experiences to being a writer of one.

GFG is a must-read to crack such tech-giants company.

THAAANXXX TEAM GFG.

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Amazon Interview Experience for SDE-Intern

- Difficulty Level :\n[Medium](#)
- Last Updated :\n08 Jul, 2020

I recently scored an SDE internship with Amazon (Gurugram). Here are my two cents.

1. Stop listening to whoever boasts about having an easy interview. A lot of folks become complacent and are unprepared when the interviewer throws a difficult problem at them.
2. Pick a website of your choice- Leetcode, Hackerrank, InterviewBit etc and practice every day religiously. There\xe2\x80\x99s no slacking on this front.
3. Cramming Amazon or XYZ company-tagged questions won\xe2\x80\x99t be sufficient. The idea is to practice enough questions to develop your coding abilities and become able to tackle a completely new problem.
4. Be comfortable with calculating the time and space complexities of your program.
5. You should know basic data structures (and a few advanced ones like Tries, balanced BSTs etc) and the complexities of the operations on them.
6. For the online round, try to solve a few debugging and SAT-style questions in a limited time.
7. Prepare solid answers based on your resume and projects for the behavioral round in tune with Amazon\xe2\x80\x99s Leadership Principles. Practice with a friend.

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What is E-paper Technology in Amazon|x80|x99s Kindle?

- Difficulty Level :[Expert](#)
- Last Updated :[09 Jul, 2020](#)

Amazon is one of the most famous IT companies in the world. It had launched a product called Kindle (2007), aimed at book lovers who could now read several books with new technology. **E-paper** or [Electronic paper](#), aka Electronic Ink Display (EID), is the representation of ink on paper with the use of technology. Unlike other similar technologies that use back-light, E-paper follows the principle of reflection of light.

https://www.amazon.com/dp/B07F7TLZF4?ref=ods_ucc_eink_oasis_nrc_ucc&th=1

Technical Details



History

Gyricon was the first kind of E-paper and was developed by Xerox. Gyricon uses polyethylene spheres of 2 colors, black and white. The black part is negatively charged while the white part is positively charged. The application of voltage decides which color is visible to us. These spheres are suspended in oil so they can rotate freely when voltage is applied and placed in a transparent silicone sheet.

E-paper technologies are several such as *Gyricon*, *Electrophoretic Displays*, *Electrowetting displays*, *Electrofluidic display*, *Mirasiol*, etc. Here, we would be talking only about the technology used in Amazon Kindle, i.e. Electrophoretic Displays.

Electrophoretic Displays

In Electrophoretic Displays, titanium oxide particles are placed in oil which is mixed with blue-black colored dye. When a negative voltage is applied, the particles move away from the viewer and are hidden behind the dye, which results in the viewer seeing the color of the dye. A positive voltage on the other hand makes light scattering particles move towards the viewer and he can see the color scattered by the light.

Advantages

1. We can view E-paper in sunlight as well as in normal light (same readability as paper).
2. High resolution and high contrast are seen in E-paper.
3. It has a wide viewing angle of 180 degrees, we can view the screen with ease from any position (unlike LCD which is better viewed only from the center front).
4. E-paper is very thin and flexible.
5. It has very minimal power consumption (4 hours charge of Kindle can last up to 4 weeks).
6. It has a reflective display, so no need for a backlight.
7. They do not strain the users' eyes.
8. It is more suited to e-learners due to lower power drainage.

Disadvantages

1. It has a low refresh rate. It cannot be used in products with high user interaction.
2. It has a ghosting effect, the images may be refreshed but their shadow may still be visible.
3. There is a lot of competition in the market. Other technologies have become industry standards and inventions in those, have also addressed the power drainage issue.
4. This works just like a normal book, hence, it becomes very difficult to read it in the dark.
5. Some sort of room lighting is always needed to read (it is unreadable in the dark).

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Amazon Interview Experience | SDET (Off-Campus 2020)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n29 Jun, 2020

I got to know about the open role through my college placement team. I later contacted the Amazon APAC recruiter on LinkedIn and forwarded my resume stating my interest in the role. the role for which hiring was begin done was *Software Development Engineer in Test.*\xc2\xa0

I along with 5 students in my department heard back from the recruiter and we were provided with an online test link.\xc2\xa0

The online test was begin held on mettle platform and had 2 coding questions and 20 MCQ\xe2\x80\x99s. the coding questions we easy-medium level and MCQ\xe2\x80\x99s covered ds/algorithm, c language, and OS concepts.\xc2\xa0

for clearing the online test I would recommend to regularly practice competitive programming and participate in ongoing contests\xc2\xa0

I cleared the online test and was further instructed that I will be having my first round in next 2 days.\xc2\xa0

Round 1:\xc2\xa0

The interview was being conducted online on the amazon chime platform. I was asked to introduce my self by the interviewer and then I was asked two coding questions\xc2\xa0

problem 1 \xe2\x80\x93 <https://www.geeksforgeeks.org/minimum-number-swaps-required-sort-array/>\xc2\xa0

I was supposed to clearly explain all the approaches that I was thinking about and also **time and space complexity** were asked.\xc2\xa0

the interviewer was from java background and I coded in CPP so explaining syntaxes was also important.\xc2\xa0

Round 2:\xc2\xa0

*This was **design round** and a design problem followed by a graph problem was asked\xc2\xa0*

design problem asked to me \xe2\x80\x93 <https://www.geeksforgeeks.org/minimum-number-swaps-required-sort-array/>\xc2\xa0

then I was asked \xe2\x80\x93 Number of connected components in an undirected graph\xc2\xa0

design problem asked that was asked to my friend \xe2\x80\x93 <https://www.geeksforgeeks.org/implement-a-dictionary-using-trie/> further asked to modify the code to also support <https://www.geeksforgeeks.org/auto-complete-feature-using-trie/>\xc2\xa0

Round 3:\xc2\xa0

*This round was **project discussion** round and then question-related to core CS concepts were asked.\xc2\xa0\xc2\xa0*

The interviewer asked why did I choose to build the project and the difficulties that arose while building the project and how I overcame that. also, questions like why did I choose a certain\language or framework was asked.\xa0

Then question on OS \xe2\x80\x93 deadlock conditions and avoidance and some questions on DBMS were asked.\xa0

Round 4 :\xa0

*This was **bar raiser** round and the interview was being conducted by an engineering manager or someone at a higher position.\xa0*

question asked \xe2\x80\x93 <https://leetcode.com/problems/odd-even-linked-list/>\xa0

question asked that was asked to my friend

\xe2\x80\x93 <https://leetcode.com/problems/find-median-from-data-stream/>. Also, the whole approach was also asked and was asked to explain why does the algorithm work.\xa0

The overall interview process was very smooth but giving an interview online requires some preparation. The questions asked in Amazon interview are standard classical problems so make sure to practise enough problems. I would recommend first solving around 150 problems on LeetCode and then depending upon the company you are interviewing for practising problems focused on those companies\xca0

All the best.

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Amazon Interview Experience | AmazeWow 2020

- Difficulty Level :\n[Medium](#)
- Last Updated :\n04 Mar, 2022

Round 1: Online Assessment

The AmazeWow assessment was of 30 questions including 2 coding questions.

1. <https://www.geeksforgeeks.org/counting-inversions>
2. <https://www.geeksforgeeks.org/number-of-ways-to-get-a-given-sum-with-n-number-of-m-faced-dices/>

Other 28 MCQs were based on technical portion including OOPCs, DSA etc.

Round 2: Virtual Interview (Round-1)

The interviewer started with few subjective questions based on DBMS, OS and OOPCs.

Then for data structures he asked type of traversals in trees which later on turned into the\xc2\xa0 first coding question itself, after that he asked is there anyway to reconstruct the tree using these traversals. He then asked is there any exception to reconstruct tree using only one type of traversal. The answer was BST which was my coding question as- Construct the binary search tree using given preorder traversal.

<https://www.geeksforgeeks.org/construct-a-special-tree-from-given-preorder-traversal/>

Note: You have to ask about input method and other important details from the interviewer yourself.

The first approach I told was $O(n\log n)$ which he asked to optimize then after few minutes of *thinking out loud*\xc2\xa0 and with a small hint I got the $O(n)$ solution and after coding it, tried to dry run it and the question was done.

Then he moved to some basic paradigms of OOPCs , following with the difference between run time polymorphism and compile time polymorphism.

Here is the link <https://www.geeksforgeeks.org/polymorphism-in-c/> to the answer.

He asked the next question which was\xc2\xa0<https://www.geeksforgeeks.org/find-k-closest-elements-given-value/> with first $O(n)$ then the optimised one with $O(\log n + k)$.

And with this round-1 ended.

\xc2\xa0

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Amazon Interview Experience \xe2\x80\x93 Application Engineer

- Last Updated :\n08 Jun, 2020

Round 1 : Scripting and troubleshooting

Scripting :-

1. Return the count of word present in a file
2. How will you kill one/multiple process in cmd
3. Return PID of a process
4. How will you Change file permissions
5. Return number of empty lines in a file
6. Return 1st word of every line in a file

Simple questions like these and basic linux commands to get current running process.

Troubleshooting :-

- How will you handle sudden increase in request count in the system
- How will you optimize and reconstruct your DB tables so that we can decrease search time (DB concepts)

\xc2\x0

Basic Scripting and linux cmd, \xe2\x80\x9ccgrep\xe2\x80\x9d, \xe2\x80\x9csed\xe2\x80\x9d are some important cmd to brush up.\xc2\x0

Issue analysis and finding root cause is important in troubleshooting\xc2\x0

Round 2: Programming

Array questions

1. Find maximum sum in an array, provided \xe2\x80\x93 you cannot add the neighbour elements
2. Find maximum sum strictly increasing subarray .\xc2\x0[Check here](#)

\xc2\x0

Time complexity, space complexity, handling edge cases like considering negative numbers, explain with proper example so that interviewer can get your point of view. Don\xe2\x80\x99t start to write the code at the first shot, ask questions and get a clear view about the question then start coding.

Round 3: Programming and Scripting

Again Array question similar to the previous round with slight modifications in constraints.

Write script to download a zip file from a website. Copy those to remote machine and extract that zip file in remote machine, Check file permissions. Return count number of html and css files in that directory.

SQL queries:-

1. Display the count of people staying a city.
2. Display the count of unique cities.
3. Display the count of people more than 19 age for every city.

Basic questions about previous experiences and projects.

Brush up basic DB queries, array and strings concepts, Scripting and your leadership skills if you have experience.

Round 4: Hiring Manager

Prepare yourself for Behavioral Questions and STAR interview questions.\xc2\x9cFind the questions here.

:

<https://www.indeed.com/career-advice/interviewing/how-to-use-the-star-interview-response-technique>

Speak confidently and take it slow & steady. Explain your project and everything clearly so that they will find easy to understand your contribution and efforts.

\xc2\x9c

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Amazon Interview Experience | SDE (1.5 Year Experienced)

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 26 May, 2020

Round 1 \xe2\x80\x93 Online Coding Round on Amcat Platform:

1) Top N competitors similar to this

<https://leetcode.com/discuss/interview-question/460127/>

2) A very similar question to this, the same concept of BFS will apply. Given a 2D grid, each cell is either a zombie 1 or a human 0. Zombies can turn adjacent (up/down/left/right) human beings into zombies every hour. Find out how many hours does it take to infect all humans?

Example: Input: [[0, 1, 1, 0, 1], [0, 1, 0, 1, 0], [0, 0, 0, 0, 1], [0, 1, 0, 0, 0]]

Output: 2

Both top N competitors and the Zombie problems were quite interesting and challenging. Although the zombie problem was twisted in terms of description, the scope of the problem was exactly the same. Instead of Zombies, it was updating the adjacent servers in the least possible number of days. After this, in each round they were expecting the most optimized and productive code as I was 1.5 years experienced.

Round 2 \xe2\x80\x93 Asked for my Work Experience and Projects in beginning and then jumped to questions. This was taken by 2 SDE\xe2\x80\x99s PEN-PAPER-ROUND:

1) Convert BST to Doubly Linked List without deforming tree and without using extra space except used for creating List. So this shouldn\xe2\x80\x99t be done in-place. Time and Space Complexity of my solutions :- O(n) & O(1) respectively.

2) You are given a subarray which has only 0\xe2\x80\x99s and 1\xe2\x80\x99s, Maximise the subarray containing 1\xe2\x80\x99s and in this you can only flip one 0 , tell the index of that 0. Similar to this <https://www.geeksforgeeks.org/find-zeroes-to-be-flipped-so-that-number-of-consecutive-1s-is-maximized/>

Time and Space Complexity of my solutions :- O(n) & O(1) respectively.

Round 3 (It was a Managerial Round) -Discussion on one of my Projects and then jumped straight to questions, it was more of WHITE-BOARD-ROUND:

1) <https://www.geeksforgeeks.org/minimum-swap-required-convert-binary-tree-binary-search-tree/> Firstly asked about my approach and then code.

2) Implement LRU Cache.

Detailed discussion on Idea and then code <https://leetcode.com/problems/lru-cache/> I gave an approach similar to what needed in this. Worst time complexity for get() is O(1) and for put() can go to O(n).

3) Find the next greater element of every element in an array. I gave stack-based approach with time and space complexity of O(n) each traversing array from left to right, he wanted to work with the same approach but optimize it further, so I thought and told him that we can traverse array from right to left, it reduces the number of comparisons <https://www.geeksforgeeks.org/next-greater-element/>

Then we had a long discussion on Leadership Principles.

Round 4 \xe2\x80\x93 This was taken by a SDE , he was very helpful and cool. Firstly he told me about himself and then asked about me and then he jumped to questions. He asked me the difference between Trees and Graphs and then he gave me this question.

1) We have been given a list of pair, which denotes edges of a tree, there can be an edge which leads to the creation of cycle, I have to find a pair, which causes cycle. If there are multiple edges

that form a cycle, then I have to choose last from the list. First I told him, DFS Approach and then I told him Disjoint Set, he was satisfied with the second approach and then I implemented it and wrote a solution for this problem. Time Complexity $O(n^2)$ where n is the length of the list given in input.

2) Find minimum length subarray whose elements sum up to $\geq k$ similar to <https://www.geeksforgeeks.org/minimum-length-subarray-sum-greater-given-value/> First I gave him $O(n^2)$ approach and then $O(n)$ windowing technique and then I wrote code for the second technique.

Round 5(It was taken by a different manager)-As this round started so late, I got tired till then. He was really very cool. He asked about me and how is my experience till now. then he gave me a question and he wanted robust productive code considering each and every test case carefully. This code should never crash or give wrong output.

1) Replace every element in array with next greater element present to its right in an array(greater by position not value)so I told him that it is very similar to question asked to me in round 2, still, he wanted to listen my approach and wanted me to code it.I gave him approach and I coded it , then he found some loopholes in it which can be potential points for crashing and some things which he didn't like in my code , then I coded it again as he wanted. He was happy with my this attempt.First code was working fine, the only error in it is no check for null or empty array and some duplicate code.

Time Complexity $O(n)$, Space Complexity $O(n)$

Then again discussion on projects and leadership aspects. The process ended after this.

Verdict: Selected

Thanks, GeeksforGeeks. It helped me a lot in preparation.

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Amazon Scotland Interview Experience

- Last Updated : \n21 May, 2020

Amazon Scotland was hiring for the position of SDE-2. I just happened to get knowledge of their opportunities from a friend. I had applied, but did not really think about getting shortlisted. However, my resume got shortlisted and I received an email to choose a date for telephonic interview. I had given the 1st round interview, and could not clear it. I would however like to share my interview experience.\xc2\xab0

Question 1: Approximately how many lines of code have you written till now?\xc2\xab0

I answered this question in a very subjective and calculative manner. I counted the number of courses and approximately the number of projects I had done till the time. Then I fixed an average code size for each project. And gave him an approximate answer. He seemed to be satisfied with the approach.\xc2\xab0

Question 2: Given a file with large number of sentences, choose a sentence randomly where all sentences have equal probability.\xc2\xab0

I could not really solve this question. I gave him few approaches like counting number of sentences and then choosing a random between and then choosing a line. However, I later realized I could have normalized the sentence length by subtracting mean length and dividing by standard variance. But I am not sure if this approach would have satisfied the interviewer.\xc2\xab0

These were the only technical questions asked.\xc2\xab0

Below are a few behavioral questions I was asked.\xc2\xab0

Question 1: What was the biggest problem you faced till now while developing a project and how did you resolve it?\xc2\xab0

Question 2: What would you do if you feel biased towards a team member during an ongoing project?\xc2\xab0

And with this the interview was completed.

\xc2\xab0

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Amazon Interview Experience | SDE-1 | WOW 2020

- Difficulty Level :\n[Medium](#)
- Last Updated :\n04 Mar, 2022

Online exam:

The online test consisted of 28 MCQs and 2 coding questions, which were of medium level difficulty.

It was followed by 4 technical face-to-face interviews.

Round 1:

Discussed about my projects.

1. Find the node violating binary search tree properties

<https://www.geeksforgeeks.org/a-program-to-check-if-a-binary-tree-is-bst-or-not/>

similar to above post.

2. Print leaf nodes of n-ary tree from left to right

Round 2:

Discussed about challenges faced while doing projects. He asked about achievements I was proud of and a technology or a subject that I have learnt on my own.

1. <https://www.geeksforgeeks.org/find-number-of-islands/>

Round 3:

Asked to explain any one of the projects mentioned in my resume in detail.

1. \xc2\x0<https://www.geeksforgeeks.org/zigzag-tree-traversal/>

2. A person participates in a race, where he has to step on rocks having numbers on them. If he steps on a rock, the number on rock will be added to his score. If he is level L and on \xe2\x80\x98n\xe2\x80\x99th rock then he can jump only to \xe2\x80\x98n+L\xe2\x80\x99th rock. Given that he can choose his start and end points, find the maximum score he can make for a given level \xe2\x80\x98L\xe2\x80\x99.

This is similar to finding maximum sub-array sum.

Round 4:

Discussed about all the projects in brief.

1. <https://www.geeksforgeeks.org/snake-ladder-problem-2/>

2. \xc2\x0<https://www.geeksforgeeks.org/median-of-stream-of-integers-running-integers/>

3. LRU cache

4. ACID properties in DBMS

5. OSI model vs TCP/IP model

6. Discussed about deadlocks

Different approaches were asked for every problem and optimized solution is expected. We were asked to write the code in our preferred language. Interviewers were helpful, we need to think out loud and clarify any doubts about the questions.

Verdict: Selected!

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Amazon Interview Experience | SDE-2

- Difficulty Level :\n[Hard](#)
- Last Updated :\n28 Apr, 2020

I interviewed for Amazon SDE2 position in Bangalore, India on March 2020. I had 3 years of Experience at the time of Interview

Round 1: Online Coding

1. A variation of \xc2\xd0\xc2\xd0[Minimum time to rot all oranges.](#)
2. Evaluating top N Competitors of Amazon echo from reviews received by Crawling websites.

Round 2: DS & Algo

1. The [square root of a number](#)\xc2\xd0
2. [Bottom view of a BT](#)
3. Some situational questions like a situation where you came up with a quick solution to save time.

Round 3: DS & Algo

1. [Design a Data Structure that supports Insertion, Deletion, search and getRandom in constant time.](#)
2. [Print nodes at k distance from root](#)
3. Some situational questions like a situation where you were helped out a colleague, etc

Round 4: Design Round (SDE 2)

1. Design an IP Blocking system. Asked for multiple approaches along with their pros and cons
2. Design a Logger.
3. Why Amazon?

Round 5: Hiring Manager Round (SDM)

This round mainly focuses on presenting situations that test the candidate\xe2\x80\x99s compatibility with Amazon. Strong Leadership and Ownership principles are the focus. You will be asked a lot of situational questions like

1. Brief Introduction
2. Innovative solutions you came up with in your previous company.
3. Conflict with manager
4. A situation where a colleague helped you out.
5. How did you handle tasks with a strict deadline?
6. How do you go about approaching a new task at hand?
etc.

Round 5: Bar Raiser

1. Brief Introduction
2. Design a Job Scheduler. Drawbacks of the system I designed. How to implement a recurring job? Further optimizations.
3. Situational questions like the biggest technical challenge I faced, A situation where I had to fix someone else\xe2\x80\x99s bug, etc.

The process was very smooth.\xa0 My HR was very supportive. The Amazon interviewers are very friendly and give you hints if you get stuck. Be sure to handle every edge case and come up with multiple approaches wherever feasible.

I got a call 2 days after the Bar Raiser Round confirming my selection.\xa0

GeeksForGeeks has been a great resource in preparing DS and Algorithms and getting an overall idea of the interview process.

\xa0

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Amazon Interview Experience | (Off-Campus 2020 for Programmer Analyst)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n28 Apr, 2020

I had applied to Amazon Hyderabad off campus for Programmer Analyst role. The first round conducted on HackerEarth.

First Round \xe2\x80\x93

I don't remember those questions but there were one easy, medium and last one related to OOPS concept implementation.

All rounds from second to fourth conducted on Amazon Chime

Second round \xe2\x80\x93

1. [infix-to-prefix-conversion-using-two-stacks](#)
2. [nth-node-from-the-end-of-a-linked-list](#)
3. [swap-kth-node-from-beginning-with-kth-node-from-end-in-a-linked-list](#)

Third round \xe2\x80\x93

In this round only 2 problems were asked:-

1. Remove unnecessary brackets from expression
ex: input (a+b)+((c+d)) and output should be (a+b)+(c+d).
2. Find the longest sub string length which is in Alphabetical order.
ex: input \xe2\x80\x9ccfaxy\xe2\x80\x9d and output should be 3(axy).
interviewer was expecting code without any bugs so be careful.

Fourth round \xe2\x80\x93

1. Interviewer asked me about my projects.
2. Behavioral question- tell me any situation where you completed your task under lack of information.
3. Find a missing number in range of 1 to n.
4. Gave me a code snippet and asked me to find error.

For every coding question I was asked time and space complexity too.

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Amazon SDE-1 Interview Experience | Amazon WOW-2020

- Difficulty Level :\n[Hard](#)
- Last Updated :\n04 Mar, 2022

Online Test:

The first round contain easy to medium questions. The online test consists of 28 MCQs in which there were general aptitude questions, OOPS, output, Data structure etc. In addition to this, there were 2 coding questions.

Q1). <https://www.geeksforgeeks.org/counting-inversions>

Q2).Find the position of leftmost and the rightmost set bit, also the number of total set bits.

Tips\xe2\x80\x93 Complexity doesn\xe2\x80\x99t matter in this round, O(n²) solution is acceptable. Also STL works well.

After this there are 4 Technical Online Interviews.

Round 1:

It is a coding round consisting of two coding questions.

Q1). <https://www.geeksforgeeks.org/modify-binary-tree-get-preorder-traversal-using-right-pointers>

Q2). [Find the strings from an array which are not prefix of any other string.](#) (He want the optimised trie solution with full Trie implementation).

Round 2:

It is also a coding round consisting of two coding questions.

Q1). At first he asked me about cache and its types and then full implementation.

<https://www.geeksforgeeks.org/lru-cache-implementation/>

Q2). <https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station>

Round 3:

This round is based on knowledge about subjects and 2 coding questions are asked. At first he asked me about my favourite subject I said Data Structure then he asked me basic questions about the complexity and type, and questions related to Cache(Very Important).

Q1). <https://www.geeksforgeeks.org/a-linked-list-with-next-and-arbit-pointer/>

Q2). \xc2\xad<https://www.geeksforgeeks.org/construct-a-special-tree-from-given-preorder-traversal/>

Round 4:

It was both behavioural and technical round. Amazon focuses more on their Leadership principles. Questions related to that were asked. For Example:-

1. Describe any situation when your judgement/idea had a great impact.
2. Describe any situation when you took initiative.
3. What will you do if you are given a deadline and it\xe2\x80\x99s not possible to complete that project with that deadline.
4. Describe a situation when your teammates did not agree with your idea.

Many more questions were asked. The interviewer want me to give answers specifically related to

software only.

Two coding questions were asked-

Q1).<https://www.geeksforgeeks.org/find-triplets-array-whose-sum-equal-zero/>

Q2).<https://www.geeksforgeeks.org/find-union-and-intersection-of-two-unsorted-arrays/>

Result: SELECTED

IMPORTANT:- Go through Geeksforgeeks in depth also go through the past experiences available. The interviewer wants the most optimised solution possible to every question with full implementation. Don't give up on coding question, the interviewer will help you whenever you are stuck. Also a production ready, clean code is expected on the live coding platform. The whole process took 1 month so be patient.

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Amazon Interview Experience for SDE intern | On Campus (December 2019)

- Difficulty Level :\nMedium
- Last Updated :\n26 Apr, 2020

Position: SDE Intern

Location: Bangalore

Online Assessment:

The test was conducted on mettl platform.

It was divided into two parts:

1. First section consisted of gate level C, DS and algo based MCQ questions.
2. Second section consisted of two coding questions

- First question was based on Kadane\xe2\x80\x99s algorithm
- Second\xc2\xa0 question was a medium level logic based question

Interview: Out of 690 students only 57 were selected for the final interview process.

Round 1:

- Tell me about yourself

- **Trapping Rain Water:**

<https://www.geeksforgeeks.org/trapping-rain-water/>

- **Maximum product:**

<https://www.geeksforgeeks.org/find-maximum-product-of-a-triplet-in-array/>

Round 2:

- Tell me about yourself

- <https://www.geeksforgeeks.org/sorted-linked-list-to-balanced-bst/>

- <https://www.geeksforgeeks.org/design-a-stack-that-supports-getmin-in-o1-time-and-o1-extra-space/>

Note :

Areas to work upon while preparing for coding interviews:

- Understand the question properly asked by the interviewer
- Give various scenarios and the test cases and ask different questions in order to understand the question properly.
- Ask the right questions to clarify your doubts.
- Analyze the problem clearly and write various patterns on the paper
- Try to find brute force solution first.
- Then tell the optimised solution and try to tell the solution logically.
- Also check for the edge cases while thinking about your solution.
- NULL checks, overflows and also check test the boundary conditions
- Practice on pen and paper.

Pro tip:

Keep a smile on your face while giving an interview \xf0\x9f\x99\x82 All the best!!!

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Amazon Interview Experience |x2|x80|x93 SDE 2 (3+ Years)

- Difficulty Level :
[Hard](#)
- Last Updated :
26 Apr, 2020

I was interviewed at Amazon Hyderabad for SDE 2 role.

Round 1 (Online Test, Hackerrank):

1. [Medium] A big problem statement, it was very similar to [Rotten Oranges Problem](#). Instead of orange, there was a file that needs to be transferred across all systems represented in the matrix.
2. [Easy] Problem statement demanding to sort the array of custom objects with a custom comparator based upon the use case of the problem.

|xc2|xa0

Round 2 (F2F, Technical):

1. [Next Greater Permutation](#)
2. I did a project on the internals of Java Reflection and Classloading, the interviewer was interested in the entire architecture and implementation.
3. Leadership Questions, when was the last time you realized the importance of a good leader

|xc2|xa0

Round 3 (F2F, Managerial & HLD):

A use case of B2B business where Amazon would be onboarding multiple companies in its platform. Each company has some characteristics (CompanyInfo Partner) that are used to rate them and we have |xe2|x80|x9cn|xe2|x80|x9d partners that can provide those characteristics via API. Each CompanyInfo partner returns some different sets of fields (though contributing to the same factor). Rating is used to provide additional services to the partner. Design a system where all of such partners and companies onboarding would be seamless. At any time, he should be able to query the system basis any characteristics and filters (revenue, numberOfEmployees, etc). He wanted to understand how do I generify the whole vague problem statement and ask doubts regarding the same with him. We had an exhaustive high-level discussion of microservices that I would be putting up.

There were behavioral questions as well.

|xc2|xa0

Round 4 (F2F, Technical, LLD):

Design a feature in Google search which returns |xe2|x80|x9ck|xe2|x80|x9d most visited websites at any point in time from a log server. A log server provides a trigger whenever a particular website is visited. Low-level implementation is an extension of [K most frequent elements in an array](#). I started off with sorting and moved to Heaps, took me time to get there after struggling. I was asked to write APIs for each operation considering this feature and all design principles that were involved in the design.

Discussion of concepts of MicroServices, Monolithic system, Singleton pattern, Immutability.

\xc2\x0

Round 5 (F2F, Technical):

1. [Word Ladder Problem](#). I was then asked to optimize queries if dictionary is constant. I cached the Graph and ran BFS for each query.
2. Extension on previous problem, he wanted production ready code with suitable methods, method signatures, classes for consumption. He wanted to see if I can write readable, and extendable code.
3. Questions on Amazon leadership principles
 1. When was the last time when you had to compromise a requirement due to lack of time.
 2. Last time you couldn't deliver on time.

A week later a got a call for last round (Bar Raiser).

\xc2\x0

Round 6 (Video Call, Bar Raiser):

This round was completely behavioural round. Inclusive of questions about work that I have done in current organization.

Some of the questions that I remember are:

1. A contribution that you are proud of and made a big impact.
2. A case when you had a conflict with your manager or lead regarding a design.
3. A case when you messed something up and how did you handle it. How did your manager respond to this?
4. Something that you learnt working closely with your manager.
5. Why Amazon?

There were a lot of questions that I can't recall. Amazon has a set of leadership principles that they follow and accordingly try to understand you. Just be yourself and don't lie about your work. Because trust me, you will get caught in deep dive.

Few suggestions for preparations from my side

- Design questions are broad and intentionally left vague, ask relevant questions to understand the problem better. Interviewers would be happy if you put up right questions.
- There is no perfect solution to design problems. The whole point is to understand how good are you in solving real use cases.
- Prepare for leadership and behavioural questions as well. They do make a difference.
- Don't rush into buzz words (as mentioned by Tushar Roy in its [Preparing Design Interviews](#) video). You rush to Consistent Hashing with basic knowledge and interviewer might slit your throat.

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Amazon SDE-1 Interview Experience | WOW-2020

- Difficulty Level :\n[Medium](#)
- Last Updated :\n04 Mar, 2022

Online Test:

The first round contains easy to medium questions. The online test consists of 28 MCQs in which there were general aptitude questions, OOPS, output, Data structure etc. In addition to this, there were 2 coding questions.

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Q2).<https://www.geeksforgeeks.org/find-union-and-intersection-of-two-unsorted-arrays/>

Result: SELECTED

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Amazon Interview Experience for SDE-1

- Difficulty Level : \n[Basic](#)
- Last Updated : \n21 Apr, 2020

Hey guys recently I appeared for an SDE 1 interview in Amazon and wanted to share my experience to help others

Round 1(HackerEarth):

- Q1. You need to find out the longest subsequence of a string from a given string such that the absolute difference between two alternating characters of the subsequence is less than K.
Q2. You are on an infinite graph and starting from (1, 1), you can move either (x+y, y) or (x, x+y) and you need to find out whether you can reach the given point or not.
Q3. Given a set of numbers, you need to find out the number of ways you can divide the set into two groups such that no two groups are left empty.

Round 2:

- Q1. Given two strings containing a special character \xe2\x80\x98#\xe2\x80\x99 which represents a backspace, you need to print true if both the strings will be equal after processing the backspaces.
Example:

AA##BCAS#
B#BCA

Output:

True

(Expected time complexity: O(n))
(Expected space complexity: O(1))

Round 3:

- Q1. Tell me about yourself?
Q2. Implement a stack that can do operations like push, pop, find the mid element and delete the mid element in O(1).
Q3. Given a binary tree and a key, print all the elements in the path from the key to the root.

Round 4:

- Q1. Tell me about yourself?
Q2. Given a directory tree, you need to find out kth largest file. (Expected time complexity n log k)
Q3. Given a staircase and you can take either 2 jumps and or 1 jump at a time you need to find out the number of ways you can reach to n-th stairs.
Follow up: there are some stairs which are broken and you cannot jump ahead from those broken stairs.

Round 5:

- Q1. Tell me about yourself?
Q2. Given a graph and you are starting from point 0, 0. You will be given commands like:
forward 40
right 50

left 30

backward 70

You need to print your location after processing these commands.

(Behavioural questions)

Q3. Tell me a mistake you regret the most in your professional life?

Q4. Have you ever had a conflict with your manager?

Q5. What is your college CGPA?

Q6. What\xe2\x80\x99s your current role in your team?

Round 6:

Q1. Tell me about yourself?

Q2. Why are you looking for a change?

Q3. The interviewer asked me to tell me some other approach for the questions asked in the 2nd round.

Q4. Tell me about the project you are working on in your current company.

Q5. Tell me about the challenges you faced in your projects.

From Round 2-5 I was told to write the code in pen and paper and they expecting a production-level code that means no compilation issue and no syntax errors and all the errors and edge cases handled.

Some tips:

- You must know how to calculate the time and space complexities of the problems.
- In each round you can be asked about the project you recently did/ the project you liked working most/most challenging work etc- so you should be prepared well for at least one project with in-depth details.
- Start with the naive approach for each question asked and then proceed with solutions with better space and time complexities.
- They mostly care about the projects you did and your coding skills whether you cover all the edge cases while writing code, know time and space complexities, have better approaches for solving the same problem and so on.

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Amazon ACMS Interview Experience | On-Campus

- Last Updated : \n21 Apr, 2020

Amazon came to our campus for ACMS in February 2020. The test conducted consisted of 20 Computer Science MCQs from DSA, C and Cpp . I was one of the 20 people selected. The questions asked were:-

1) You are given a string with httpweru.com. You have to insert / after http and before ru in the given string. It was a very easy question.

2) You are asked to find the number of depermutations in the array.

Final verdict-Selected

Those who one question completely out of 2 coding questions and a few mcqs were selected.

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Amazon Interview Experience SDE-1 | Feb 2020 (Exp 1.5 yr)

- Difficulty Level : \n[Easy](#)
- Last Updated : \n13 Apr, 2020

Hey guys !

I am sharing you my interview experience with Amazon for SDE-1 role in Feb 2020.

Round 1:

Well first round was an online assessment test on AMCAT. There were two coding questions need to be completed in 90 Min.

1. Given a 2-D matrix of 0\x80\x99s and 1\x80\x99s, where 1 represents an infected person and 0 represents an uninfected person. After each second an infected person infects his 4 uninfected neighbors(L, R, U, D). Need to calculate time such that all becomes infected.
Approach : Apply BFS
Similar to :\xc2\xd0[Rotten Oranges](#)
2. Given a 2-D matrix of 0\x80\x99s and 1\x80\x99s, where \xc2\xd1 represents a building component and 0 represents an empty area. We need to calculate total number of connected building components.
Approach : Apply DFS
Similar to :\xc2\xd0[Number of Islands](#)

Next three rounds were onsite at Gurgaon location.

Round 2:\xc2\xd0

This round started with brief introduction about me and my work at previous company followed by two coding questions :

1. Given a string say \xe2\x80\x9cABAABCD\xe2\x80\x9d. Calculate minimum number of letters to be removed such that remaining letters can form a palindrome string.
Answer for \xe2\x80\x9cABAABCD\xe2\x80\x9d is : 2
Explanation : Remove C and D, remaining string is : \xe2\x80\x9cABAAB\xe2\x80\x9d which can form a palindrome(BAAAB)
Approach : Simply count the number of odd characters. Since you can keep one character of odd count hence answer will be odd character -1.\xc2\xd0I used HashMap for storing characters and their count.
if(odd_characters==0) return 0;
return odd_characters-1;
2. Given two Linkedlists in sorted increasing order. Merge them in decreasing order. You have to merge in place, you can\x80\x99t create new linkedlist.
Approach : Simply apply merge-sort concept and append characters at front of merged list instead of end.
Merge in increasing order :\xc2\xd0[Merge Two Sorted LinkedList](#)

Round 3:

This round also started with brief introduction about me and my work at previous company followed by two coding questions :

1. Given an sorted array of 0\x80\x99s and 1\x80\x99s in non-decreasing order. Find the sum of array in O(log n)

Approach : Apply Binary Search to find the position of first 1 and return n-position+1.

- Given an array of Integers, find and replace next smaller element of each element in the given array in O(n).

Approach : Use Stack.

Steps :

Insert element starting from rear.

If top of the stack is greater than current element keep removing until smaller element is found or stack becomes empty.

if Stack `\xe2\x80\x93` Empty answer for current element =-1

else answer for current element= stack.peek();

Insert current element to stack and repeat above 3 lines.Further he asked me some OS concepts and some previous work related questions.

Round 4:

This round also started with brief introduction about me and my work at previous company followed by two coding questions. He also asked me about my current project, asked deeply about the approach I used to solve the problems I faced.

- Given a number n which represent total stairs. Find in how many ways you can reach the nth stair with 1 or 2 steps at a time.

Approach : DP

Since to reach 0th, number of ways = 1;

to reach 1st, number of ways = 1 (0->1);

to reach 2nd, number of ways= 2 (0->1->2 | 0->2)

to reach 3rd, number of ways= 3

Hence we can see, to reach nth stair, number of ways= ways to reach (n-1)th +ways to reach (n-2)th.

Link :[\xc2\x80\x93Nth Stair](#)Furthermore he asked me expand this problem with k-steps (k steps at max which can be taken) :

It's simple again just need to add previous k values to get ways to reach at particular stair.

- Given a binary search tree(BST), find top view of given BST.Approach : Maintain both horizontal distance and as well as level for each node.

Create a TreeMap<Integer, Pair> which stores horizontal distance and a pair class object.

(Note : TreeMap is already sorted based on key i.e. horizontal distance)

Apply Inorder traversal as per following :void topView(Node root, int hd, int level)

```
{  
    if(root==null)  
        return;  
    if(map.contains(hd))  
    {  
        if(map.get(hd).level<level)  
            map.put(hd, new Pair(root.data, level));  
    }  
    else  
    {  
        map.add(hd, new Pair(root.data, level));  
    }  
    topView(root.left, hd-1, level+1);  
    topView(root.right, hd+1, level+1);  
}  
Simply print Pair.value for each key in TreeMap.class Pair{  
int value;  
int level;  
Pair(int a, int b)
```

```
{  
value=a;  
level=b;  
}  
}
```

Round 5:

This was final round of an hour which was held on Chime Video Call :

- Asked me hardest thing which I have done in last 1.5 year and my previous work related questions.
- A number is represented by a LinkedList, where each node represent a digit of number. You are given two such number, find sum of two numbers. You need to return head of LinkedList representing sum of two given numbers.

Approach : First I answered reversing both and then adding each digit and forwarding the carry. And finally reversing the final LinkedList.

Second I gave him another approach using Stack.

Finally I gave recursive approach and he asked me to solve using the same.

Link : [Sum Of Two LinkedList](#)

Finally I got a call from HR that I got selected for SDE-1 role.

Kindly keep below points in mind which I've used during my interview :

- Always answer if you know else simply say I don't know Sir/Ma'am.
- For coding questions, start with brute force approach to optimized one.
- While writing code make sure to cover all the edge cases by yourself only. You may dry-run your code before finally saying you're done.
- Should be able to calculate Time and Space complexity.

\xa0

Practice more for all Data Structure and Algorithm concepts on GeeksForGeeks, you will find all the concepts at this place.

Artical submitted by : Ripesh Yadav

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Amazon Interview Experience (SDE-1, 8 month experience, Refferal)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n13 Apr, 2020

Round 1:\xc2\xd0 (1 hour)

Que 1:\xc2\xd0You are given a list of packages and their dependencies as follows.
You need to return one of the order in which the packages should be compiled.

< 1, <2, 3, 10> >, < 7, <>>, < 2, <4, 5> >, < 3, < 5, 6, 7> >, < 8, <>>, <4, < >>, <5, <6> >, < 6, <> >, < 10, <> >

Output Example \xe2\x80\x93 6, 4, 5, 7, 2, 3, 8, 10, 1 \xe2\x80\x93 If we can compile, else return NULL.

Topics: Graph, Topological sort, Cycle in a graph

Que 2:\xc2\xd0There are N Ropes. You need to connect N ropes into single rope into minimum cost.
Cost of connecting 2 ropes is length of connecting 2 ropes.
For 4, 3, 2, 6 length ropes ? Output will be 29.

Example: One of the ways to connect the rope. But you have to tell them the minimum cost.

4+6 = 10 \xe2\x80\x93 [10, 3, 2]

10 + 3 = 13 \xe2\x80\x93 [13, 2]

13+2 = 15 \xe2\x80\x93 [15]

Total Cost = 10 + 13 + 15 = 38.

Topics: Min-Heap, Greedy

Round 2:\xc2\xd0 (1 hour)

Que 1:\xc2\xd0Q: Print a Binary Tree level by level alternating the order each level. (ZIG- ZAG Tree Traversal).

Topics: Tree, Dequeue, Stacks

Que 2:\xc2\xd0Find the rank-k (k-th maximum) in a continuous stream of numbers.

Topics: Heap

> k=1

> 10, 5, 7, 3 => 10

> 10, 5, 7, 3, 12 => 12

> 10, 5, 7, 3, 12, 11, 15, 9 => 15

> k=2

> 10, 5, 7, 3 => 7

> 10, 5, 7, 3, 12 => 10

> 10, 5, 7, 3, 12, 11, 15, 9 => 12

Round 3: (1 hour)

Print top view of a binary tree.

Topics: Tree, queue

Round 4:\xc2\xb0Managerial round (40 minutes)

No coding questions in this round. Questions in this round were related to projects and past experiences only.

Every round was followed by a 10 minute discussion related to what you are doing in the current company and past experiences. And no doubt interviewers were very friendly.

\xc2\xb0\xc2\xb0

\xc2\xb0

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Amazon Interview Experience for SDE-1 | Off-Campus (Exp<1year)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n16 Mar, 2020

Position: SDE1 at Amazon

Location: Bangalore/Hyderabad

Date: 7 March, 2020

Online Assessment

There were two coding questions:

1. One based on standard BFS in a matrix
2. Based on priority queue something similar to k Order statistics

Virtual Onsite Interviews:

Round 1:\xa0

1. There are two types of chocolates Milk chocolate and Dark chocolate and N rows of such chocolates. You are given some number X(milk chocolate) and Y(dark chocolate) that is the number of chocolates you have to complete . You have to find what is the maximum number of rows you can cover? (Sorry, if the description is not clear but in the interview I was given this description only, \xe2\x80\x99 try to clear it with help of some examples).

Note: Order of chocolates is not important.

Example 1: M M D D

D D

D M M

X=3 Y=4

Output: 2

As we can cover either row 1 and row 2 or row 2 and row 3 but not all the rows.

Example 2: D D

M

D M M

X=1 Y=1

Output: 1

As we can cover only row 2.

Example 3: M M D D

D D

D M M

X=5 Y=7

Output: 3

As we can cover all the rows.

2.\xa0<https://www.geeksforgeeks.org/count-subarrays-equal-number-1s-0s/>

Round 2:

1. <https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/>
2. You are given a linked list and a number k. You have to sort the linked list in groups of size k by the sum value of each individual chunk in decreasing order. The elements within a chunk will not

change.

Example:

Linked List: 1->3->0->5->1->7->0->2->4->3

k=2

Output: 1->7->4->3->0->5->1->3->0->2

Explanation:

1->3=4

0->5=5

1->7=8

0->2=2

4->3=7

So, the chunk 1->7 has sum 8 which is the highest so it will be placed first. Then chunk 4->3 with sum 7 after it and so on.

Round 3: With Senior Technical Program Manager

Behavioural LP

Role in current company sort of questions.

Little discussion about projects.

What is caching?

OOPS questions like inheritance, problems faced in inheritance, diamond problem and virtual keyword.

Design LRU cache (only approach was discussed, no need to code).

Coding question: careercup.com/question?id=5717962873896960

Round 4: Senior Manager

Detailed discussion about projects and current role. Lots of behavioural questions based on LP.

What is caching? Types of caching algorithm.

Design LRU cache. Extended it a little bit how you will handle if more than one thread try to insert value in cache at the same time. Also, should know whatever STL containers you are using how they are implemented. I was asked how is list implemented in C++ (doubly linked list or singly linked list not too much depth).

More LP.

\xc2\x80

After a week around I got the call that I am selected :). Thanks GeeksForGeeks!

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Amazon Interview Experience \xe2\x80\x93 Application Engineer 2 (2.3 years experienced)

- Last Updated :n11 Mar, 2020

Round 1: Telephone Interview

1. Initial, Questions were mostly from Technologies mentioned in the Resume.
2. After that they entered into coding part and they shared a online editor which belongs to amazon .
 - > question 1: Given a Set of strings find the number of occurrences of each string .
 - > question 2: Given array of even and odd numbers move even numbers to front and odd number to endthey excepted optimized solution for both questions.
3. Few questions on scripting like they asked what are the linux commands you know and where you have used it .
4. Database query question based on join and some stuffs.

\xc2\x0

Round 2:

After an hour of telephone interview got the call from hr saying short listed for further rounds of face to face interviews .

1. Two people came for interview panel\xc2\x0 . they started with resume and entered the main part\xc2\x0 with simple coding . First question to print the pattern .
 - *\xc2\x0 \xc2\x0*
 - *\xc2\x0 \xc2\x0 \xc2\x0 *\xc2\x0 \xc2\x0 *-> and second question\xc2\x0 was some java output debugging with operator precedence . 2 debugging questions like this.
2. \xc2\x0Another guy started his part with one coding questions given two arrays merge into a single array .
3. Find number of occurrences of a word in a file\xc2\x0 using any one of the scripting language ruby, shell or linux commands
4. they asked me any questions i just asked about how an application engineer work will be there in amazon . they explained about it .

Round 3: After an half hour of waiting this round started with two people

- 1.\xc2\x0 This round is full of scripting and scenario based debugging questions .\xc2\x0 they started with scripting questions
how will you get count of number of errors occurred from a log file .
- 2.\xc2\x0 How will you automate the before question scenario with multiple servers running\xc2\x0 ?\xc2\x0 \xc2\x0have to answer with automation script how to do this
3. Explain about my current project and its architecture .
4. Given a search result it takes millisec to complete and it takes more than a sec on the second day of query . what might have happened and explain what would you do ?\xc2\x0 . they tried to get answer from me itself without giving any clue .\xc2\x0 Answer : due to duplicate contents index might have gone wrong and indexing needs to be improved or fixed .

5. They asked me few behavioral questions and asked me what is your greatest achievement in work so far.

Round 4 :\xc2\xA0 After my Lunch this round started

1. this is more of problem solving

one guy can and just started with a coding question . given an array of strings group the string that are anagram to each other . group non anagram strings separately . started with a brute force solution . he asked to optimize more in tc and sc .

after giving the more optimized solution he asked me to code it .\xc2\xA0 The guy who came to me is more even worse he was seeing syntax errors also in code .

2.\xc2\xA0 Second one was : Given an array and constant k\xc2\xA0, find the maximum number in the window size of k . same like started with a brute force and ended with optimized solution .

3. After these questions he asked me few behavioral questions to analyze my decision making .

Round 5:\xc2\xA0Manager round\xc2\xA0

1. he came with a horrer face . he didnt even see my face looking at his laptop\xc2\xA0 started his first question .\xc2\xA0 Given a Jar of Pills find the jar with defective pills puzzle questions .

2. After that he also asked me my current project explanation and architecture .

3. based on that he asked again a scripting question . group files of particular format and zip and move it to given folder location .

4. then asked me any questions .\xc2\xA0 i asked about application engineer work . he given a detailed explanation of work and asked me to have some coffee . hr will come and inform me like that .

HR came and once we get feedback from every panel will let you know the results . After one week they called me and offered me Application Engineer 2 position \xe2\x80\x99

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Amazon SDE-1 Interview Experience | Women of World 2020

- Difficulty Level :\n[Hard](#)
- Last Updated :\n11 Mar, 2020

\xc2\xd0

Round 1:

Q1) Given the column number in an Excel sheet, find the column name.

<https://www.geeksforgeeks.org/find-excel-column-name-given-number/>

Q2) Given a binary tree find the maximum sum from one leaf node to another.

<https://www.geeksforgeeks.org/find-maximum-path-sum-two-leaves-binary-tree/>

Q3) Modify Facebook\xe2\x80\x99s friend request operation by adding a condition that a person can only send a friend request to someone if they have at least 1 mutual friend.

Here the interviewer asked to use an appropriate DS to store the friend list. I used the adjacency list representation and searched for common values in the two lists.

Round 2:

Q1) Given a binary tree, perform Zig-Zag level order traversal of the tree.

<https://www.geeksforgeeks.org/zigzag-tree-traversal/>

Q2) Given a tree T1 with millions of nodes and a tree T2 with hundreds of nodes check if T2 is a subtree of T1.

Q3) Difference between an interface and an abstract class.

I wrote a Java code to explain different scenarios where each of them can be used.

Q4) Reader Writer conflict in DBMS.

Round 3:

This round started with a project discussion. I explained my project and he asked some questions related to it.

Q1) You purchased a product from Amazon and now wish to return it. There are N pick up agents in your locality, you have to return the K closest ones.

I first solved it by sorting the distances and returning first K values. The interviewer asked me to optimize the solution. I solved it using a max heap.

Q2) Given a dictionary of strings and two strings s1 and s2, check if you can reach from s1 to s2 by selecting words from the dictionary. At each step, you are allowed to change only one letter of s1 at a time.

eg. dictionary = {cat, bat, pat, but, bun, sun, pun, put}

s1=cat, s2=sun

Answer: cat->bat->but->bun->sun

or cat->pat->put->pun->sun

I solved it by making an adjacency list for each string and then DFS to check the reachability of s2 from s1.

Round 4:

This round started with a discussion of all the questions asked in the previous round.

Q1) Find the diameter of a given n-ary tree and return the two end nodes of the diameter.

I first solved it for a binary tree then extended the solution for an n-ary tree.

Q2) What happens when you type www.amazon.com?

A long discussion on DNS, ARP, and TCP/IP stack was done.

Q3) What is a deadlock? What are the conditions for a deadlock to occur?

Q4) Http vsHttps

The interviewers were really motivating and friendly. I had an amazing experience and enjoyed solving problems in all of these rounds. Just maintain a calm mind during your interview; it will help you solve the problems quickly.

Verdict: Selected!

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Amazon Interview Experience SDE-1 | Amazon-WOW 2020

- Difficulty Level :[Medium](#)
- Last Updated :[04 Mar, 2022](#)

4 Technical rounds:

First Technical Round:

- Given two arrays and we need to find whether one array is a subset of other or not

Ex:

array1: 1 6 5

array2: 1 4 7 3 5 6

o/p: yes

- Given a matrix and there will be bombs in the cells, find the number of blasts. A group of connected bombs leads to blast.

- Level order traversal of a tree.

Second Technical Round:

- Find the lexicographically maximum level sum and its level of a tree.

Ex: 1 15 6 6 4 5 6 (i/p format: root left right)

Max Level sum : 21

Level: 1

- Given a sorted array and an element x, find k closest elements to the x in an array

Ex; a : 12 15 18 21 22 43, k = 4, x = 20

o/p :15, 18, 21, 22

Third Technical Round:

- Sort the given linked list.

- Top view of a tree.

- Operating System and Computer Network Basics like about DNS, Deadlocks, Routing, OSI model, Processors etc

Fourth Technical Round:

- Given an array and split the array into two halves such that the absolute difference between them should be minimum.

Ex : 37, 43, 7, 54

$o/p = (37+43) \times 80 \times 93 (54+7) = 19$

2. Given a string find the count of unique palindromic substrings

Ex: aabaaa

o/p: 6 (a, b, aa, aba, aabaaa, aaa)

3. LRU Cache

4. Infix to Postfix conversion

5. Inheritance and its types

6. Difference between linear and non-linear data structures.

Resume and the challenges faced in developing projects and asked about MENTORSHIP in Smart Interviews.

We need to give different approaches for a problem and need to write code for the optimized solution in your preferred language

Thank you so much Amit Bansal Sir and Abhishek Sir (SMART-INTERVIEWS) and GeeksforGeeks from the bottom of my heart. Because of your teaching and guidance, I am enjoying this fruitful result.

Verdict: Selected

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Amazon Alexa Hackathon Experience

- Last Updated :\n05 Mar, 2020

Recently I have attended a 30 hour Hackathon on Amazon Alexa skills.

The main object for organizing a hackathon or attending a hackathon is to get an experience of working on a single project for 30 or 36 or 40 hours depending upon the time given for the Hackathon and building Software products that can tackle real-life issues.

In that Hackathon, the basic or core concept of it was to work on the environment that is used for exploring new voice Interface techniques and problem-solving.

For which we can mainly work or use some of the tracks i.e. VUI, AI, IoT, Machine Learning, Computer Vision and many more.

The Benefits of attending a Hackathon are as follows:-

1. Putting Our Business in Front
2. Emotional Connection with others
3. Awesome Experience
4. Variety of Brand awareness
5. Great ROI

Over All, it was my great experience to attend Hackathon Like this in which many of the well-experienced Speakers were called Upon the stage to share there experience with all of us.

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Amazon Interview Experience | SDE-2

- Difficulty Level : \n[Medium](#)
- Last Updated : \n26 Feb, 2020

Hello Everyone,

I would like to share my experience in interviewing with Amazon for the SDE-2 position. I had 4.5 Years of experience while I was attending this interview.

I got a call from a recruiter in the US and I was told about the Amazon Hiring Event that would be happening in the last week of January 2020 in Hyderabad, India.

Round \xe2\x80\x93 1: (Online Coding)

This was an online round, I was told based on the results of this round I will be asked to come for Onsite interviews.

1. [Number of Islands in a matrix.](#)

2. It was a similar kind of problem as mentioned above but instead of DFS here we had to use BFS, I couldn't remember the question exactly.

After 2 days I got a confirmation that I have cleared the online round and was invited for Onsite Interviews to Hyderabad.

Round \xe2\x80\x93 2: (Data Structures and Algorithms)

This round was taken by a Senior Software Engineer based out of the US.

1. You have been given a grid and a starting point. You are supposed to check if you can visit all the points and return to the starting point.

2. Project-related questions and behavioral questions.

Round \xe2\x80\x93 3: (System Design)

This round was taken by a Senior Manager based out of India.

Amazon system is already in place design or upgrades Amazon's existing system for Amazon's Great Indian sale.

More Focus on Scalability, Availability, Single Point of failure, database, and low Latency.

Some Behavioral and Leadership questions were asked at the end of the interview.

Round \xe2\x80\x93 4: Data Structures and Algorithms

This round was taken by a Senior Manager based out of India.

He asked me if I have worked on Maven applications. I told him yes. So the question was;

In pom.xml we add dependencies to utilize the methods of the package, how does the compiler know which module or package it has to resolve first.

I told him about [Topological Sorting](#) he agreed and asked me to write production-level code for the same.

A lot of Behavioral questions were asked in this round.

Round \xe2\x80\x93 5: (Bar Raiser)

This round was again by a Senior Manager

This round was a combination of Requirements Gathering, Coding, Dynamic Change in requirements and System design.

So the question was to implement the Windows OS file search feature. For example, if I type .xml the system should show all the files of type .xml and also should check recursively in subdirectories.

The new change in the requirement was users can now filter by the size of the file.

I gave him a solution of the N-Ary tree where each node represents a file name, type, and size. To search for a file, we perform BFS of the N-Ary tree until we reach the end. He was satisfied and asked me to code the solution.

Result: Selected for full-time SDE-2 role.

I would like to thank GeeksForGeeks for creating such a useful platform to help aspiring candidates get a job in Multinational companies.

Tips and Suggestions to Candidates:

1. Kindly explain your thought process when you are trying to solve a problem or designing a system. This will help the interviewer know if you are heading in the right direction and might help you in case you are stuck.
2. Please don't try to solve the problem with the most optimal solution in the first go. If you know the naive approach go ahead with that first, this will give the interviewer the impression that you can solve the problem. Once you have the naive approach then try to optimize it by discussing various approaches.
3. Please don't give up after 2 attempts, keep trying different data-structures and algorithms to solve the problem. This will show the interviewer that you have a never-give-up attitude and you have knowledge on other topics as well. If you follow this approach you will ultimately end up in solving the problem with at-least a naive approach.
4. For System Design you can go through website <https://www.educative.io/courses/grokking-the-system-design-interview> - Grokking System Design (Paid course but worth it) and videos from <https://www.youtube.com/channel/UCRPMAqdtSgd0Ipeef7iFsKw> Gaurav Sen System Design
5. Please don't get disappointed if the interview results were not positive. Remember that the company could have various other reasons to reject the candidate irrespective of the interview going well. Learn from your mistakes if you had done it during the interview and take that experience for future interviews.

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Amazon Interview Experience for Internship

- Difficulty Level :\n[Easy](#)
- Last Updated :\n25 Feb, 2020

1st round (Online)

30 MCQs and 2 coding questions

- 1) [Find the contiguous sub-array with maximum sum \(Kadane's Algorithm\)](#)
- 2) [Find mean, median and mode of an array of integers.](#)

2nd round (F2F)

2 coding questions

- 1) [Clone a linked list with an additional random pointer](#)
- 2) [Search in a row wise and column wise sorted matrix](#)

3rd round (F2F)

2 coding questions

- 1) [Print the boundary of a binary tree.](#)

But this wasn't the solution according to him. Leaf nodes that are surrounded by other nodes are not included. Basically print the left view, right view and bottom view of the binary tree.

- 2) [Trapping rainwater problem](#)

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Amazon Interview Experience (Off-Campus for SDE-1)

- Difficulty Level :\n[Hard](#)
- Last Updated :\n25 Feb, 2020

First, there was shortlisting on the basis of cpi and board percentage I guess.

Round 1: Round 1 was coding round consisting of 2 coding questions and 28 MCQs on based on output, data structures and algorithms. The first coding question was to convert infix expression to postfix (<https://www.geeksforgeeks.org/stack-set-2-infix-to-postfix>) and the second was to find the mean, median and mode of the given array. This round was for 1 hour 30 minutes.

After getting shortlisted, a total of 4 face to face interviews were to take place, each being eliminative in nature. The time for each was fixed to 45 minutes each and each of them involved writing the complete code on paper.

Interviews:

Interview 1: Started with my introduction and then 2 coding questions.

Question 1: Given an array, find the number of sub-arrays having even sum.

<https://www.geeksforgeeks.org/find-number-subarrays-even-sum/>

After brute force, I derived the formula and the interviewer was satisfied.

Question 2: Given an array of 0s and 1s, and a number m, you can flip maximum m zeroes, count the maximum length of 1s you can make by flipping at max m zeroes.

I tried it for some time and approached it right. But then, according to the interviewer, I got off-track to which I explained my approach to him and he verified it with a few test cases. My approach was also right and he was convinced.

Then I got shortlisted for the next round.

Interview 2: Started with the interviewer\xe2\x80\x99s introduction and then one question on networking (since my project involved switches) and then 2 coding questions.

Question 1: Given two very large numbers represented as a vector, multiply them.

Coded it right.

Question 2: Print the boundary traversal of a binary tree.

Coded this too.

Interview 3: Started with my project and then coding.

Question 1: Given a dictionary in which the length of all the words are equal, you are allowed to change just one character. Given a starting word and an ending word, what will be the smallest number of steps required to change the starting word to the ending word.

Solved it in first attempt (the interviewer seemed a little surprised at this).

Question 2: Given a pointer to a node in a linked list, delete the given node in O(1).

No code, only the approach.

Final Interview: Again with my project and internship.

Question 1: Given a Linked List and a number k, reverse the Linked List in groups of k.

Coded it.

Question 2: Same as the first question in round 3.

The interviewer asked only the approach and complexity and then one more question.

Question 3: Given a number, find the next greater number that can be formed using the same digits.
Could only reach the approach, time expired, hence could not code.

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Amazon Interview Experience for SDE-1

- Last Updated : \n25 Feb, 2020

1st round (Online)

30 MCQs and 2 Coding questions

- 1) Find the position of the rightmost and leftmost set bit of a number.
- 2) Given an equation of X, for example: $X + 2 = 5$, find X.

2nd round (F2F)

2 Coding questions

- 1) Given an array that represents the height of trees, you have to mandatorily cut down one and only one tree. Find the number of possible ways in which you can cut down a tree, so that all other trees are in an increasing order.
- 2) Rearrange characters in a string such that no two adjacent characters are same (Priority Queue)

3rd round (F2F)

3 questions

- 1) [Find the Rotation Count in Rotated Sorted array](#) ($O(\log(n))$ solution)
- 2) [Check if two trees are Mirror](#)
- 3) [Algorithm to minimize the file merge time](#) (Min Heap)

4th round (F2F)

3 questions

- 1) [Diameter of a Binary Tree](#)
- 2) Difference between Overriding and Overloading
- 3) Compile time and runtime polymorphism

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Amazon Interview Experience | SDE-1 Bangalore

- Difficulty Level : \n[Medium](#)
- Last Updated : \n24 Feb, 2020

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Round 1:\xc2\xd0

They asked to write solutions for 2 different questions mainly

1. [KMP Algorithm](#)
2. [Find mirror of a given node in Binary tree](#)

Round 2:\xc2\xd0

This was a face2face round mainly involving problem solving and data structures.

1. [Minimum insertions to form a palindrome](#)
2. [First Missing positive number in an array](#)

Round 3:

This was again face2face round with 2 coding questions.

1. [Nodes in Top View of Binary Tree](#)
2. [Minimum deletions required to make frequency of each letter unique](#)

I got rejected after this round.

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Amazon ACMS Interview Experience | On-Campus

- Last Updated : \n24 Feb, 2020

Amazon came to our campus in February 2020. There were 2 rounds.

Round 1:

The test conducted consisted of 3 coding questions.

1. Given an input linked list, write a function that returns the Run Length Encoded linked list. For example, if the input is a->a->a->c->b->b then the output should be a->3->c->b->2.
<https://www.geeksforgeeks.org/program-to-implement-run-length-encoding-using-linked-lists/>
2. Given a linked list, replace every element with the least greater element on its right side in the linked list. If there are no greater element on right side, retain the same value. For example 8->58->71->18->31->32->63->92->43->3->91->93->25->80->28 then the output should be 18->63->80->25->32->43->80->93->80->25->93->93->28->80->28.
<https://www.geeksforgeeks.org/replace-every-element-with-the-least-greater-element-on-its-right/>
3. Given a string, reverse every sub-substring formed by consecutive k elements.
<https://www.geeksforgeeks.org/reverse-an-array-in-groups-of-given-size/>

Round 2:

There were 20 MCQs, it consisted of questions based on finding output for a given code snippet.

There were 2 coding questions

1. Count the number of inversions in an array. <https://www.geeksforgeeks.org/counting-inversions/>
2. Minimum number of jumps to reach then end of array. <https://www.geeksforgeeks.org/minimum-number-of-jumps-to-reach-end-of-a-given-array/>

In total 482 students applied and 8 students were selected and I was one of them.

Hope this helps.

All the best

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Amazon Interview Experience for SDE-1

- Last Updated : \n24 Feb, 2020

Round 1: It was an online round on Amcat platform consisting of two questions.

I don't exactly remember the question, but the first question was based on DFS and second on BFS.

Round 2: It was f2f round in amazon hyd building

This round had 2 questions:-

Q1. <https://www.geeksforgeeks.org/find-next-greater-number-set-digits/>

Q2. Data structure with insert(), delete(), getrandom(), delrandom() functions, such that all happens in O(1) time.

Round 3:f2f round

An in-depth discussion of my previous work experience, followed by 2 design questions:-

Q1 design drinks vending machine.

Q2 design LRU cache, with complete code.

Round 4: f2f round

Q1. <https://www.geeksforgeeks.org/level-order-traversal-in-spiral-form/> iterative as well as recursive approach.

Q2. Merge K sorted array.

link:- <https://www.geeksforgeeks.org/merge-k-sorted-arrays-set-2-different-sized-arrays/>

Round 5: f2f round

An in-depth discussion of my previous work experience.

A question similar to :- <https://www.geeksforgeeks.org/find-possible-words-phone-digits/>

it was not exactly the same question but a variation of above.

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Amazon Interview Experience for SDE-1

- Difficulty Level :[Medium](#)
- Last Updated :[21 Jan, 2020](#)

Round 1:

- Find the next greater element in an array:
- Find the next greater of next smaller element in an array
- Longest Palindromic String(Iterative and Recursive)
- Longest Palindromic Subsequence

Round 2:

Find the maximum element for every window of size k.

Write edge cases, write code for the mentioned data structure

Round 3:

Managerial Round:

Tell instances where you demonstrated Learn and Be Curious, Customer Obsession

Round 4:

Bar Raiser Round

Add one to a linked list (Time Complexity: O(n), Space Complexity O(1))

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Amazon(Barcelona) Interview Experience for SDE | Off-Campus Internship

- Difficulty Level :\n[Hard](#)
- Last Updated :\n15 Jan, 2020

Just completed Amazon\xe2\x80\x99s online assessment that was given 5 days in advance to prepare for.

It consists of 3 rounds:

Round 1:\xc2\xb0 Code debugging (20 min). In this round 7 questions were given either in c, c++ or java. The questions were very easy and anyone who is having programming experience can clear it with ease. No Data Structures and algorithm knowledge is required to clear this round. In every question only logical errors were there which you have to see and correct it and then compile/run the code. I got all 7 questions and cleared this round.

Round 2: Coding round(70 mins). In this round, 2 programming questions were one was regarding hashing and the other one was a typical graph question. They asked to code a question in c, c++, python3 or java. In the graph question, they asked me to find total number of bridges from graph. In that question I used bridge finding algorithm but due to less time I was able to complete only one programming question. But, Still I cleared the round. For this to get clear you should have good knowledge of data structures and algorithms. Link for graph question is\xc2\xb0<https://www.geeksforgeeks.org/bridge-in-a-graph/>. But at last, I cleared this round.

Round 3: The interesting part comes in this round. In this round 4 hour online simulation test was there. This test will test you that how you will react when some situation arises while you are working as a SDE at amazon. For example, you have contributed some code in amazon relay website and out of 3 senior engineers, 2 senior engineers are happy and appreciate your code and give some feedback to improve your code, But one senior engineer finds that your code design is wrong or inappropriate for this project. So whether you will convince him with your idea or you will follow your senior advice or you will keep meeting with all three senior engineers and then decide it. Also in this 4 hour online simulation test, some cases were given along with some data and you have to choose whether algorithm 1 is appropriate or algorithm 2 is appropriate for this situation. After this, a 35 min logical ability test was there which just tests your logical ability(multiple choice questions) and not your technical skills. But I failed to clear this round due to some wrong answers given in online simulation test.

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Amazon Interview Experience | Off-Campus for Internship

- Difficulty Level :\nEasy
- Last Updated :\n10 Jan, 2020

Hello everyone. Here is my interview experience at Amazon for an internship.

Duration \xe2\x80\x93 6 months

Rounds \xe2\x80\x93 1 online test + 2 Personal Interviews (F2F)

Round 1:

The first round was comparatively easy. Here I had to give an online test which consists of 20 MCQs in which there were general aptitude questions, OOP, output, etc. In addition to this, there were 2 coding questions:

1. <https://www.geeksforgeeks.org/number-of-ways-to-get-a-given-sum-with-n-number-of-m-faced-dices/>
2. This was a question on String that I don\xe2\x80\x99t remember.

Round 2:

For this and the next round, I was called to Bangalore. This round was of 1hr approx. I was asked 2 coding questions:

1. <https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/>
2. <https://www.geeksforgeeks.org/merge-k-sorted-arrays-set-2-different-sized-arrays/>, there was a slight difference though. If there are k arrays, the last array had n elements but the total size of this array was equal to the sum of sizes of all the other arrays and n. I was not allowed to use any extra space. To solve this question, I had to use a max heap of size k from the end of and the result was inserted at the end of the last array each time.

Round 3:

This round was of 1hr 20 mins. In this round, there were 3 parts, first and last were coding while the second was the theory. The 3 parts in the sequence were:

1. Each node in a tree generally has utmost 1 parent and 2 children, in the given tree each node can have utmost 2 parents and 2 children. Each node had a value associated with it. I had to find the maximum sum that I can get by traversing from the root to the leaf most efficient manner. The values of each node can be negative too. I had to solve this in O(n).\xc2\x9a To solve this I had used Dynamic Programming.
2. Regarding the theory questions, the questions were:
 1. Difference between ipv4 and ipv6 except for the length.
 2. What is memory virtualization?

There were 2 more questions, to be honest, I was not able to answer any of the theory questions that the interviewer asked me. When I was not able to answer the questions, he asked me to tell him about my projects. I explained all the projects I had. He also told me to tell of what all I knew about the Operating System and I explained everything I knew for 15-20 minutes.

3. Given an array of nodes, each node represents a road which connects 2 cities. I need to find

whether there exists a path between the given source and destination city. The roads are can be traversed in both the directions i.e from A to B and from B to A. First I created a hash map of type `<String, ArrayList<String>()>` ((city), (consisting of all the cities that I can reach from that city)) and then I applied BFS on it. Refer to the link to understand the BFS part
<https://www.geeksforgeeks.org/find-if-there-is-a-path-between-two-vertices-in-a-given-graph/>

I was able to answer all the coding questions properly but not the theory questions but luckily I was selected

Important Advice Don't give up on the coding questions, keep trying till you find a solution. If you get stuck on something, the interviewer gives you a hint to help you out. Even if you are not able to answer the theory questions but can solve the coding questions well then you will get selected.

Verdict: Selected

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Amazon Interview Experience

- Difficulty Level : [Medium](#)
- Last Updated : [10 Jan, 2020](#)

Online Test:

- 28 MCQs based on Data Structures & Algorithms, Database Management Systems, Operating Systems, Predicting C and C++ output.
<https://www.geeksforgeeks.org/quiz-corner-gq/>
- 2 coding questions:
 - [Longest common subsequence](#)
 - [Find the minimum height of a tree given its inorder and level order traversal](#)

Note: Test conducted on mettl platform, do atleast 1.5 coding questions for good chance

Pen Paper Round: Given 2 questions, discuss the approach with an assigned mentor and write code on paper handling all test cases. Make sure the presentation is neat, good variable names are used, comments are given to explain what each block of the code does, use least time and space complexity.

The questions were:

- [Count all possible paths from top left to the bottom right of an \(m X n\) matrix\(similar to below link but the matrix was also given which was filled with either 0s or 1s, the path can only be made of 1s\)](#)
- [Find the vertical sum of a binary tree](#)

Technical Round 1:

- Given a linked list, connect the first to last, last to second, second to second last and so forth.

Input: 1 → 2 → 3 → 4 → 5 → 6 → NULL
Output: 1 → 6 → 2 → 5 → 3 → 4 → NULL

Involves finding the [middle of the linked list](#), [reversing second half](#), merging the two linked lists

- [Next greater element in an array](#)

After writing code, just do a dry run, it should handle all corner cases. The interviewer is going to count the number of errors.

Technical Round 2:

The interviewer was very friendly and gave me hints and a lot of time.

- He asked me about my projects(basic level and didn't go deep), the 4th year project even though I didn't mention it in my resume.
- The coding question was to [count the number of turns in a binary tree](#).
 I told him some observations and asked him for some hint, he simplified the question and made the question given a node and the root, find the number of turns in the path. After some time, I was able to come up with an answer. He asked to optimize and I came up with an answer after some more thinking.

Technical Round 3:

- Tell me about yourself
- Given an array, left index and right index, return the sum between the given indices in less than O(n) time. [Segment trees](#)
- Building [heaps](#), [merge sort](#), [insertion sort](#), [count inversions](#) in an array
- Basic Database Management Systems & Operating Systems questions like :
 - [What are ACID properties in a database?](#)
 - How to implement isolation in a database?
 - [What is thrashing?](#)
 - [What is virtual memory?](#)

Tips: I kept solving questions from the following [link](#). Have some good projects, some certifications if possible on a resume, I used a website **zety** for building a resume. Practice typing or writing code instead of reading it. I am deeply indebted to GeeksforGeeks for providing all the necessary resources.

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n09 Jan, 2020

Round 1: Coding round

Online coding round consisting of 3 question (Duration-1hr)

1. Given a space separated string find the first substring whose reverse is present in the string. And string will end with \$ sign.
2. Chocolate distribution problem-There are N people standing in a row with some count ($1 \leq i \leq N$) number of chocolates in their hands. You have to select a range of people and take all their chocolates with the condition that you should be able to distribute those chocolates equally among M boxes. Write a program to determine the maximum number of chocolates that can be placed in a box.
3. Related to DP(not remember).

Round 2: Write on paper

- <https://www.geeksforgeeks.org/convert-an-arbitrary-binary-tree-to-a-tree-that-holds-children-sum-property/>

Round 3: F2F\round

1. <https://www.geeksforgeeks.org/maximum-path-sum-matrix/>
2. <https://www.geeksforgeeks.org/lru-cache-implementation/>

Round 4: F2F round

1. <https://www.geeksforgeeks.org/implement-a-dictionary-using-trie/>
2. <https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/>

Round 5: Hiring manager round (video calling)

1. Basic questions about team and project and problem faced\ncurrent company.
2. Basic question about leadership like have u lead any project in current company.
3. Team conflict question
4. One design pattern question- Design an E-commerce application where user can place order and order will go to cart and then place order after payment. After explaining the question he gives me 15 minutes of time in which first i have to ask all my doubt and then code the solution.
5. Any question for me.

Round 6: Bar raiser round (video calling)

1. Question related to Amazon leadership principle.
2. A lot of question related to project in current company.
3. <https://www.geeksforgeeks.org/merge-two-sorted-arrays-o1-extra-space/>
4. <https://www.geeksforgeeks.org/count-pairs-with-given-sum/> and then said to generalize it for triplet and other also.

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Amazon Interview Experience | On-Campus 2020 for SDE-1

- Difficulty Level : \n[Medium](#)
- Last Updated : \n06 Jan, 2020

Round 1: Coding round

Online coding assessment consists of 2 sections

MCQs: 28 questions with no negative marking

The questions had code snippets based questions, OOP and OS based questions. C basics should be strong.

Coding: 2 coding questions

They have a pool of about 20 questions from which they give 2 random questions.

1) [Dice Throw | DP-30](#)

2) Given a starting and ending time of events and only 1 event can take place at a time, print the maximum number of events that can take place. (Hint: Sort on the basis of start time and take a greedy approach)

Round 2(Face to Face Interview)

- [Print Nodes in Top View of Binary Tree](#)

I started with a level order traversal approach, then he moved on and asked to do the same with a preorder traversal. I had used a map to store the nodes and then print them after the complete traversal but then he asked me to improve the print operation and for that I used an unordered_map and a min index for the complete traversal. Then he asked me for the changes to make it a bottom view.

He went onto ask a few concepts of Operating Systems like Process, Threads, deadlocks and Scheduling.

Round 3(Face to Face Interview)

- [K\x{e2}\x{80}\x{99}th Largest element in BST using constant extra space](#)
He questioned about the approach and tried to dig if I had seen such a question earlier.
- [Largest subset of rectangles such that no rectangle fit in any other rectangle](#)
It was a modified version of the question(Just give the biggest element in the subset).

He then asked me about the strongest point on my resume and discussed deeply on the topic for about 20 mins.

Round 4(Face to Face Interview)

Given an array of R and C, where R represents a rabbit at that location and C represents a carrot at that location and an integer D, a rabbit can eat a maximum of 1 carrot within the range D. Output the maximum number of carrots that could be eaten.

I gave a solution of $O(n+d)$ but he made me improve it to $O(n)$.

Round 5(Face to Face Interview)

- [Number of palindromic paths in a matrix](#)

The interviewer helped out a bit though. Asked a few minor things from the resume. He then relaxed the environment and asked about my hobbies.

In all the interviews they started by asking the approach and at the end we had to finally code up the problem.

Result

Converted.

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Amazon Interview Experience | SDE-1 (Off-Campus)

- Difficulty Level : [Hard](#)
 - Last Updated : 06 Jan, 2020

Amazon Interview Experience for SDE 1 Off campus Drive Hyderabad Location.
2019 passed out.

Round 1:(Online Coding Round)

This is a Hackerearth test, it consist of 20 MCQ majorly form DS, OS, CN and OOPS and few output questions and 2 programming questions.

1. <https://leetcode.com/problems/reverse-string-ii/>
 2. <https://leetcode.com/problems/course-schedule/>

Above round is of 90 min. After some day I received a mail from HR that I was shortlisted for onsite rounds.

Round 2:\xc2\xa0(Face to face interview)

In this round 2 questions were asked which I have to be answered in 70 min and also write code for them on paper.

- First question was to reverse the link list with size of K. <https://www.geeksforgeeks.org/reverse-a-list-in-groups-of-given-size/>
 - Given an array break the array into three sub-array by removing 2 elements of it, in such a way that all three sub-array have same sum. O(n) Time Complexity and O(1) space complexity.

\xc2\xa0

Round 3:(Face to face interview)

In this also 2 questions were asked and also i have to write code for them on paper.

1. Given a string print the largest sub-string containing vowels in even counts. O(n)
|xc2|xa0 |xc2|xa0

2. <https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/>

Round 4:(Face to face interview)

Interviewer start with discussion about my current profile work and also with a short discussion on my project(College Project). Then he asked me to design a algo for how to maintain server-load with load Balancer.(Not able to answer it basically he want to answer something like round robin type algorithm.)[This question was ask on the basis of my current work]

Now he jump to coding questions.

- Given a data made up of BST which is dynamic(i.e nodes keep on adding as the user enter new details) he want me to convert that BST to Complete tree.[Have a healthy discussion on it about 10-15 min i gave him solution with rotations like in AVL and ultimately at end he agreed with a solution consist of in-order which run on the Batch basis.]. Then he told me to code the function which take tree as input and return root by changing it to complete tree.
 - Second he asked for a given a number \xe2\x80\x98n\xe2\x80\x99, print how many valid parenthesis strings containing \xe2\x80\x98(\xe2\x80\x98 or \xe2\x80\x99)\xe2\x80\x99 are possible of that length. I told its an application of Catalan Number then he want me to write a code to generate nth Catalan number without using formula basically he want me to write the Dynamic version of it. [<https://www.geeksforgeeks.org/program-nth-catalan-number/>]

Luckily i was able to write both codes in this round and after all 3 onsite rounds HR told me that i also have 1 more round i.e Bar Raiser round and she will share the detail via mail.

\xc2\xa0

Round 5:(Bar Raiser)[On video call]

This round is with a very Senior person having 15+ years of experience, Interview started with his introduction, and then my introduction. Then he asked me my role in my current team and also want me to explain a situation in which i perform something which is completely different from my current role.[This is basically a Behavioural question so answer such question on the basis of there Leadership Principle.]

Then he jump to coding part.

- Given a number in form of link list we have to add one to that number and update the link list accordingly. eg. 123 is stored like 1->2->3 and adding 1 to 123 it becomes 124 so we have to update the list to 1->2->4. O(n) time and with O(1) extra space without reversing without recursion.
 - Given a playlist of songs we have to shuffle that playlist. [Basically an application of <https://www.geeksforgeeks.org/shuffle-a-given-array-using-fisher-yates-shuffle-algorithm/>]

After 2 weeks i received a call from HR saying that Amazon is releasing an offer of SDE1 for me.

\xc2\x0

SOME TIPS:

1. In all rounds you will be asked to write a production level code so be prepared for that.[But In first two round of face to face if your code is not perfect in one go and interviewer found 1, 2 corner cases which may fail in it the you may got a chance to correct it, all depend on the interviewer not sure about 3rd round as in my case i was able to write perfectt code in one go]
2. In any round if you stuck, discuss it with interviewer as they definitely help you on that.
3. But in the last round i.e with BAR Raiser make sure to write complete code and moreover your code should be production ready i.e if he/she will able to find any case which fail in your code then there will be chance of rejection as he/she only read your code and said ok thats it for the day any questions for me and finished your interview, so make sure to write a perfect code before submitting to him.\xc2\x0 \xc2\x0 \xc2\x0 [As one of my friend got rejected in Bar Raiser as he was not able to complete code]

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Amazon Interview Experience | 6-months SDE Internship (2020)

- Difficulty Level :\nBasic
- Last Updated :\n27 Apr, 2020

On 14th December 2019, I appeared for an interview at B.M.S. College of Engineering for a 6-month Software Development Engineering Internship Role. I had applied through the amazon career site and got shortlisted for online assessment in the mettl platform.

Online Round: In this round they\xe2\x80\x99ve asked 2 coding questions and 28 MCQs of computer science fundamentals like DS, Algo, and C++ basics. They usually call for an interview if you complete both coding questions.

On Site Interview:: It was the second round, in this round recruiter had given the 2 coding questions for 40 minutes which are mostly of DS and Algo. In each coding question, first of all, you have to discuss your approach then optimize the solution then they\xe2\x80\x99ll tell you to implement the solution in language and make sure you write the production-ready code and be interactive with a recruiter they\xe2\x80\x99re very cool and guide you if you stuck somewhere. Unfortunately, I got rejected because I could not optimize the solution.

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Amazon Interview Experience | 6-Months Intern for SDE

- Difficulty Level : \n[Medium](#)
- Last Updated : \n30 Dec, 2019

The process consisted of an online round and a maximum of two face-to-face technical rounds. I applied through amazon.jobs so it was an off-campus drive for me.

Online Round :\xc2\xab0

This round had 30 questions (28 MCQs + 2 Coding questions) in total and 90 minutes to complete the test. The test is monitored through webcam and microphone. The MCQs were mainly asked on C and data structures. Coding questions were fairly simple. If you're good at problem solving you will get through.

Face to Face Interview:

Round 1:

The interviewer started with normal question about what my favorite subjects are. Moving onto Data Structures he asked which is my favorite data structure. I answered Trees (It is totally up to you what your favorite is).

Then he asked a question based on Trees (obviously!)

[Given a binary tree, print the top view of the tree.](#) I told him the approach and then he asked me to find some corner cases. Unable to do so he drew one on the paper and there my logic failed. Then after some thinking I optimized my approach and he seemed to be satisfied with the answer.

On to the question, he asked me to [print the nth node from the last of the given linked list.](#) I explained him the approach and he then told me to write the code on the paper. He reviewed the code and found some mistakes and I corrected them at once. I did it in two traversals, he asked for a approach with one traversal. He even provided me a hint of using two pointers instead of one. I was getting some trouble but was close to the solution.

He then asked me to write my name on the paper and told me to go.

After 5 minutes, I was told that I cleared round 1.

Round 2:

The interviewer was very friendly. He asked me to introduce myself. After that he jumped to the technical questions.

1. Given a set of strings and an input string. A string is valid only if it can be broken into non-overlapping sub-strings such that each of those sub-strings are available in the set. The question was somewhat similar to [this](#). Since I am weak in strings I was not getting any good solution. I told him my approach and he told me take time and think about it. Watching me struggling with the solution, he started to ask me about my projects. I was not able to find a good solution. He then moved onto the next question.
2. [Given a binary tree and two nodes, Node 1 and Node 2. Print the path from Node 1 to Node 2.](#) I told him that we can find the [lowest common ancestor \(LCA\)](#) of both nodes and store path from LCA to Node 1 in a stack and print the stack and path from LCA to Node 2 in the stack (except for LCA this time because it's already been printed) and print the stack. He said

it\xe2\x80\x99s a good approach and asked me to write the code. I was unable to write the code properly. He asked me questions on LCA.

In the end he asked me if I have any questions. I asked what kind of projects do interns get to work on at amazon. He replied it varies on department and location.

It was a nice interview experience. GeeksForGeeks is a good place to brush up your skills on Data Structures and problem solving.

I was not selected for the role but working hard for future.

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Amazon Interview Experience | 6-months Internship (Off-Campus)

- Difficulty Level : \nEasy
- Last Updated : \n03 Nov, 2021

I applied for the 6 months internship through referral at the end of November. I thought if you apply through a referral it takes only 1-2 days to get back from HR but after 2-3 days, when no one contacted me I thought I am not going to hear back from them. But after two weeks, I got the mail about the online coding round.\xc2\x0

Round 1: Online Coding Round\xc2\x0

There were 2 coding questions and 28 MCQ.\xc2\x0
\xc2\x0

1. Infix to Postfix conversion
2. Very easy string manipulation problem\xc2\x0
\xc2\x0

I was able to solve both of them.\xc2\x0

After two days, they told me about the onsite interview and that I had to go to the Amazon Bangalore office.\xc2\x0

On the day of the interview, I went to the office. There were about 70-80 other students.\xc2\x0

Round 2: Technical Interview\xc2\x0

This was 60 minutes round and 2 coding questions were asked. I solved one completely and one partially. My interviewer was cool and friendly. Although he was not smiling a lot, he made me feel like we are having a discussion about the question. He started with the usual About you question and then directly jumped to the coding questions.\xc2\x0

Q1. You are on the ground stair and you have to reach \xe2\x80\x98Nth\xe2\x80\x99 stair. At any stair, you can take at most \xe2\x80\x98K\xe2\x80\x99 steps. Find the total number of ways you can reach the Nth stair.\xc2\x0*int countWays(int N, int K)*\xc2\x0

He explained to me the question, then explained it through a sample test case. And then asked me to first explain the approach and if he is satisfied with the approach, then only I can code. He told me that he will also note things down on his laptop.\xc2\x0

Firstly, I gave him the recursive brute force solution(Because that\xe2\x80\x98s what CTCI says). Then he asked me to optimize it. Then I gave him the DP-approach with time complexity O(N*K) and space complexity O(N). Then he asked me to further optimize it. I used another variable to store the sum of last K stairs and increase its value for ith stair and decrease for (i-k)th stair. Now my time complexity was O(N) and space complexity was O(N). I thought that now I can code, but he again asked me to optimize the space. Then I gave him O(K) space queue solution. Now he was satisfied with the approach and asked me to code it. Again he explained to me what he is expecting while writing the code. (Readable, modular, indented, meaningful variable name).Then I wrote the code, he checked it and was satisfied.\xc2\x0

Q2.\xc2\x0Smallest string with swaps \xe2\x80\x93 [http://https://leetcode.com/problems/smallest-string-with-swaps/](https://leetcode.com/problems/smallest-string-with-swaps/)\xc2\x0

It was difficult for me to come up with the brute force solution and I told him. Then he gave me some hints, and with his help, I came up with a brute force solution. After that, we had some discussion that whether the brute force solution will always give the correct solution. After that, he asked me to optimize it, which I was trying but he told me that time is up and if I have any questions. I just asked him about the role of the intern and which team is hiring the intern.\xc2\x0

After 15 minutes, they told me that I am moving the next round.\xc2\xa0

Round 3: Technical Interview\xc2\xa0

It was also 60 minutes round and 3 coding questions were asked. First, he asked me to give a brief introduction. Then he asked me about my internship and my projects. Then he told me what he is expecting from me in this round. He told me that he will ask 2-3 questions, depending on the time, and I need to explain to him the logic first, and then code. Also, follow good coding practices. He told me that he will I cannot overwrite writing the code, and that he will write the exact code on his machine(not sure if he really did that, but he was typing something on his laptop).\xc2\xa0

Q1. Trapping rainwater problem\xc2\xa0

Firstly, gave him the brute force solution $O(N^2)$. He told me to optimize it. Then gave him the leftMax and rightMax array approach. He said I can code now. While writing the code, I made sure to keep it clean, made it as modular as I can, use the descriptive variable name. He looked at my code, asked me a few questions, and then moved to the second question.\xc2\xa0

Q2.\xc2\xa0<https://www.geeksforgeeks.org/dynamic-programming-building-bridges/>\xc2\xa0Since I\xe2\x80\x99ve already done this question, I told him that I just need to find the LIS in the array. He told me how I would do that. I gave him $O(N^2)$ approach. He said it is okay and asked me to code.\xc2\xa0

Q3. It was an easy question. He asked me there is a land, and there is a lake inside. I need to find the size of the lake. I told him that I can use 1 for land, 0 for water, and then apply DFS when I encounter any 0. Then he asked questions on DFS and how I will do that. I explained to him my approach and then he asked me to write the pseudo-code for it.\xc2\xa0

Then he asked if I have any questions. I asked him some questions.\xc2\xa0

Then after about 20 min, HR called him and congratulated me.\xc2\xa0

Advice for interview\xc2\xa0

\xc2\xa0

1. No matter how much time is left, make sure your code follows good practices. I remember a time when I thought I will write code super fast and then explain to him the code, but it doesn\xe2\x80\x99t work like that. They will keep the paper where you wrote the code, and then later review it in case they have any doubt on you. So make sure, what you write is clearly understandable. Your code, your logic, your diagram, your test cases.
2. Make sure you are having discussions and not an interview. Make sure to explain your approach and your answers to his/her questions in a way that makes it look like a discussion. How? Explain things like you know things, don\xe2\x80\x99t just guess, explain why you are thinking recursive solution.
3. Always look up on the internet the answers to your questions. The next interviewer might ask you.

\xc2\xa0

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Amazon Interview Experience | SDE Intern (Off Campus)

- Last Updated : \n24 Dec, 2019

Round 1: It was an online test at Mettl. It consisted of 28 MCQs based on Data structures and algorithms and some output based questions and 2 Coding Questions. Difficulty level for this was Medium.

Coding questions asked were:

1. Euler's Totient Function
<https://www.geeksforgeeks.org/eulers-totient-function/>
2. Count Inversions in an Array
<https://www.geeksforgeeks.org/counting-inversions/>

I was able to clear this round and received interview call 2 weeks later but couldn't attend it because of some reason then I was again called for an interview a week later.

Round 2: This was a F2F Technical Interview or I'd say more of a problem solving round. Interviewer seemed friendly. She started off by asking about myself, then after giving her introduction and straight away jumped to DS and Algo.

I was asked 2 questions \xe2\x80\x93

1. Stock Buy Sell to Maximize Profit
<https://www.geeksforgeeks.org/stock-buy-sell/>
2. Given a string and a pattern. Find the count of occurrences of pattern as sub sequence in the string(Non \xe2\x80\x93 overlapping).

I was able to solve both the questions. In the end she asked me if I have any questions for her and then told me to wait outside. HR told me that I have a Round 2 and was called for round 2 in about half an hour.

Round 3: This was again a F2F Technical Interview / problem solving round. He straight away jumped to DS and Algo.

I was asked 2 questions \xe2\x80\x93

1. Connect n ropes with minimum cost
<https://www.geeksforgeeks.org/connect-n-ropes-minimum-cost/>
I wasn't directly told to implement this problem but had to figure out from the problem statement that this is the underlying problem.
2. Return the number of steps to reach from a node to another in a directed unweighted graph.
I did it using Level Order Traversal.

I was able to solve both the questions. In the end he asked me if I have any questions for her and then told me to wait outside.

\xc2\x90

The thing with these technical interviews is to know the candidates' thought process behind approaching a problem. They give you a lot of hints if you get stuck somewhere, they ask you to optimize the approach if they know this can be optimized further. After discussing the approach you are asked to write production-ready code on paper.

After 10 minute or so HR told me that \xe2\x80\x99m hired \xf0\x9f\x99\x82

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Amazon Interview Experience | SDE Intern

- Difficulty Level : \n[Medium](#)
- Last Updated : \n17 Dec, 2019

Internship \xe2\x80\x93 6 Months Off Campus December 2019

Round 1:

It was an online test at Mettl. It consisted of 28 MCQs based on Data structures and algorithms and some output based questions. Difficulty:- Medium to High

It also had two programming questions:-

1. Dice Throw Problem
<https://www.geeksforgeeks.org/dice-throw-dp-30/>
2. Given an unsigned 32 bit integer, find\ xc2\x a0 a) leftmost signed bit b) rightmost signed bit c) the total number of signed bits. We have two return a character array containing a#\#b#\#c

I was able to solve both questions. After about 7 days, I received a message that I had cleared the test and was called for an interview a week later.

Round 2:

It was a Face to Face round. The interviewer was friendly. Started off by asking technical introduction, whether I have done any internships or not. Then he jumped right into DS and algorithms.

I was asked two questions in this round and was asked to write code for the same.

1. Iterative PostOrder Traversal Of a Binary Tree.\ xc2\x a0 (The interviewer specifically asked me to use only one stack)
<https://www.geeksforgeeks.org/iterative-postorder-traversal-using-stack/>
2. Printing the maximum length increasing subsequence(length and subsequence both)
He expected the optimized form but I could only write code for\ xc2\x a0 O(n^2) approach. I just mentioned about Patience sorting algorithm which can solve this problem in O(N log N) time.

After this question, he asked me whether I have any questions for him. After discussing, he asked me to wait for the result. The HR came and told me that I have to wait for the second round. After about 40 minutes, I was called for the second round.

Round 3:

The interviewer didn\x e2\x80\x99t waste any time and jumped right into DS and algorithms. No questions from resume were asked in this round.

I was asked the following questions:-

1. \ xc2\x a0Given an array of n elements, it should satisfy the following property **a < b > c < d > e < f > g\ xc2\x a0**

I observed that elements at even indices must be lesser than their neighbors while elements at odd indices must be greater. I told him a naive approach of O(N log N)

We could put elements in a maxHeap and then first one by one pop and fill the odd indices first and then the even indices. He wasn\x e2\x80\x99t satisfied with the complexity.

He wanted O(n) time complexity solution. After thinking for about 5 minutes, I asked him for a

hint. (He said bubble sort). I was also thinking about swapping adjacent elements and got the green signal once I heard this from him.\xc2\x97 I told him that if the current element doesn't satisfy the rules, we swap it with the next element. I wrote the code for it and he went through some examples. He was satisfied and moved to the next question.

2. \xc2\x97 He asked me to implement an **LRU** cache (Indirectly)
<https://www.geeksforgeeks.org/lru-cache-implementation/>

He asked me to implement the mechanism for obtaining three recently played videos for a user such that if a user plays a new video and that is not in the recently played list, the earliest one is removed from this list and this became the latest one. I at once told him that this seems like an LRU cache. He asked me which data structure I would use to solve this problem.

I told him an unordered map with a doubly-linked list. He asked what the map and list would store. After discussing the approach, \xc2\x97 he asked me to write the code for the insert function.

After I wrote the code, he asked since you have specifically used doubly-linked lists write delete function for a doubly-linked list, given a node pointer.

3. Given a pointer to a Doubly Linked List Node, delete the node.

<https://www.geeksforgeeks.org/delete-a-node-in-a-doubly-linked-list/>

I wrote the code and he asked me to run through some edge cases. The code was correct so he quickly moved on to the next question.

4. \xc2\x97 Design a custom data structure that supports insert, search, delete and getRandom operation in O(1) time.

<https://www.geeksforgeeks.org/design-a-data-structure-that-supports-insert-delete-search-and-getrandom-in-constant-time/>

I took some time to think of the approach and gave the approach to him. He even helped me when I got stuck. I told him that an unordered map and a variable-sized array would be good. He asked me to write the code for the delete function.\xc2\x97 I wrote the code and he asked me if I am making any mistake. I looked again and found a mistake. I corrected it and then he was satisfied.

5. \xc2\x97 Given a matrix of 0 and X, where 0 represents water and X represents land, find the maximum size of the continuous island. I told him that I would do this by using BFS.

He asked me what I will store in the queue and how I will maintain the size of the island. I didn't have to write the code for this. He was satisfied just after listening to the approach. After this, he asked me if I had any questions for him. I asked him some questions about work at Amazon. We discussed for about 10-15 minutes and then he said that the interview was over. I knew that this was the last round. The HR told me that they would mail me the result and I shook hands with the interviews before leaving. I got the mail that I am selected as an intern just one day after the Interview.

Tip:- Whenever stuck, try discussing the interviewer what you are thinking of and where are you stuck. I got stuck in Question 4 in round 2 in between using a linked list or array. He asked me to focus on the array approach.\xc2\x97 When that fails, don't be shy to ask for a hint. The interviewer will give you a slight hint and you can build upon that.

Verdict: SELECTED!!!

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Amazon Interview Experience for SDE-Intern 2020

- Difficulty Level :\n[Expert](#)
- Last Updated :\n16 Dec, 2019

Hello geeks today I am sharing my Amazon SDE Intern interview 2020.

I applied through link on amazon careers for internship I got link to finish an online test by certain date.

Round 1: Online Test on mettl [90 min]

28 MCQ on c++, data structures,

2 coding questions

Q1. Given a matrix each entry in box is an integer. find row having maximum sum.

Q2. Given a dice having m faces each numbered from $1 \times 10^2 \times 10^6$ to ..m, the dice rolled n times. then find in how many ways a particular target sum T can be generated since ans is large we have to answer using modulo $10^9 + 7$.

Approximately 70+ students are invited for off-campus drive at one of the college in Bengaluru.

Technical Algorithm DS interview Round 1:

Q1. Interviewer was cool tried to make me comfortable he asked me about my online round at that time I only able to recognize only first question of my online round about matrix and tell him my approach [my bad was I not able to recognize second question of dp If I would then perhaps it might impress him more]

Q2. Given a one dimension array find two elements such difference b/w them is minimum.

Q3. Expanded question to two sorted array then to k sorted array

Q4. asked to write code for heapify. little discussion on build heap complexity [got confused and not able to clearly explain him how complexity becomes $O(n)$]

Q5. Asked about bst, lots of discussion on bst.

given a bst make it a balanced binary tree Such that its preorder traversal gives us sorted sequence. No use of extra space, only to use operation to swap any two nodes.

I give him some unpolished approach. He asked am I not comfortable with trees.

finally got selected, for round two approx 20 were selected for round 2.

Technical Round 2 : [Algo Ds] [60 min]

little discussion on my project [5 min]

Q1. asked about dynamically growing sequential list, name them and discussed about various complexity of insert, remove random access in them.

myans. Discussed about ArrayList in java and linkedlist [he asked me for one more but I am not able to answer]

Q2. asked me about dictionary how they are internally implemented.

I discussed about red black trees (bst), and hashtable and complexity of its various operation.

Q3. he asked me to implement a full Hashtable class which should dynamically grow as no of keys increases and handle collisions.

implement methods like get(key) and put(key).

myans. I implement it fully but it takes more than two A4 size pages It takes my lots of time about 40 mins finally he satisfied.

he said we are running out of time so I have to solve next question very quickly.

Q4. Given a string of characters you can erase K consecutive occurring characters [though I misinterpreted it as more than K consecutive occurring characters which leads me to not come up with solution] . then what is minimum length we can get, note operation can applied recursively. ans. first I gave him naive approach, then I further come up with unpolished solution using two pointers from middle. He asked for standard one. Time up !!!!

Result : REJECTED

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Amazon Interview Experience | On-Campus for SDE-I

- Last Updated : \n09 Dec, 2019

Experience from IIT Delhi On-Campus, Dec. 2019

Placement Test:

Two questions from a pool of 15 questions (easy and medium) and 28 MCQ\xe2\x80\x99s based C/C++ skills and pointer arithmetic.

Some of them which I remember are:

1. Mean, Mode & Median of an array.
2. Find the number of inversions in an array.
3. Min. Dice throw DP etc.

Round 1:

The interviewer asked 3 questions:

Q1. Write code to find the path from one node to another in a binary search tree. Did it well.

To proceed to round 2, do one of these:

Q2. Write code to heapify an array. OR Find the minimum number of modifications to sort an array where one modification means to increment or decrement an element by one.

Round 2:

First, the interviewer took a quickfire round from CV.

Then, he asked this question:\xc2\xa0<https://www.geeksforgeeks.org/design-a-data-structure-that-supports-insert-delete-search-and-getrandom-in-constant-time/>

Round 3:

I got asked this problem:\xc2\xa0<https://www.geeksforgeeks.org/k-maximum-sum-combinations-two-arrays/>

But I couldn\xe2\x80\x99t go beyond brute force solution this time and he wasn\xe2\x80\x99t very happy with my efforts.

He saw I was very exhausted and frustrated (it was day 2 slot 2, and I was being interviewed simultaneously by two companies at that time). So, he told me, it was the same story with him and he got rejected by Amazon on-campus but got in 6 months later.

Round 4:

I didn\xe2\x80\x99t get to round 4.

\xc2\xxa0

Hope this helps!

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Amazon Interview Experience | SDE-1 (1-1.5 years experienced)

- Difficulty Level :\n[Hard](#)
- Last Updated :\n09 Dec, 2019

First Try:

Round 1: Written test.

Q1. given a matrix of characters. find minimum steps to reach from \xe2\x80\x98S\xe2\x80\x99 to \xe2\x80\x98D\xe2\x80\x99 where \xe2\x80\x98#\xe2\x80\x99 is an obstacle.

Solution: BFS from \xe2\x80\x98S\xe2\x80\x99 to \xe2\x80\x98D\xe2\x80\x99.

Q2. print a binary tree vertically.\xc2\xa0[link](#)

Round 2: f2f interview.

Q1. given a binary tree print the nodes whose parent and grandparents sum is more than K.

Solution: pass GP and parent in recursion call.

Q2. modified the above question to print the nodes whose N parents sum is more than K.

Solution: recursion with a sum vector to calculate the sum in O(1) for any node.

Round 3: f2f interview.

Q1. given an Array print min and max of each subarray of size K.

Solution: DQ approach.\xc2\xa0[link](#)

he modified the question to find median as well.

Solution: 2 heaps approach [link](#). he insisted on optimizing more by re-using the calculated data while finding min and max but I couldn\xe2\x80\x99t.

Q2. given a Binary Tree and a pointer to one of its Node. at any point of time, this Node starts burning and the fire takes 1 second to reach an adjacent node. Print the nodes which will be burnt on each second separated by a newline.

Solution: find k distance nodes.\xc2\xa0[link](#)

I called such function while increasing the k value each time. he asked to do it in O(N) which I couldn\xe2\x80\x99t.

later I thought I should have created a map of distance and nodes in a single function call.

I was called again next week.

Round 4:\xc2\xa0f2f interview. (this round was taken by mistake as they though It was my first round)

Q1. find the min replacements needed to convert string 1 to string 2.

Solution: DP approach.similar\|xc2\|xa0[link](#)

Q2. the next greater elements.

Solution: Stack approach.\|xc2\|xa0[link](#)

Round 5:\|xc2\|xa0f2f hiring manager.

Q1. design an elevator system.

Solution: I was more focused on writing code than designing interfaces for all components of the lift.

I\|xe2\|x80\|x99ll advise learning the way of answering such questions like class diagrams and then focus on design patterns.

Q2. median of a stream of numbers.

Solution: 2 heap approach.

Result:\|xc2\|xa0Rejected.

\|xc2\|xa0

Second Try:

Round 1: Written test(solve 2/3)

Q1.\|xc2\|xa0find zeroes to be flipped so that number of consecutive 1s is maximized.\|xc2\|xa0\|xc2\|xa0[link](#)

Q2. sort the array when an index x can only be swapped with x+k. if not possible return -1.

Q3. print the numbers having same digits, together. similar\|xc2\|xa0[link](#)

Round 2:\|xc2\|xa0f2f.

Q1. k most frequent strings in a book.

Solution: described Hash-Heap and\|xc2\|xa0[Trie-Heap](#) approach and was asked to code Hash one.

Q2. count number of subarrays having the sum equal to K.\|xc2\|xa0\|xc2\|xa0[link](#)

Round 3: f2f.

Q1. search element in the row-wise, column-wise sorted matrix.\|xc2\|xa0[link](#)

Q2. Maximum path sum in BT.\|xc2\|xa0[link](#)

Round 4: f2f\|xc2\|xa0hiring manager.

Amazon Leadership principles.

Detailed discussion on my current Project.

Round 5: Online\|xc2\|xa0bar-raiser.

Amazon Leadership principles.

any project/task that I am most proud of.

Q: he shared a link\c2\x0to a 30-second youtube video. describing the amazon lockers system. where a delivery guy puts the package in locker. the customers scan the locker and get their package. design the schema and write an efficient algorithm to help find the appropriate locker for the delivery guy.

Solution:

Schema: lockers -> Racks -> Locations.

Algo: having queues for each locker size on every location.

Result:\c2\x0selected.

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Amazon SDE II Interview Experience

- Last Updated : \n02 Dec, 2019

Round 1:

Ques 1: Rearrange a LinkedList \xe2\x80\x93

Before : a->x->b->y->c->z

After : a->b->c->z->y->x

1st intuition \xe2\x80\x93 Maintain two list for a->b->c and x->y->z respectively.

Reverse the second list and join it at the end of the first list.

Interviewer : Reversing of LL is not allowed.

2nd intuition \xe2\x80\x93 Use of Stack, while traversing the second list which is to be reversed, maintain the elements in a stack and then join them.

Interview : Use of stack is not allowed.

3rd intuition \xe2\x80\x93 Manipulate the pointers in one-go!!!

Ques 2: Find Diameter of a Tree

Round 2:

Ques 1: Given an array of numbers and a window size, k. Find the max element in each window while traversing the array.

Ques 2:\xc2\xa0k-Reverse a LinkedList

Leadership Principle Question

Round 3:

Design a Library Management System.

Extended:

Add the concept of Reservations.

Provide the minimum time to wait for a Student before he can be issued a Book.

e.g 3 Books already issued and new student is 37th in queue for the issue.

Leadership Principle Question

Round 4:

Leadership Principle Question

Ques 1: Design a Pluggable Cache, i.e. at any time it may be changed from LRU to MFU or LFU, etc.

LRU \xe2\x80\x93 Least Recently Used

MFU \xe2\x80\x93 Most Frequently Used

Ques 2: Multiple Matrices

Input : [[a, b, c]

[d, e, f]

[x, y, z]]

of Rows and Columns can vary.

Output: adx, ady, adz, bdx, \xe2\x80\x93 adx. cfy, cfz

Result : Rejected

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Amazon Interview Experience | SDE-Intern

- Difficulty Level :\n[Medium](#)
- Last Updated :\n28 Nov, 2019

Status: Fresher, B.Tech CS[2020 Batch]

Round 1: Online Test\nc2\x00[Two sections] [90 minutes]

Section A:

This section was having 2 programming question. Level of difficulty was very easy.

Section B:

This section was having around 30 CS theoretical and some output based question, solely based on Data Structures and Algorithms.

This round was held in my college [JSSATE] and around 15 students were selected from my college.

The interview was held in G.L. Bajaj College and around 120 students were there

Round 2: Technical Interview-1 [80-90 minutes]

They directly dive into asking DS Algo questions.

1. Given a binary tree. Print its Spiral form from top to down. After printing root, print third level in reverse order, then second level in forward manner, then 5th level in reverse order then 4th level in forward order and so on.
2. Given a matrix, each cell has positive or negative numbers. Starting from top left cell, reach bottom-right cell with optimum path such that maximum positive sum is received.

Round 2: Technical Interview-2 [90-120 minutes]

After having intro they just dive into asking DS Algo questions.

1. Given a BST, initially two nodes are swapped. Now correct the BST.
2. Given a array containing continuous numbers starting with 1 in sorted order. One number is missing in this. Find out that number.
3. Make your own data-structure through with insertion, deletion, searching and finding random number can be done in O(1) time complexity. Finding random number Algorithm is given.

After 30 minutes, result is declared. They offered internship for 6 months which would later be converted to Full time SDE1 on the basis of performance.

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Amazon Interview Experience for SDE-2

- Difficulty Level : \n[Medium](#)
- Last Updated : \n25 Nov, 2019

Round 1: DS Algo round

The interviewer asked me about briefly my current experience, but that didn't seem like the goal of the interview round.

Then he started with ds algo questions. Below are the specific questions he asked:

1. Given a string and \xe2\x80\x9cab\xe2\x80\x9d, determine if the string can be generated by \xe2\x80\x9cab\xe2\x80\x9d. If it can form, then return true or else return false. Initial assumption is that the given input string will only contain characters \xe2\x80\x98a\xe2\x80\x99 and \xe2\x80\x98b\xe2\x80\x99.
 - Examples:
 - \xe2\x80\x9caaabb\xe2\x80\x9d \xe2\x80\x93 true
 - \xe2\x80\x9ccaabb\xe2\x80\x9d \xe2\x80\x93 false
 - \xe2\x80\x9cabababab\xe2\x80\x9d \xe2\x80\x93 true
 - \xe2\x80\x9caaaabbbb\xe2\x80\x9d \xe2\x80\x93 false
 - Basically the rule is, for each \xe2\x80\x98a\xe2\x80\x99 in the given string, there should be a corresponding \xe2\x80\x98b\xe2\x80\x99 after that \xe2\x80\x98a\xe2\x80\x99.
 - My solution:
 - Have a counter set to 0
 - traverse through the string, for each character, if it is \xe2\x80\x98a\xe2\x80\x99, increment the counter, if it is \xe2\x80\x98b\xe2\x80\x99, decrement the counter.
 - At any point in array, if the counter is less than 0, then return false.
 - Once the array traversal is over, then if the counter is 0, then return true else return false.
 - He then asked to consider the input array having other characters than \xe2\x80\x98a\xe2\x80\x99 and \xe2\x80\x98b\xe2\x80\x99 as well.
 - Asked to write production level code to solve this problem. But I had to only write the method.
2. Reverse every k element set of singly linked list.
 - Examples:
 - list: 1 2 3 4 5 6 7 8 9, k:3 \xe2\x80\x94 output: 7 8 9 4 5 6 1 2 3
 - list: a b c d e f g h i j k l, k : 4 \xe2\x80\x94 output: i j k l e f g h a b c d

Then one more question: What would you do if you have 5 tasks, and a deadline where you can only perform 3 tasks. What would you do?

Round 2: DS Algo (again)

This round also was about ds and algo, but before going to that, he asked a couple of work related questions like:

- Tell me about yourself
- What is the daily work that you have to do, specific to your role and responsibilities

Then he moved to ds algo questions:

1. Consider the number keypad of old mobiles. number 2 will be associated with a, b, c. number 3

is associated with d, e, f. number 4 is associated with g, h, i\xe2\x80\x9a6. so on and number 9 is associated with w, x, y, z. Now, the input to your method is\xc2\xa0 a number. You have to print all the strings that can be formed by that number considering the association described.

- Examples:

2. Zig zag printing of a binary tree of node type as string, but when you are printing right to left, you need to print string in reverse.

- Example:

\xe2\x80\x9cabc\xe2\x80\x9d

| \xc2\xab0 \xc2\xab0 \xc2\xab0 \xc2\xab0 \xc2\xab0 \xc2\xab0 \xc2\xab0 \xc2\xab0 |

\xe2\x80\x9ccdef\xe2\x80\x9d\xc2\xa0 \xc2\xa0 \xe2\x80\x9cghi\xe2\x80\x9d

||xc2\xa0 xc2\xa0 xc2\xa0 |||xc2\xxa0 xc2\xxa0 xc2\xxa0 xc2\xxa0 xc2\xxa0||xc2\xxa0 xc2\xxa0
xc2\xxa0 xc2\xxa0||

\xe2\x80\x9cjk\xe2\x80\x9d\xc2\xa0 \xe2\x80\x9cilm\xe2\x80\x9d \xe2\x80\x9cnol\xe2\x80\x9d\xc2\xa0
\xe2\x80\x9cpq\xe2\x80\x9d

\xc2\xa0

The output would be:

abc

ihgfed

jklmnopq

\xc2\xa0

Round 3:

I was rejected in the second round. I do not know the reason because I had given right answer to all the questions, and wrote working code on paper as well. Anyways, \xe2\x80\x9ckuch koshishen taiyaari ke liye hoti hain\xe2\x80\x9d right? \xf0\x9f\x99\x82 All the best my fellow geeks!!

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Amazon Interview Experience for SDE2 | 3+ years Experienced

- Difficulty Level :\nExpert
- Last Updated :\n25 Nov, 2019

Location: Hyderabad

Round 1(Project discussion):

Discussion about my best project and some questions on indexes.

Round 2 (Design):

1. Design lift
2. Gave me a sample code in c++(first they ask the language you are comfortable with, mine was c++), and asked me to review it.
3. Discussion on some projects

Round 3 (Design):

1. Design notification system (SMS, email and push) \xe2\x80\x93 HLD
2. questions on message queues
3. max number of 1s in sorted m x n 0, 1 matrix

Round 4 (Design):

1. Design pacman game (showed the youtube video) \xe2\x80\x93 LLD
2. HLD of the same game

Round 5 (DS and Algo):

1. Minimum number of operations to make a string balanced. All characters are in [A-Z] and the string is balanced when the frequency of all the characters in the string is same. The only operation that we can do is replace a character with any other character(and only replacement is allowed)
2. Incoming stream of characters, at every point in the stream, return the first non repeating character

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Amazon Interview Experience for SDE Intern | On-Campus November 2019

- Difficulty Level :\n[Medium](#)
- Last Updated :\n25 Nov, 2019

Amazon visited our campus for hiring in November 2019. The profile was SDE- Intern and was open to all branches.

No. Of Rounds => 3 { 1 online on Mettl + 2 tech F2F interview }

Description of rounds

Round 1 (Online Coding Round)

Conducted on Mettl platform \xc2\x80 \xe2\x80\x93 620 students appeared .We were given 90 minutes to solve 2 coding questions and 28 mcqs.

The mcqs were solely based on data structures and algorithms as well as finding error/output in given c/c++ snippet there was no negative marking.

My coding questions were :

\xc2\x80

- Gcd of an array :\xc2\x80<https://www.geeksforgeeks.org/gcd-two-array-numbers/>
- [Max Sum Contiguous Subarray](#)

The coding questions of round 1 were easy and most of the people solved both their 2 questions correctly but the mcq made the difference in selection. So make sure you attempt the mcq problems carefully.

Round 2 : 127 students shortlisted for F2F interviews

We were called for interviews in groups initially and the situation was like 2 students and 1 interviewer. The purpose of this round was to check the problem solving and coding proficiency of the students. The interviewer told a bit about himself in the beginning followed by the standard question of every interview \xe2\x80\x9c Tell me about yourself ?\xe2\x80\x9d.

There was almost no discussion on my resume or about my projects. Then we moved to the questions of that round. { pen paper round }

The first question given to me was :

\xc2\x80

- Next greater element using the same digits:\xc2\x80<https://www.geeksforgeeks.org/find-next-greater-number-set-digits/>

\xc2\x80

I was asked whether I have seen the problem before and I was honest and told him that sir yes I have solved this problem before. He gave the subsequent problem then.

\xc2\xa0

They first discuss the approach and once they are satisfied with the approach we are expected to write production ready code without any bugs and the code should compile in one go.

\xc2\xa0

Round 3 : F2F interview approx 50 students appeared for this round

This interview also followed a similar approach like the previous interview but this time it was 1 interviewer and 1 candidate. The interview began with a few questions about my coding language and skills. Then we moved straight to pen and paper coding.

I was again asked to write 2 production ready codes and the questions were :

\xc2\xa0

\xc2\xa0

- You are at the beginning of the array, you can either take 1 jump or $\text{arr}[i]$ jumps at each step, you have to return the minimum number of steps to reach the end of the array. {DP}

\xc2\xa0

- Given a string, find its first non-repeating character
<https://www.geeksforgeeks.org/given-a-string-find-its-first-non-repeating-character/>

\xc2\xa0

Again the focus was on production ready code and how well you cover all the corner cases.

This was the last round and offers were released by EOD

\xc2\xa0

Advice and Tips : \xc2\xa0

BE READY FOR EVERYTHING\xc2\xa0

Be confident, bold and honest in your answers. Be yourself.

If you do not know the topic or answer to a question they ask, do not panic, and just tell them that you do not know.

Interviewers do not expect an exact answer to a question, but they see your attitude, approach and improvisation in solving the problem.(yes body language also does matter)

\xc2\x0Think out loud during the interview and try to engage the interviewer in problem solving along with you. Don't rush to writing the code, first discuss the approach with the interviewer and then write the code. You will have ample of time so no need to worry and remember that the interviewer is there to help you only they will provide the required hints, from where you can pick up and reach the solution.

\xc2\x0If you get stuck in between the interview, stop right there take a deep breathe, ask for a new sheet of paper and start again.

Lastly \xe2\x80\xa6\xc2\x0

Do not consider placement as burden, when you have actually prepared thoroughly, you will crack it one day provided company feels you fit into their requirements.

DO NOT LOSE HOPE IF YOU ARE NOT HIRED, it is very much necessary to learn from each interview experience you have and to prepare yourself best for the next. Do not give up at any cost, keep preparing (because there is lots to learn) and be in the race.\xc2\x0

THERE WILL BE A COMPANY WHICH WILL HIRE YOU BECAUSE YOU WILL BE THE BEST TO THEM.

\xc2\x0

All the best <3\xc2\x0\xc2\x0

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Amazon Interview Experience | On-Campus Internship

- Difficulty Level :\n[Easy](#)
- Last Updated :\n21 Nov, 2019

Amazon visited our campus(Sathyabama University) to recruit interns. I\xe2\x80\x99m sharing my internship\xe2\x80\x99s interview experience.

Round 1: The\xc2\xa0round is online test conducted by mettl paltform.

There were 28 mcqs, it covers c, c++, ds and algorithms.(switch case, printf, cout, recursion, trees, heaps, stacks)

2 coding questions

1. Maximum sum subarray

2. Find nth term in A.P

Round 2:

2 coding questions

1. search an element in rotated and sorted array.
2. find the vertical sum in binary tree.

Round 3:

This round was fully coding . Totally he gave me 3 questions in that I have solved 2. Interviewer was very friendly. They will help if you have got struck anywhere. My interview was almost 1 and half hour. He didn\xe2\x80\x99t checked my resume. They are expecting coding from us.

coding questions:

1. check if a binary tree is subtree of another tree

2. Given a String and a banned array. The task is to find the most frequent word in the string which is not present in banned array. (Not case sensitive)

string: If you think you can do it, you can do it

banned[]:{ you, can}

output: do (\xe2\x80\x99cit\xe2\x80\x99 also occurred two times but \xe2\x80\x99cd\xe2\x80\x99 occurred first)

I didn\xe2\x80\x99t solved this question.

Then he asked about joins.

Later he asked me to write use cases for

1. if youtube is not working in your mobile

2. use cases while entering the debit card numbers

And then he asked a coding question

Merge two sorted linked lists

My advice to prepare ds and algorithms. Finally, I got selected for Internship by god's grace.

Role-System Development Engineer.

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Amazon Interview Experience for SDE(1-2 years)

- Last Updated : \n20 Nov, 2019

Round 1:(Written)

- Print boundary of a tree

<https://www.geeksforgeeks.org/boundary-traversal-of-binary-tree/>

- Re arrange positive and negative numbers \xc2\xa0 in odd and even positions .Also maintain the order

Round 2:

- <https://www.geeksforgeeks.org/find-first-non-repeating-character-stream-characters/>
- <https://www.geeksforgeeks.org/minimize-the-sum-calculated-by-repeatedly-removing-any-two-elements-and-inserting-their-sum-to-the-array/>
- <https://www.geeksforgeeks.org/transform-bst-sum-tree/>

\xc2\xxa0

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Amazon Interview Experience (For SDE Intern)

- Difficulty Level : \nHard
 - Last Updated : \n17 Nov, 2019

Amazon visited our campus recently(November 2019) for hiring SDE Interns. It was a three round hiring process.

Round 1 (Online Coding Round) :1xc21xa0

It was an online coding round on mettl platform. We were given 90 minutes to solve 2 coding questions and 28 mcqs.

The mcqs were solely based on data structures and algorithms as well as finding error/output in given c/c++ snippet there was no negative marking.

The coding question for me were,

1. It was a simple question based on string manipulation, you just have to take care about corner cases, otherwise it was a cakewalk.
 2. The second question was to [find the next greater number using the same digits as given in the input string](#). Constraints on input string length was $1 \leq \text{length} \leq 100000$ so an $O(N \log N)$ solution would be good to go.

Example

Input: 1532

Output:2135

\xe2\x80\x99m not sure exactly but, students who solved both the coding questions completely and also did well in mcqs were selected for next round. The results of this round were declared after a week. And the next two rounds were after a week of results.

Round 2(F2F interview):

This round was a f2f personal interview and was of nearly 1 hour for each candidate.

First he started with his introduction about his background and his current work in amazon as SDE, Then I was told to introduce myself. After that he began with the interview.

First he went through my resume as I mentioned about my summer internship he asked about my work there and about the application I worked on. He was friendly and seemed to be keen about everything I said. Then he took a glance on my project and found one of my project interesting so he asked me to show the logic and calculations on paper, I explained it for around 10 minutes, he was convinced with the answer and then we moved to the data structure and algorithm questions.

1. Keeping the story aside the question was basically to find [two nodes which sums up to given value in a balanced binary search tree.](#)

I suggested an approach to take inorder traversal and get the sorted array. And then to apply [this](#) two pointer O(N) time approach as the array already being sorted. He asked me if I can improve space complexity instead of O(N) to something better? I told him a method to maintain two stacks one for inorder traversal and the other for reverse inorder traversal and doing the same two pointer approach as one stack would give array elements in ascending order and the other would give it in descending order. I was not sure about the iterative implementation of this traversals so he said it was fine and told me to code the first approach. He reviewed the code thoroughly and after some explanation on code from my side he was satisfied and moved on next question.

- He asked me to design a data structure which supports insert, search and delete operation in best possible way. I suggested a doubly linked list with hashmap than he said if I can improve on delete time complexity. Then I suggested Self balancing BST (AVL Tree) which will support all of these in O(LogN) time. He was convinced and told me to show how will I balance the tree? I told him about the rotations to perform after every insert and delete operations. I didn't have to code this.
- After this he said if I had any questions for him, I asked a couple of general questions and then the round was over.

The results of this round were declared after around an hour of completion of the entire round for all the candidates.

Round 3(F2F interview):

This round was also based on data structure and algorithms and it lasted for more than an hour.

- The first question was that I was given an array of non negative integers where each integer represents the maximum number of jumps that I can take from that position and have to find the number of ways to reach the nth step. where n is the length of the array. I suggested him a DP solution, I took an array count[n] which stores number of ways to reach that particular step and lets take the input array as steps[n].
 - And the relation was,
count[0] = 1; (As there is one way to reach there and we are already there by that way!) for each i from 1 to n
count[min(i+1, n-1)] to count[min(i+steps[i], n-1)] would be incremented by count[i] as the ways to reach here were count[i] and we can go up to steps[i] from here.

He was convinced with the solution and told me to write a working code without any mistake.

- The second question was about [joining the parts of a rope by taking two parts at a time to join them and finally merging them to a single rope in minimum cost](#), where the cost is defined as sum of the two ropes we chose to join. I told him greedy approach using priority queue, to take two min length pieces from the priority queue and adding the merged piece again to the priority queue until there is a single rope. Then he asked me how would I implement priority queue? I told him that I will use min heap. Then he asked me about insertion and deletion in min heap and after that we moved to the next question I didn't have to code this one.
- The third question was that I was given an n-ary tree each node has an integer value and I had to find a subset of node which has maximum sum but I can't take both parent and child in the set (i.e. I have to exclude at least one of them). This problem resembled to [this](#)

[problem](#) which I had solved earlier. So I suggested the same by taking two extra properties in Node class (i.e. maximum sum including this node and excluding this node) and than taking level order traversal of the tree and changing the value of the including and excluding variables of Nth level while being in (N-1)th.(i.e. while inserting them in the queue, here we have to do it by considering all the childs of the current node. And the root node being initialized with the value of excluding as zero and including as the value of that node) And finally taking the sum of max(including, excluding) for all the leaf nodes. He then told me to write working code with all the corner cases covered. And he also told me to write the Node class.

After this 3 question he asked me about my internship and projects and as when the terms kept coming he asked me various questions on them,

- What is react?
- What is component based development?
- What is the difference between SQL and NO-SQL database?
- What is AWS? etc.

At last he asked if I had any questions for him, and then the round was over.

After around two hours of this round the results were declared, I and other 6 students were selected.

I would suggest to be confident and think loudly while being there and also express your thoughts by taking examples on paper and ask questions wherever there is a doubt. Best of luck for your interviews!

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Amazon Interview Experience SDE-1

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 13 Nov, 2019

\xc2\xd0

Round 1: Pen Paper based DSA Round.

I was asked to solve two problems. The focus was to write a complete production ready optimised code managing all the edge cases. You were not allowed to write pseudo codes:

1. [Reverse a Linked List in groups of given size](#)
2. [Connect n ropes with minimum cost](#)

The HR gave me the feedback that the Interviewers are really impressed with the clean and optimised code that I wrote managing all cases.

\xc2\xd0

Round 2: F2F \xe2\x80\x93 Pen Paper based DSA Round.

Interviewer introduced himself and asked me tell him about myself. Then we straightaway jumped into problems. The focus was same. Pseudo codes were not allowed. Was asked to write complete production ready code in preferred language managing all test cases.

1. [Trapping Rain Water](#)
2. [Boundary Traversal of binary tree](#)

\xc2\xd0

Round 3:\xc2\xd0F2F \xe2\x80\x93 Pen Paper based DSA Round.

There were two people in the interview panel. Each one of them introduced themselves and asked me one question each. Write complete code. Pseudo codes were not allowed.

1. [Water drops in a pipe problem](#). We discussed on different cases. I gave a stack and maths based solution.
2. [Minimum candies distribution problem](#). I gave an approach but was not able to code the whole solution properly in the given time. The interviewers asked me to stop as they were running out of time.

\xc2\xd0

Round 4:\xc2\xd0F2F \xe2\x80\x93 Pen Paper based DSA Round.

The interviewer introduced himself and went straightaway for the question. He emphasised the same thing that he is looking for production ready complete code. Only one question was asked in this round. Lots of discussion on optimising the solution which took a lot of time.

1. Print the nodes of the binary tree in such a fashion that you print the leaves first. When you print the present leaves in the tree, these leaves would be deleted which may result in new leaves. After first round of leaves deletion you have to print new sets of leaves that were created due to previous deletion. Now print these leaves and delete them which would result in newer leaves.

Again print these newer leaves and proceed so on, till you process the whole tree.

The required complexity to solve this problem was $O(n)$. I gave $O(n^2)$ solution using multiple recursion but was then able to optimise it to $O(n)$. After giving the approach I was asked to write working code for the same.

\xa0

Round 5:\xa0F2F \xe2\x80\x93\xc2\xa0Computer Science Fundamentals.

I was asked to answer questions on Computer Networking, Operating Systems, DBMS, NoSQL, In-memory Caching, CDN (Content Delivery Network) and its use cases. Nothing fancy. If you had studied these subjects in your college you could easily answer the questions. Some of the questions were based on the technology I had worked on.

Round 6:\xa0F2F \xe2\x80\x93\xc2\xa0Engineering/Hiring Manager Round.

After brief introductions the interviewer started questions based on the projects I have done in my organisation.

- He asked me to draw the whole flow of the project(HLD) and explain each micro-services we had. I explained him the end to end architecture and the flow and why we were using certain technologies.
- I explained him how we were using NGNIX SSD caching capabilities which he was not aware of.
- I explained him my contribution in the project.
- Who made various design decisions and technology stack decisions and why.
- How hard was it to convince the team when you chose a certain technology to work with.
- I assume the focus was also on numeric figures or rather how well I was involve in the project. I was asked QPS, response times, type of http request being used, number of instances of the micro-services running, etc. Thankfully, since I am closely involved with the architecture of my project, I was able to answer almost all of them.

These are some of the discussion points I could recall.

Round 7:\xa0Video Conference \xe2\x80\x93\xc2\xa0Bar Raiser Round.

After brief introduction, the interviewer told me that I need to answer the question based on my experience in my present organisation. The focus seemed to be to answer the question in STAR methodology.

- He asked me to describe the most challenging technical problem that I faced in my project and how I solved it/still working on it, which benefited or would benefit the team. Was it the most difficult and rewarding challenge that you faced? We had further discussions on it.

Then he asked me to write production ready code in a screen-shared word doc. I was required to manage all cases and sub-cases.

1. Sorted insert node in *Doubly Circular Linked List*.

\xa0

After two weeks time, I was informed that I am a hire for them!

\xa0

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How to Prepare for Amazon AWS Cloud Support Associate On-Campus test?

- Difficulty Level :\n[Medium](#)
- Last Updated :\n31 Oct, 2019

The test comprises 4 sections total of 77 questions in 90 minutes of time:

#1. 1st Section consists of 20 Aptitude questions to be solved in 15minutes of time they were from mediocre to hard ones so practice some online from geeksforgeeks or careeride sites.

#2. 30 questions of OS, DBMS, and Computer Networks they were easy ones try to learn from this will surely help

#3. 20 questions of Cloud computing for that prepare from Amazon AWS web site about that all is given or a free coursera course by google on cloud computing or by nptel videos on youtube anyone will help you learn.

#4. Lastly two easy coding questions same for all 1 coprimes numbers and other sorting one both you can find on GeeksforGeeks easily. I got shortlisted thanks gfg.

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Amazon Interview Experience for SDE-2

- Difficulty Level :\nHard
- Last Updated :\n29 Oct, 2019

Round 1:\xc2\xd0

1- Maximum water that can be stored between two building.

[Maximum water that can be stored between two buildings](#)

2 \xe2\x80\x93 Sort linked list(Used merge sort)

Round 2:

1 \xe2\x80\x93 Word Ladder problem.

[Word Ladder \(Length of shortest chain to reach a target word\)](#)

2 \xe2\x80\x93 Left view and right view of binary tree

Round 3:

1 \xe2\x80\x93 Question on projects[HLD]

2 \xe2\x80\x93 Design a system like Red bus [HLD, DB design, Design microservice architecture]

Round 4:

1 \xe2\x80\x93 Detail discussion on projects like HLD, most challenging task, why sql or nosql, db design

2 \xe2\x80\x93 Some behavioral questions[Asked to explain it using STAR(Situation, Task, Action, Result) methodology]

Round 5:

1 \xe2\x80\x93 Discussion on projects

2 \xe2\x80\x93 Design a system like Amazon locker.

<https://leetcode.com/discuss/interview-question/233869/Design-Amzon-Locker-system>

3 \xe2\x80\x93 Behavioral questions.

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Amazon Interview Experience for SDE 1 (1.5 years Experienced)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n29 Oct, 2019

Amazon Chennai conducted drive for SDE 1 and SDE 2 recently on 28th September in Delhi

Initially there was a written round where we were asked to write algorithms for certain problems. The problems were of medium level. There were total 3 problems as:

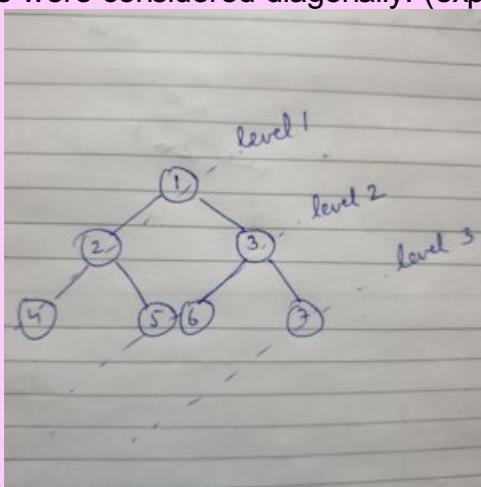
Problem 1: [Check whether given linked list is palindrome or not](#)

Problem 2: \xc2\xd0[Find row with maximum number of 1s in sorted binary matrix](#)

Problem 3: [Wild card pattern matching](#)

Round 1(F2F):

1. Given a binary tree, find the difference between sum of all the elements at odd and even level of the tree. The level of tree were considered diagonally. (expected space complexity O(1), time



complexity \xc2\xd0 O(n).

2. It was a standard DP question, we have to find the maximum possible sum to reach the last row of matrix starting from top left corner and only possible moves were going down and diagonally right.

Then he asked me some behavioral questions.

Round 2(F2F):

1. [Maximum sum path in a binary tree](#)
2. He started this question by framing a story just like we find for every question on codechef but it turn out be one of the DP problem ([word-break problem](#)). I told him my approach using Trie and it worked on some test cases too but couldn't provide the efficient solution using DP.\xc2\xd0 I had never seen this question before but later got to know it is one of the common question to be asked.

Round 3 (F2F Hiring Manager):

He was one of the senior manager of the team for which this hiring drive was conducted. Firstly, he asked me to introduce myself and then he asked many behavioral questions based on amazon

principles.

Only 3 rounds were conducted on that day and HR told me that next round will be conducted over video conferencing.

Round 4 (Bar Raiser):

This round was conducted after two weeks and the interviewer was a senior manager having more than 10 years of experience at amazon itself. He started with my introduction and then asked behavioral questions based on amazon principles like :

1. Tell me a situation when you worked on something beside your team
2. If there is a product release tomorrow and you came to know that there are many bugs in product which would take at least a two weeks, what would you do in this situation.
3. Best project you have worked on.

He also asked some questions from Operating Systems on scheduling algorithms, race condition, how mutex and semaphores work and their practical implementation, how data is saved on disk.

He wanted to ask questions on design patterns also but I replied that I am not much knowledge of that.

At last, I was asked to solve an algorithmic problem which was given a text file of words and spaces with no punctuation and we need to compress this file in order to reduce the actual size of the file.

\xc2\xA0

After two weeks I got the call from HR that I have been shortlisted for this position.

Verdict: Selected

Note:\xc2\xA0At every stage you are expected to write clean, simple and efficient code with minimal possible time complexity on paper or whiteboard. Even if you are not sure about your solution, tell the interviewer about your thought process and approach as sometimes they are not just looking for the exact solution rather they judge you on your thinking ability and how you see the problem in itself.

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Amazon Interview Experience for SDE-1(0 \xe2\x80\x93 2 years Experienced)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n22 Oct, 2019

Amazon Interview Experience for SDE \xe2\x80\x93 1 Off campus Drive Bengaluru.
Myself 2019 passed out.

First round is a written round. There are different sets of questions.

Round 1\xc2\xa0 WRITTEN TEST

- > Stocks maximum profit problem
- > Sum of heights of nodes in binary tree

Above round is for 45 min. After that they announced results. I was shortlisted for next round.

Round 2, Face to face technical interview \xe2\x80\x93 1

tell me about yourself

discussion on stack and queue about their usage and operations.

- >Implement stack with push, pop, peek, getmin operations in O(1)
- >Right view of binary tree.
- q/a on different data structures.

Code must be flawless and production ready.

Interviewer is friendly and we had a healthy discussion about her role and work-culture at Amazon.
This round took more than 1 hour. I was shortlisted for next round.

Round 3, Face to face technical interview \xe2\x80\x93 2

Tell me about yourself

- >Minimum number of platforms for trains, given train arrival, departure.
- >Get the zig-zag traversal of a binary tree.

(Interviewer asked me do you know this question before I admitted I know, then asked me to give logic)

discussion on binary tree

- >flatten the linked-list(asked to give the logic)(Interviewer modified this question as below and asked to code)
- >print the values of the nodes, for given linked-list as when flattened(without modifying linked-list)

Interviewer is very particular about the code and logic and asked me to try different solutions other than given, I tried and gave different solutions but it took time. Interview took\xc2\xa0 around 1.5 hours .

Be honest in the interview it will help you a lot.

Round 4, Face to face technical interview \xe2\x80\x93 3

This interview is 2 on 1.

Tell me about yourself

a brief discussion on different data structures and their importance

->All the following operations must be achieved in O(1) addition(), removal(), getRandomNumber(), search()

allowed to use any Data Structure

(Assume you are giving input from user and can perform operations in-between)

one more question asked(don't remember exactly) (only logic and how I approach discussed)

->Few os questions on deadlocks, Multi-threading.

->discussion on basic networking and how internet works

how will you earn the trust of your colleagues

and behavioural questions related to their leadership principles.

Be genuine and give your best. Let the interviewer feel you are a team player and able to work.
(Amazon is very particular about the 14 leadership principles, do refer them)

Round 5, Face to face interview \xe2\x80\x93 4(Hiring Manager round)

->Pruning a binary tree (prune all nodes if path_sum > n from root to nodes)

Interviewer asked me why I did choose the logic and explain about the optimal space and time complexity for my solution.

->Asked about internship and role, how I contributed to my team in intern.

->Project discussion.

Few behavioral questions.

Verdict : Selected

NOTE : Whole process took more than a month so don't worry they will definitely convey the info.

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Amazon Interview Experience(ACMS) | On-Campus

- Last Updated : \n21 Oct, 2019

Amazon came to our campus for ACMS in December. The test conducted consisted of 20 Computer Science MCQs from DSA, DBMS, Networks, OS and a bit of Computer Architecture. I was one of the 20 people selected. We started from January and worked with them for a project and were called for 4 sessions to the Amazon Office after which Amazon took a written test consisting of four sections:

1. Aptitude-Easy Questions
2. Some Basic English
3. Two coding questions
 - a) A problem based on Round Robin Scheduling
 - b) Problem based on two sum problem

<https://leetcode.com/problems/two-sum/>

with some language added to make it seem difficult also we had to take care of rounding off the answer and set the precision for 4 digits after the decimal point.

We had our project presentations after the test. The scores were finalized from the project and the test combined. Those who had scores good even were forwarded to interviews.

In the whiteboard interview round I was asked three questions-

1. To serialize and deserialize a binary tree-

<https://leetcode.com/problems/serialize-and-deserialize-binary-tree/>

2. Two sum problem again-

<https://leetcode.com/problems/two-sum/>

. I told them both of the approach using hashmaps and two pointers

3. Four sum problem-

<https://leetcode.com/problems/4sum/>

I was asked to write the code and describe my approach while going through the code.

My interviewer was very friendly. They always want to look at how you approach the problem. Geeks for Geeks has an extensive section of questions. InterviewBit can be handy to look at the time you are taking to solve the problem. LeetCode has many test cases that help you look at all the possible problems your code might have. LeetCode Mock tests come handy as well. However Geeks for Geeks community can always be helpful to solve and understand all possible approaches to the problems.

Hope My post helped

All the best \xf0\x9f\x98\x80

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Amazon Interview Experience | SDE-I

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 27 Apr, 2020

Online round:

Test Pattern: Two coding problems, 28 MCQs

Time: 1 hr 30 min

MCQs were solely based on the questions pertaining to the input/output of a C program. A general pattern observed was that there would be a code snippet in the question and one would have to provide correct output/error of that particular program.

Coding problems included:

1. [Count trailing zeroes in a factorial of a number](#)
2. A coordinate plane is given. On each point (x, y) , there is $x+y$ number of apples on it. A person is standing on $(0, 0)$ and he wants to buy a square plot having N number of apples inside it (including the periphery). Return the value of perimeter of that square plot if the value of N is given

After a couple of weeks, I was called for the face to face interviews. Four rounds of interviews were conducted spanning over two days.

Round-1 (Technical) [60 mins]

Questions in this round were of easy difficulty, having pretty straight forward solutions. The interviewer asked the below-mentioned questions. Once I provided the correct solution, he tweaked the question to some degree and again asked me for the solution. After receiving the correct solutions, he asked me to write the code of it on paper.

Questions:

1. [Count all possible paths from top-left to bottom-right in a matrix](#)

Tweak: Count all possible paths from top-left to bottom-right in a matrix having obstacles

2. Find inorder predecessor and successor of the node in BST in which nodes also have a **parent** pointer along with left and right pointers.

Round-2 (Technical) [120-150 mins]

This round was the most difficult round of the entire process. I was expecting that this round would have an easy-medium kind of difficulty level but the interviewer had other plans. He straightforwardly asked me to solve [Longest Palindromic Substring](#). I was taken aback a bit (as Dynamic

Programming hasn't been my strong point) and sat there doing nothing for about 10-15 mins.

After then, slowly, ideas started coming into my mind and I started to design the solution on the paper. At regular intervals, the interviewer would ask me about what I am thinking and would point out contradictory cases if the approach was wrong. But after some point, I realized that my approach was nowhere in the vicinity of the correct solution and so did my interviewer. So he started providing me hints disguised in questions like *What if you approach the question from this perspective?* After a couple of hints, I came on the right track and went on to solve the question!

Apart from this, he asked me the questions on heaps, its building, inserting and deleting time complexities, and priority queues.

After the round ended, I was almost certain that I was *done for the day* but again, the interviewer had other plans!

Round-3 (CS Fundamentals) [30-40 mins]

This round was solely focussed on checking my Computer Science fundamentals. Questions were from the domains of Operating System, DBMS and Computer Networking. Difficulty level was easy, as they were asking only basic questions of this domain. Some of them are mentioned here:

- What is Deadlock?
- How deadlocks can be detected?
- Given a directed graph of process dependency, write a code to detect deadlock. (Solution: Cycle in Directed Graph)
- What are ACID properties in DBMS?
- Difference between TCP and UDP

Round-4 (Tech + HR) [90-120 mins]

Technical questions:

1. [Find Excel column name from a given column number](#) (Wrote the solution on paper)
2. [Coin-in-a-line problem](#)
3. Detailed explanation of need and working of Virtual Memory in Operating System
4. Overview of pages and page faults

HR questions:

- Why Amazon?
- Which was the most difficult interview round and why?
- Did you solve all the questions in all the rounds?
- Given the fact that your current company is also good, why are switching the company at such an early stage of your career? (*Reason for asking this was because it had only been two months since I had started my first job*)
- What were the mistakes that you have committed in your current job and what did you learn from it?

After the round got completed, the HR team informed me that they will get back to me after some days, and guess what, I got the offer!

Last but not the least, I would like to list down some points which I personally experienced during this interview process:

- Interviewers provided enough time for the candidate to think, design and write the solution.
- They were willing to help the candidate in case he was unable to solve the problem by providing hints and pointing out caveats in his/her solution.
- Rather than the solution, they were more interested in checking how a candidate approaches a problem and whether he/she has the ability to solve it if provided some help.
- Testing candidates\xe2\x80\x99 coding skills with pen and paper coding style.

Looking forward to working with you at Amazon.

ALL THE BEST! \xf0\x9f\x99\x82

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Amazon Interview Experience 2019 (SDE, DE, SE)

- Last Updated : \n16 Oct, 2019

Round 1: Online assessment consists of 2 sections(sectional cut-off exists, no negative marking)

Coding: 2 coding questions(one easy and one hard)

MCQs: 20-25 mcqs on c/c++

Students who did 2 coding questions completely and who also did well in MCQs got selected for the Interview

Round 2: Technical round consists of 2-3 rounds

They came to hire for 3 different roles SDE, DE(data engineer) and SE

TR1: 45-60 minutes

1. Projects and schema(you need to explain clearly about your projects and technologies you used. Latest Technologies might help you to grab their attention like ML)
2. Simple queries on MongoDB(as it is on my resume)
3. SQL Queries based on joins and Inner query(This part is little difficult you may get confused)
4. Draw database schema of uber
5. normalization and normal forms
6. Try to normalize the given 2 tables to 3NF
7. What is cloud computing and what are the advantages over a normal database
8. oops and DBMS concepts(polymorphism, abstraction, savepoint, DML, DDL commands etc)
9. Types of joins
10. What is a distributed file system?
11. lastly 2 simple coding questions(find the frequency of a number in a sorted array, implement binary search)

\xc2\x90

TR2: 30 minutes

1. Project and schema
2. SQL queries harder than the previous round. They test your idea and efficiency of retrieving data using joins and inner queries
3. Simple DBMS concepts
4. 2 simple coding questions(frequency of a number in an array, find the second largest number in the given array)

\xc2\x90

TR3: 20-30 minutes

1. This round is to test our problem-solving ability.
2. find mid element of a Linked List
3. find merging point of 2 linked lists
4. print right view of a binary search tree
5. Time complexity matters

6. Based on your performance your role will be decided
7. For Software Development Engineer(SDE) you need to have good problem-solving skills. Prepare LL, Trees, DP, Graphs.
8. For Data Engineer(DE) role prepare SQL queries and Database concepts as well as cloud computing and big data basics. You get to work on AWS as a DE.
9. TR rounds may moy be in the same order for everyone.

\xc2\xab0

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Amazon Interview Experience for SDE 1 | OFF-Campus

\xe2\x80\x93 2019

- Difficulty Level :\nHard
- Last Updated :\n01 Nov, 2019

A recruiter contacted me through INSTAHYRE (Job searching platform), I have my profile on a lot of platforms, but Instahyre seems to be the most genuine one. So I got a mail from Amazon HR, he called me for an onsite interview at Amazon Bangalore.

Around 60-70 candidates were there on the interview day. There were 4 rounds, each one was elimination round. After interview rounds there was 1 more round on skype call.

Round 1(Written Round): Generally amazon conducts an online assessment, but in my case, they conducted a written round at the venue with the same format as that of online assessment- 2 Coding Questions in 60 minutes. MCQs were not there.

- [Find all triplets with zero sum](#)
- [Replace each node in binary tree with the sum of its inorder predecessor and successor](#)

Questions were easy, but their main focus was on Time and Space Complexities. After this round, some 50 students were left.

Round 2 (Face to face interview): This round was focused only on my DS and ALGO skills. The interviewer was very friendly. He gave me 2 questions and asked me to first discuss the approach, and then implement production-ready code for the problems. The main focus in this round was:

1. To optimize the solution to best possible complexities.
2. Write production-ready code, your implementation will be tested, you have to write a code that would run without any compilation error or runtime error if tested on a system, even a small mistake can lead to your rejection.

Questions asked:

1. This was recursion and memorization based. This took a lot of time, I was trying to solve this, but since I saw this question for the first time, I was a bit afraid, interviewer was friendly, he helped me with some hints and finally we reached to a solution.: \xc2\xa0\xc2\xa0<https://www.hackerrank.com/challenges/grid-walking/problem>
2. This was hashmap and tree-based problem <https://www.geeksforgeeks.org/construct-a-binary-tree-from-parent-array-representation/>:

This round went well, and I was qualified for the next round.

Round 3(Face to face interview): This round was also focused on DS, ALGO. Interviewer asked basic details about my projects and then he asked 2 questions.

1. It was a string problem, the question was of medium difficulty, I was able to solve this in less time. \xc2\xa0 \xc2\xa0\xc2\xa0\xc2\xa0<https://www.geeksforgeeks.org/find-the-smallest-window-in-a-string-containing-all-characters-of-another-string/>
2. This question a standard DP problem \xe2\x80\x93 Buying and selling stocks with max profit if only k transactions are allowed. He started with basic version and then moved to the standard version. \xc2\xa0\xc2\xa0<https://www.geeksforgeeks.org/maximum-profit-by-buying-and-selling-a-share-at-most-k-times/>\xc2\xa0.

I cleared this round.

Round 4(Face to face interview): This round was focused more on CORE knowledge (OS and DBMS only, no Networking questions were asked.). He discussed my projects in great detail, be ready to answer each and every minute detail about the projects mentioned in your resume. After this, since I'm a C++ guy, he asked me some questions about C++ like:

1. How C++ has evolved from C++ to C++17?
2. What is diamond problem?
3. How virtual keyword works?
4. Questions about multi threading in C++.
5. How C++ compiler works in detail.

Then he moved to core subject questions i.e., OS and DBMS, he gave me some scenarios and asked me how OS would behave, how it will handle all this, how semaphores will help, what is virtual memory, how does page replacement algorithms work. In DBMS he asked me about Indexing in detail, how actually indexing works in DBMS.

Since my resume mentioned about Javascript and NoSQL, he asked my differences between NoSQL and SQL databases, and when to use what.

I cleared this round and then I was told that I will have one more Round of interview on skype and that would be a technical one.

Round 4(Online call): Interview started with his introduction, and then my introduction. Then he asked questions about my academic project. Then he asked some behavioural question like Why Amazon?, What motivates you?, What have you learnt on your own?. After these questions, he asked me one easy coding problem. After discussing the approach he asked me to write production-ready code for this.

- [Minimum Number of Platforms Required for a Railway/Bus Station](#)

\xa0

Next day I got a call from HR congratulating me for bagging SDE 1 offer at Amazon.

\xa0

SOME TIPS:

1. One month before your interview, start practising coding problems by implementing them on paper as during the interview they would expect a production-ready code which means that if they write that same code in their system it would run without any compilation error.
2. Improve your communication, it doesn't mean improving English, just make sure that during the interview, the interviewer gets to know about your thought process, that would help him in making the correct decision even if you're unable to solve the problem.
3. Go through your resume, you should be able to answer every question about anything mentioned on your resume.
4. Write your knowledge level with every skill that you are mentioning in your resume like if you are good enough in C++, mention it's PROFICIENT skill.
5. Don't panic if you see a new question. Try to solve that as if you are sitting with a friend, it's a part of the interview.
6. Always think as an interviewer during the interview, like what would you expect from someone if you were interviewing a guy and he is in the same circumstance as you are.
7. It's your responsibility to get your strength noticed by interviewer.

All the best!! Happy coding!!

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Amazon Interview Experience for SDE | On-Campus 2019

- Difficulty Level :[Expert](#)
- Last Updated :[11 Oct, 2019](#)

Round1: Online Assessment Round

Online test was on mettyl platform: **28 Technical MCQ and 2 coding questions.** Test duration was 90 mins.

Technical questions i remember were \xe2\x80\x93

1. Implementing stack using 2 queues and given push should be $O(1)$ and a series of push and pop operations. What are the number of enqueue and dequeue operations performed
2. $\text{int } a = (b=6)+(c=8)$. What is the value of a ?
3. There were some questions w.r.t. to operator precedence.

All are C and C++ related questions. If you know the basics of c and c++, you will be able to solve most of it.

Coding questions

1. Given a string with small letters convert the string into proper URL format considering the various constraints given. (like ru is always the domain extension and few other constraints)

i/p - ftpramgruindex \r\no/p \xe2\x80\x93 ftp://ramg.ru/index\r\n

2. Given the 1D matrix of size k . Consider it as a 2D matrix of m rows and n columns(such that $m*n=k$) and return the sum of maxrow-sum and maximum-column sum.

i/p \xe2\x80\x93 [1, 2, 2, 3], 2 rows and 2 columns\r\no/p \xe2\x80\x93 10\r\n

Interview Process

The interview process consists of 4 technical interviews. Each technical interview is mainly based on Data structures and Algorithms. Code for an optimised solution to each problem asked in every round should be written on paper.

Tech Round 1: 50 mins

1. A glance at my projects and achievements.
2. A question quite similar to [Minimum platforms](#)
3. Given an array(size 365) of boolean values saying if a particular person is travelling on that day or not. The ticket schemes are given like for 1 day it costs Rs 2, for 7 days(continuous) it takes Rs 5 etc. We have to select the tickets in such a way that the total cost of all tickets is minimum for the whole travel. (somewhat similar to coin changing problem).

Tech Round 2: 90 mins

1. Reverse a LinkedList in the most efficient way. Can we reverse in $O(1)$ space complexity?
2. Check palindrome in a LinkedList say in $O(1)$ space complexity.
3. To find the maximum number of people in a party at any time given every person\xe2\x80\x99s entry and exit time.
4. Given a 2D matrix containing 0 and 1 which are row-wise sorted, write the most efficient algorithm to

return the maximum number of 1's in a single row.

5. A question similar to this [painters partition problem](#). He wanted a dynamic programming solution of $O(k \cdot N^2)$ time complexity.
6. Discussion on my project implementation.

Tech Round 3: 60 mins

1. A small discussion about my project database and backend implementation.
2. You will be getting a stream of edges for a directed graph. You have to tell at what point the cycle is formed. (My approach was using Disjoint sets). He asked if I can implement the same algorithm to the undirected graph also? He asked me to implement Disjoint sets algorithm and to make it efficient using union by rank and path compression. We discussed its time complexities.
3. Asked me about Ford-Fulkerson max flow algorithm. We discussed the applications, space and time complexities of the algorithm.
4. There is a codeword to win the game and an input stream of characters is coming. When the input stream forms a codeword, the player wins. Find at what point a player wins. Basically it was substring search problem. I told my approach using Z algorithm and later we discussed the KMP algorithm.
5. Some simple questions on OS like semaphores, threads, scheduling etc.

Tech Round 4: 60 mins

1. He was checking on my skills written in Resume. Later he asked questions on my blockchain project.
2. Write code for recursive soln of DFS for an N-ary tree
3. Write code for iterative soln of DFS for an N-ary tree.
4. Write code for iterative soln of DFS for an N-ary tree without a stack.
5. Write code for iterative soln of DFS for an N-ary tree without stack when parent pointer is given.

Verdict: Selected

Tips-

After listening to the question clarify any doubts you have, else you might end up solving a wrong question and this will leave a bad impression on the interviewer. Even if you know the solution, first tell the brute force and then optimize it. Write the code once you reached the optimised algorithm. Discuss with the interviewer, about tradeoffs between space and time complexities. Don't panic if you take more time to solve a problem, they expect you to do so. Don't panic if you can't come up with an optimised solution rather interact with the interviewer about your approach so that he may point where you are going wrong. Tell them your thought process instead of telling the solution straightforwardly. Amazon puts more emphasis on implementing optimised data structures rather than just coming up with a solution. So make sure that your data structure implementations are in optimised form. Stay confident and trust your instincts.

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Amazon Interview Experience Offcampus for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n06 Oct, 2019

There was a drive conducted on august 2019 in Bangalore. There were 6 rounds for me 1 written round 3 f2f technical rounds and 2 online rounds on amazon chime.

Round 1: (written round) Two easy questions were given in this round there was no limit in the time but i submitted it in around 25 minutes.

<https://www.geeksforgeeks.org/find-triplets-array-whose-sum-equal-zero/>

<https://www.geeksforgeeks.org/sum-of-two-linked-lists/>

Round 2: (f2f) two questions were asked in this round

<https://www.geeksforgeeks.org/find-the-row-with-maximum-number-1s/>

this question i had already had solved earlier so i told him the soln a bit quickly.other question was something like given a set of fishes which moves in either right or left direction and every fish has a size associated with it and the bigger fish eats the smaller fishes if they are facing in opposite direction. the question was to find the remaining fishes in the end. I came up with a solution using stack and they were much satisfied with that.

Round 3: (f2f) two question were asked in this round.

<https://www.geeksforgeeks.org/merge-sort-for-linked-list/>

<https://www.geeksforgeeks.org/median-of-stream-of-integers-running-integers/>

the interviewer wasn't friendly in this round so i messed up in the second question a little bit after these question he asked few questions related to operating system and i answered those but he wasn't very satisfied.

Round 4: (f2f) three question were asked in this round which were from dp, linkedlist and binary search.

the first question was <https://www.geeksforgeeks.org/count-number-binary-strings-without-consecutive-1s/> 2nd was find the element of linked list which is at the position $\text{sqrt}(\text{len(linkedlist)})$ in one iteration and the third question was on binary search which i dont really remember. I hadn't seen any of these questions earlier so it took me a little time for solving these question. and then he asked me a few questions related to my project. he was pretty impressed.

Round 5: this was the easiest among all the interviews

<https://www.geeksforgeeks.org/given-an-array-a-and-a-number-x-check-for-pair-in-a-with-sum-as-x/>

and the second question was about finding the first number which is common between two linked lists. I told him a solution using hashing and he was pretty much satisfied with that and then he asked me some questions from dbms like acid properties and normalisation.

Round 6: (Bar raiser round)

the first question was given a playlist of songs you have to randomise the list and play every song once until all the songs in the playlist are done. the second question was https://www.geeksforgeeks.org/sort-a-stack-using-recursion/ and last question was finding the first missing number given the starting value and the sorted list. i told him a solution using binary search and he was pretty satisfied with that. and after that he asked me few questions related to internship which i was able to answer.

for each round i was told to write code for the programs except for the 4th round's last question. After 8 days of the last interview i got a call from the hr that i have been selected for the sde1 role at amazon hyderabad. I was a bit lucky in the sense that i wasn't asked questions from computer networks which is one of my weaker subjects. i would suggest every one to keep practising and try to maintain a calm attitude while giving the interviews.

\xa0

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Amazon Interview Experience for SDE 2 (3 years Experienced)

- Difficulty Level : \n [Expert](#)
- Last Updated : \n 06 Oct, 2019

Amazon Interview Experience 1:

Screening Round:

1. Find all pairs that add up to 0
2. Find all pairs with sum closest(abs value) to 0 but non 0
3. Find all pairs with sum farthest(abs) to 0

Design Round:

1. A startup website has a lot of real-time traffic . I want to see the real-time view (refreshed every 1 min)\xc2\xaa of top 20 users by hit count within last 10 mins. Full distributed system, I have to resolve all the concurrency issues.

Coding Round:

1. There are 4 patterns of arrays: monotonic increasing, monotonic decreasing, increasing then decreasing, decreasing then increasing. Given an array, identify accordingly
2. Given array of number, find the max from each subarray of size k. Sliding window

Result: Rejected

Amazon Interview Experience 2:

Design Round:

1. Design\xc2\xaa a blogging website that scales from 100tps to 1000tps . What design choices will you make between No-Sql vs Sql and full explanation why ?
2. How do you send Notification to users based on their followed topics every day\xc2\xaa in the above system? How do you add comments to the blogs ?
3. How do you add a node in a live system where consistent hashing is used for load balancing ?
4. Time Complexity to find a row in Sql Vs No-Sql database. Need to go in depth and explain why . (What if there are duplicates ?)
5. What exactly is the problem with Relational Database systems when you want to scale ? \xc2\xaa
6. What is ElasticSearch ? What is Dynamodb?

\xc2\xaa

Amazon Leadership Principles

1. Hardest technical challenge solved: In depth details on what was the challenge, why was it required to be solved, what approaches were there, which one did you choose over others and why. Who else was involved, and how were their contributions ? How long did it take to develop
2. Situation\xc2\xaa where you faced ambiguity and how you resolved it\xc2\xaa
3. Any example of system that you designed in your current work that showcases your design skills ?

Result: Rejected

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How to Prepare for Amazon Software Development Engineering Interview?

- Difficulty Level :[Hard](#)
- Last Updated :[29 Nov, 2021](#)

Amazon [Hire and Develop the Best](#). One of the [Big Four Tech Companies](#) who cares a lot about their [Leadership Principles](#) when it comes to opening a door for a candidate in the company. Amazon is a top company according to the [2018 LinkedIn Article](#). If you are a person who is preparing yourself to get into this company, you might be definitely aware of the importance of [Data Structures and Algorithms](#) for interview preparation.

\xc2\x0



There is no doubt that this one is a must-have skill to apply for the job of SDE or software engineer role in Amazon or any other big tech company. Hiring procedures in these companies are kind of similar but we are going to share some specific detail, tips, preparation strategy, and evaluation process of Amazon to crack the interview. Keep in mind that the difficulty level of these rounds depends on the level of SDE position you are applying and you can prefer any programming language you are comfortable with.

Important Points to Keep in Mind:

- Amazon gives higher weight and has a standardized script for [Leadership Principles](#) throughout the interview. It has a much stronger focus on customer obsession. So go through their leadership principles carefully if you are applying there.
- Do some background research on the company. What is the company doing right now or what is the market scenario or technology they are working on currently. That shows your interest in the company and this is a good way to judge a person how much a candidate is interested in the company.
- Interviewers are trained to not react to your answers so don't expect yes or no answers from them that if you are heading in the right direction or not. This sucks but is a very effective way of assessing a

candidate so prepare yourself to see stone-cold faces.

- Amazon conducts a **Bar Raiser** round during the onsite interview and in this round, they make sure that you as a candidate raise the bar for certain competencies, which means that you should be better than 50% of the people that are currently at that level.
- Amazon's interview questions/difficulty levels are less consistent vs. Google or Facebook.

Now it's time to discuss the strategy and rounds that Amazon conducts for the hiring procedure. But before that keep in mind a quick tip that works in every company: **Your goal is to write just the right amount of good code and communicate well. You're not paid to write code, you're paid to think, figure out problems, and give the solution.** To crack any technical interview all you just need is a laptop, a working internet connection will solve problems regularly and within a few months, you can learn the essentials.

The interview procedure in Amazon is kind of similar to other big tech companies so let's discuss that:

Sending Application: Getting a call from Amazon for an interview is not easy if you don't have any referrals. Your chances to get the interview call are more if you have a connection with an employee there. If you don't have we highly recommend making connections with hiring managers or recruiters via [LinkedIn](#). Also, focus on your CV when you are applying for the job. Make it short, precise because none of the recruiters has more than 15 seconds to scan a CV. Write down only those things you are comfortable with, do not fake anything because the interviewer can spot that easily during the interview. Below is the link for the guidelines of CV.

- [Resume Building Resources and Tips](#)
- [How to write an awesome and unique CV](#)

Screening Interview: Shall we invite this candidate for the full loop? To filter out a lot of candidates Amazon conduct this round and this round saves a lot of time and resources for the company. So there will be 1-2 screening rounds before the onsite interview. The screening round could be telephonic or you will be asked to complete a coding challenge where you need to write clean, good, and bug-free code and that should be also optimized. This round consists of basic to medium level data structures and algorithms questions, you will have some online document to write down your code and that will be visible to your interviewer. It can have a 2-3 coding question. Below is the point to keep in mind for an online coding challenge or telephonic interview.

- The telephonic round is not designed to be very difficult, the meet of the challenge is to be delivered at the on-site interview.
- Amazon HR's are pretty flexible with the phone interview so generally, you can postpone the phone interview by a week to prepare yourself.
- Don't bother much about Dynamic Programming or Leetcode hard questions for telephonic interviews.
- Concentrate more on Binary Trees and Binary Search Trees. Learn how to traverse the binary tree in a different order, how to apply BFS and DFS to binary trees. You should know how to construct the tree from a given array. These questions will help to provide you with the basic foundation for any binary tree problems.
- Check Arrays and Stacks-related questions on Leetcode and GeeksforGeeks. Also, take a glance at the Linked List-related questions on Leetcode and GeeksforGeeks.
- For phone screens, concentrate on data structures and algorithms for about 70% and LP (Leadership Principles) 30%.
- Their typical response times are anywhere between 1 day to a week. Within a week they should definitely get back with the results. In case someone fails to contact you then send an email after a week. Also, check the link [Amazon Phone Interview](#) for more ideas.

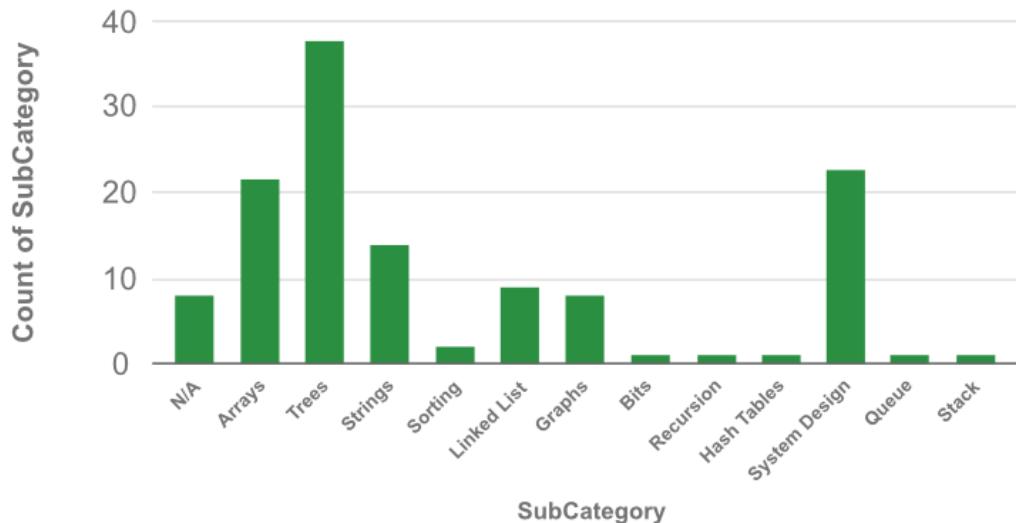
Onsite Interview: Once you get selected in the previous round, you will be invited for a loop that will take one full day, consisting of about four to five separate interviews and each of these interviews takes roughly an hour. All these rounds will be technical with BR round (All Technical + One Managerial) at the end. The exact number of rounds depends upon how you perform in each round and the level you are applying for. Now here comes the role of DSA and CS fundamentals to check your coding and problem-solving skill. You need to prepare yourself with all your projects, internship, previous experiences, and definitely your coding and problem-solving skill.

We are going to categorize this in the below section:

1. Technical Coding Round (Including Projects):

- The candidate is tested on whether he/she can solve real-world problems using the knowledge of data structures and algorithms. The expectation is to be able to arrive at the most optimized solution to the given problem. Your ability to convey your algorithmic knowledge along with code is a must.
- Below is the distribution of the types of problems that were generally encountered in an Amazon interview. This data is based on the interview experiences from Glassdoor for Amazon.

Count of SubCategory



- Check the link [How to Get a Job in Product Based Companies?](#) to deal with in-depth technical coding questions, what approach, and tips you should follow during the interview.
- Check the amazon site [Software Development Topics](#) to go through all the topics for technical rounds.
- Ask all the clarifying questions, think about the Brute Force approach, optimize the solution, and then write down the code. This is the simple step we recommend you follow to solve the coding question.
- You need to be comfortable with projects you have done in your past experience or during your internship. The interviewer will throw questions from there so make sure you have complete knowledge and detail about your project to explain it to the interviewer.

2. System Design Round:

- System design questions are an open-ended conversation and this round is mostly conducted with an experienced candidate where they test your overall ability to design and scale technically based systems.
- Check the link [System Design Interview Questions](#), [System Design Interview Preparation](#), and also check [GeeksforGeeks](#)
- The interviewer usually is interested in the choice of resources like Databases, Storage, Logging; efficient algorithms of the functionalities; identifying all the data and classes that would be important to store if anything goes wrong in the system; what functionalities are exposed to the end-user and what not so that they might not screw up the whole system?; Scaling of Systems and servers involved; Use of Multithreading, messaging queues, Cache, etc.
- Having a solid grasp on various database technologies, how they scale, and how they compare, knowledge of frameworks, and different technologies helps a lot in the system design round.
- Amazon has a specific flavor of involving more of a web-based component in the system design round.
- On a Glassdoor data set designing an e-commerce store or URL shortener service popped out frequently.

3. Bar Raiser Round:

As we have already mentioned about the Bar raiser round in Amazon where a candidate is assessed on skills and cultural fit with amazon's customer-centric and innovative principles. Bar raisers are specially trained for this. Below is the point you need to keep in mind for this round.

- The motive is to ensure the candidate is raising the bar not only for the specific team but for the whole company. Check the link [Hire Like Amazon](#) for more help.
- Amazon cares a lot about the [Leadership Principle](#) that we have already talked about. You should have stories for each principle. Expect the interviewers to probe into these questions.
- It's almost a technical round but they judge your leadership skills, your decision-making power, your mistakes, your learning from your mistakes, your work and your conflicts with your team members, your initiative in the past work, your manager's response to your work. Sometimes they give you situations and you have to answer your behavior in that situation.
- Amazon is also a place where you have to adapt quickly to changing objectives, your responses have to demonstrate that you can handle that.

Interview Evaluation Criteria: After the interview, a meeting is held between all the interviewers to discuss, debate, and justify their individual ratings with the Hiring Manager and HR Representative. The interviewers give the whole summary after the interview. The outcome of this meeting will be a final Inclined or Not-Inclined decision for the candidate.

A software engineer is expected to know how to code, know when to ask for guidance, ability to articulate the thought process, approach to solving a problem, and deliver results timely while maintaining a willingness to learn new processes and adapt quickly to changing roadmaps. An entry-level basic understanding of the core concepts of coding is generally all that is required and for higher-level ability to code and solve complex problems based on experience matter a lot.

Tips:

- Make a habit to solve problems regularly especially from [GeeksforGeeks](#), LeetCode, and HackerRank.
- Take the hints. Interviewers are always helpful and they will give you precise useful hints if you get stuck. It is important to catch the hint as fast as possible and proceed with the solution. If you are not able to catch the hint it is a big red flag.
- Never say that you cannot do it. Even if there is a problem that you have not solved before or seemed that you can't solve, keep attacking the problem from different angles, the interviewer will give you hints. But if you would say that you can't solve the problem it is a big red flag and you might end up getting rejected.
- Interviewers have generally a mindset while taking the interview that if he/she can work along with the candidate in his/her daily to a job or not. So make sure that you don't speak something which can give a red flag sign during the interview.
- Learn to **think out loud**. It's weird but in an interview setting, the most important piece is showcasing how you've come to a solution or understanding why you're doing X before Y.
- Your interviewer wants to see 3 key things in your code. It should run fast, not take up more memory than it needs to, and is stable and easy to maintain. Accomplish that and you're already ahead of most people.
- For behavioral questions read about the [STAR method](#) to describe a situation where you solved an issue that relates to the question; Explain the tasks you had to complete in order to solve the issue; Describe the action you took to complete the tasks; And close with the results of your efforts.

How to prepare for Amazon SDE?

GeeksforGeeks is providing you with an enriching [Amazon SDE Test Series](#) that will help you **prepare for the Amazon coding interview** and other product-based companies. Here, you can prepare yourself with various **coding questions for the Amazon interview** for the role of SDE. This test series is designed by industry experts who have taken into consideration all the **important topics of DSA** that various top-notch companies put forward for hiring.

Important Links:

1. [Amazon Interview Experience](#)
2. [Practice for Cracking Any Coding Interview](#)
3. [Cracking Technical Interviews](#)
4. [Tushar Roy's Coding Made Simple](#)
5. [Glassdoor Amazon Software Development Engineer Interview Questions](#)
6. [Ace The Coding Interview Everytime](#)
7. [Coding Interview University](#)
8. [Amazon Onsite Interview Question Onsite 2019](#)

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Amazon FT Interview Experience 2019 (On-Campus)

- Last Updated : \n30 Sep, 2019

All the 4 rounds were technical rounds.

Round 1:

The round began with an introduction and a brief discussion on projects. Then the interviewer started with the questions.

- [Quicksort a linked list](#)

I had to write the code for it on paper. The interviewer then asked me if we should continue with linked lists or move on to something else. I told him I was fine in either case.

- [Find the intersection point of two linked lists \(they may have loops\)](#)

First the question was without loops. I told him my approach. He then told me to solve it taking loops into consideration. I discussed my approach and wrote the code for it.

Round 2:

This round again had 2 questions.

- [Find the minimum number of \$\text{xe2}\text{x80}\text{x98}+1\text{xe2}\text{x80}\text{x99}\$ operations to be done on an array for it to have only \$\text{xe2}\text{x80}\text{x98kxe2}\text{x80}\text{x99}\$ distinct elements](#)

I initially told an $O(n\text{xc2}\text{xb3})$ solution. He told me to optimise it. I optimised it to $O(n\text{xc2}\text{xb2})$. He told me to try and optimise it further. I came up with an $O(n)$ approach but it would not work for a particular case. However, the interviewer was satisfied with this and told me to write the code for it.

- Given a chemical compound, find the numbers of each atom in it.

For reference, $\text{xc2}\text{xa0C}_6\text{H}_2(\text{NO}_2)_3(\text{CH}_3)_3$

I told a stack-based approach, traversing the string from right to left. As time was running short, I did not have to code it.

Round 3:

There were 2 questions in this round.

- Given the quad tree representation of 2 images, construct the quad tree for the image formed by superimposing these 2 images.

The interviewer first explained what a quad tree is and how an image is represented in the form of a quad tree. I solved this question using a recursion-based approach.

- [Number of ways to reach the Nth step](#)

I had to code my solution for both the questions on paper.

Round 4:

The round began with an introduction, followed by a detailed discussion on my projects and internship. The interviewer then moved on to questions.

- [Find the Kth largest element in a BST](#)
- [Implement an LRU cache](#)

I had to write the code for the first question only.

Tips:

- The interviewer doesn't expect the most efficient solution to each question right away. Instead, doing so will make it seem like you have mugged up the solution. So, start with the approach that first comes to your mind, and then optimise it further if the interviewer asks you to do so.
- After listening to the question clarify any doubts you have, else you might end up solving a wrong question and this will leave a bad impression on the interviewer.
- Make conversation with the interviewer while you are working on your approach. The interviewer may point out some mistakes and direct you the correct way.
- If you are stuck at any point, talking to the interviewer will help and you may also get some hints.
- Don't get nervous if the interviewer is pointing out mistakes in your approach or code. The number of mistakes you make won't matter as long as you correct them later.

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Amazon Interview Experience SDE-1

- Difficulty Level :\nHard
- Last Updated :\n01 Nov, 2019

Round 1 (Online on HackerRank)

Duration: 90 minutes

20 MCQ questions mostly based on Operating System, Data Structures and Algorithms and a few puzzles.

2 coding questions:

1. I don't remember the exact problem statement but it boils down to finding the cycle in an directed graph .
2. It was a no-brainer basic implementation question on strings. (Don't remember the problem statement).

We were called On-Site in Hyderabad for further F2F rounds.

Round 2 (F2F) Duration= 70 minutes : Started with my resume asked few questions for about 5 minutes and started with the Problem statements.

So there were 3 questions asked in this round:

1. Given an array and a positive integer k, find the first negative integer for each and every window(contiguous subarray) of size k.

Started with the naive approach then gave the optimized solution similar to the Sliding Window Maximum.

2. Given a matrix of size M x N, there are a large number of queries to find submatrix sums. Inputs to queries are left top and right bottom indexes of submatrix whose sum is to find out. For each query, we have to find the sum in O(1).

After solving these 2 questions the interviewer had still some time so he asked the third question.

3. Consider a pipe of length L. The pipe has N water droplets at N different positions within it. Each water droplet is moving towards the end of the pipe(x=L) at different rates. When a water droplet mixes with another water droplet, it assumes the speed of the water droplet it is mixing with. Determine the no of droplets that come out of the end of the pipe.

I was not able to understand the problem statement in one go after all the clarifications required I gave the mathematical approach to solve this problem. He was convinced with the solution but was emphasizing as to which data structure could come in more handy for solving this particular problem. After a few hints, I told that it can be solved using stacks.

Round 3 (F2F) Duration= 75 minutes: He started with few questions on my previous job experience but it hardly lasted for 5 minutes and then interviewers started with the questions.

2 questions were asked in this round :

1. Given a stream of characters, find the first non-repeating character from stream. You need to tell the first non-repeating character in O(1) time at any moment.

I gave the very first approach of using a hashmap and Dequeue for solving this but the interviewer told he didn't want to do any processing for the result and this approach would require polling the characters from the dequeue if they are repeated. After that, I gave an approach of using a Hashmap where each character will be mapped to a Node of a Doubly Linked List. If we encounter a repeated character in our stream then we can delete that character from the DLL as we can get the node address from the hashmap. The head of the DLL will be our result.

Almost half an hour was consumed by this question.

2. [Print the longest leaf to leaf path in a Binary tree.](#)

I gave the most optimized solution as the time consumed on the first question was high.

Round 4 (F2F Duration= 70-80 minutes: Started with my resume and previous work experience. Questions were asked on OOPS and SDLC(which was mentioned in my resume). After 10 minutes he started with the problem-solving questions.

2 questions were asked in this round:

1. [Sort the LinkedList.](#)

I gave the solution of merge-sort on the linked list.

2. Given that to prepare a certain ingredient we may require another ingredient i.e.
 - To prepare ingredient A we require ingredient B.(A -> B)
 - To prepare ingredient B we require ingredient C.(B -> C)
 - To prepare ingredient C we require ingredient A.(C -> A)

We have to determine if we will be able to prepare the dish or not. So it boils down to finding the loop in the directed graph. After the 3 On-site round, selected candidates were told that they will have a video call round(Bar raiser). The bar raiser round was conducted after a long wait of about a month.

Round 5 bar raiser round= 70-80 minutes: Started with the introduction interviewer then told that he will ask few questions then I have to answer them with an example from my previous company experience. Following that he will ask one coding question.

So the questions asked by the interviewer were :

1. Tell me a situation where the customer was pushing really hard and you have to deliver the results very fast because of the same.
2. Tell me a problem you solved in your previous organization? After that, he asked why did I choose this particular problem only.

After around 30 minutes of discussion, he gave a coding question that was to solve on the code editor that was shared.

1. [We have to rotate an array of size n by r](#). He was expecting an $O(n)$ in-place solution. I gave the Juggling algorithm solution for this particular problem.

After around a week I received an mail saying `Congratulations!` We are pleased to inform you that Amazon is making an Offer for the role of Software Development Engineer.

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Amazon Interview Experience

- Difficulty Level : \n[Medium](#)
- Last Updated : \n23 Sep, 2019

Round 1: Written-test

Two programs to write in any language. The laptop was also allowed to code and then write the final program on paper.

1. Find minimum distance between source and destination in a matrix. See this [post](#) for details
2. Print Binary tree in vertical order. See this [post](#) for details.

\xc2\x0

Round 2: Technical Round

Search element in array having special property.

Special property of an array is each element of it is either +1 or -1 to the previous element. The solution should have time complexity less than linear search.

The interviewer was helpful and giving hints to reach to correct solution. When the solution was finalized he asked me to write code for it covering every boundary case and other scenarios. Code should be production-ready.

I managed to write the code. Here is the [post](#) I found for a given problem

Round 3:Technical Round

Again it was coding round and Interview asked me below two programs

1. Find 5 most frequent words from the given string. I found this [post](#) for a given question but I told hashmap approach to the interviewer and he said this is not the most efficient approach as string can be very big so iterating it twice is not good solution. In the end, I couldn't figure out an alternative so he asked me to write a code for the initial solution only.
2. Reverse a linked list in k blocks. see this [post](#). I was aware of the question so I told him approach. He asked me to write code for the same. couldn't complete it due to time constraint.

\xc2\x0

After Round 3, the HR person said I can leave for the day \xf0\x9f\x99\x81

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Amazon Interview Experience for SDE Internship

- Difficulty Level : \n[Hard](#)
- Last Updated : \n23 Sep, 2019

I attended the pool drive in a college where students from different colleges were present. There were 3 rounds- online round and 2 technical face to face interview rounds.

Online round: There were 28 MCQS and 2 coding questions. MCQs were mostly on data structures, C/C++ outputs, and 3 aptitude questions.

The two coding questions were:

1. Given a string input in the format \xe2\x80\x9cnum1+num2=num3\xe2\x80\x9d. One of the numbers will be given as \xe2\x80\x9cX\xe2\x80\x9d (eg: \xe2\x80\x9c5+X=9\xe2\x80\x9d). Return the value of X.
2. Given a string input in the format \xe2\x80\x9ccar ar2\xe2\x80\x9d (eg: \xe2\x80\x9c9 27\xe2\x80\x9d) which are 2nd and 3rd numbers in Geometric progression. Given n, return nth value of that Geometric progression.

There were around 80 people waiting for an interview from 4 different colleges.

Technical round 1:

The interviewer started by asking about the projects I had done. I explained the recent project I did. He then started asking questions about implementations of some things in my projects. I was asked to write database schema, queries that I used in my web application. I used the firebase database in my android application. He asked a few questions about the storage and retrieval of data in firebase and also the difference between SQL and NoSQL databases and about which one\xe2\x80\x99s the most preferred. I answered them.

He then asked a few questions about cache memory in web browsers and also to write the code in my C compiler project. The questions about my projects went on for 45mins.

Then I was given a simple coding question.

- Find the missing number in an array where the numbers are consecutive and but in an unsorted manner.

I explained my two approaches. He then asked me to write the code for that (You are free to write code in any language unless the interviewer mentions otherwise).

After the first technical round around 30 people were shortlisted for technical round 2.

Technical round 2:

This was completely coding round. He asked optimal solutions for all the questions and write the code.

The questions were:

1. Find the intersection point of 2 linked lists.
2. Print right view of the binary tree.
3. Given a lake starting at 0, ending at 1 and list of drops in the pairs (x, r) where x is the point that the drop falls on the lake and r is the radius of the ripple caused in the lake due to that drop. Find the minimum number of drops required to cover the entire lake with ripples.

The interviewers in Amazon are really chilled out and you can freely interact with them.

They'll even help you if you get stuck anywhere in answering their questions.
After the interviews were done, 4 were selected for SDE role (fortunately I was one of them), 3 for Data Engineer role and 8 for Support Engineer role, out of the 80 that attended the interviews.

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Amazon Interview Experience | On-Campus

- Difficulty Level : \n[Medium](#)
- Last Updated : \n23 Sep, 2019

Amazon visited our campus in the beginning of August. There was no eligibility criteria and 330 students approx sat for the online round.

Round 1 (Online):

It was an online coding round of two questions, and it really depends on your luck whether you'll get an easy question or not (in my case they were easy, while some other candidates got lengthy DP questions).

1. Given an expression in the form of a string $\text{A}+\text{B}=\text{C}$, where any two of A, B, and C were given, you had to find out the value of the third variable.
2. [Given a matrix, calculate the row with maxSum, and column with maxSum.](#)

Around 50 students got through. This was followed by 4 technical F2F rounds, and they asked nothing from my resume, only Data Structures and Algorithms. Interviewers were friendly and kept giving adequate hints, they just want to see how well you can tackle a question.

Round 2:

1. [Given a n by n matrix, rotate each layer of the matrix by one element clockwise](#), so: $\begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \end{bmatrix}$ should become $\begin{bmatrix} 4 & 5 & 6 & 9 & 8 & 7 & 1 & 2 & 3 \end{bmatrix}$. This is to be done in constant space.
2. [Given a linked list, find Kth node from its end in one single traversal.](#)
3. Given a linux cd command like cd a/b/c/./d/..e/ , you have to find the resulting directory, or report error if any.

Round 3:

1. [Given a Binary Tree, convert it into a doubly linked list without using extra space.](#)
2. [Given an array of strings, group all the anagrams together.](#)

Round 4:

1. [Linearise a 2D linked list in one traversal and without using extra space](#). Each node would have a right and down pointers. The down pointer may or may not point to a non NULL node.
2. [Check whether two nodes in a Binary Tree are cousins or not](#) in one single pass.
3. Which sorting algorithm would be appropriate to sort a line of almirahs according to their height so that my effort is minimum. (Selection sort)

Round 5 (Final Round \xe2\x80\x93 Bar Raiser):

Around 16 students qualified till this round. Only one question was asked which would require the application of multiple data structures to solve.

- Given an infinite stream of incoming strings with their timestamps, print a string *only* if it has *not* been printed in the last 10 seconds. A map based approach would not work because it can potentially grow to an infinite size with so many strings.
- So, if the timestamp-string pairs were as follows:
 - 1 \xe2\x80\x93 foo

- 3 \xe2\x80\x93 bar
 - 6 \xe2\x80\x93 foo
 - 11 \xe2\x80\x93 bar
 - 13 \xe2\x80\x93 foo
- It would print: [foo, bar, foo] (foo at timestamp 6 was not printed as foo was already received within 10 seconds in the past)
 - This solution required the combination of both map and a deque.
-

I was rejected after the Bar Raiser, because my round 2 did not go very well. I could not propose a space optimized solution for the Binary Tree question. Your scores across all of the rounds will finally be added up.

Whatever solution you propose, you should try to optimize it as much as you can. And keep your fundamentals of DSA very strong as all Amazon wants in a candidate, is a very good aptitude for coding. And whatever happens is for the best, so don't take rejection in any round very hard, immediately shift your focus toward the next company. You can cry all you want *after* you get placed. \xf0\x9f\x98\x9b

Best of luck.

\xc2\xab

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Amazon Interview Experience for SDE-1

- Last Updated : \n18 Sep, 2019

Date: (14-Sept-2019)

Venue: Global Infocity Park, Perungudi, Chennai

I'd like to share my interview experience @Amazon for SDE-1 with all of my fellow geeks.

Screening Round:

Initially, our resumes were shortlisted by the Amazon Team and we were called for an interview just 2 days before the process. So be prepared at any time.

Round 1 (Online Coding):

There were a total of five questions to solve all the questions time was given 100 mins (later 20 mins were given extra), and the coding platform was www.expanion.com we were asked to bring our own laptops.

1. Print the top view of a binary tree
2. Print the characters which occur more than (or) equal to the value specified sequentially

Input: \r\nzazazbgh\r\n2\r\nOutput: \r\nzzaa

3. Print the maximum prefix

Input: \r\n3\r\ngee, geeks for, geeks for gee\r\nOutput: \r\ngee

4. Remove the element which is less than the next element;
cycle 1: 2<6; so remove 2; result: [4 6 10]
cycle 2: 4<6; so remove 4; result [6 10]

Input: \r\n4 2 6 10\r\n2\r\nOutput: \r\n6 10

5. Asked to print the pattern by user-defined input.

Input: \r\n5\r\nOutput: \r\n*****\r\nnb*****b\r\nnbb****bb\r\nnbbb***bbb\r\nnbbbb*bbbb

But unfortunately, I was not able to proceed to further rounds. All the best for your success guys!!

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Amazon Interview Experience | 1 year Experienced for SDE-1

- Difficulty Level :\nHard
- Last Updated :\n17 Sep, 2019

Location:- Hyderabad

Round 1:

Written Round-

1. Print binary tree vertically.

2. Given matrix of \xe2\x80\x9c#\xe2\x80\x9d, \xe2\x80\x9c&\xe2\x80\x9d, source \xe2\x80\x9cS\xe2\x80\x9d, destinations \xe2\x80\x9cD\xe2\x80\x9d, calculate minimum number of steps required to go from Source to Destination. Can only move in four directions(up, down, right, left)

Round 2:

F2F Interview

1. Given \xe2\x80\x9cN\xe2\x80\x9d houses find number of ways to paint it with \xe2\x80\x9cK\xe2\x80\x9d different color such that no two adjacent houses have same color.

<https://www.geeksforgeeks.org/ways-to-paint-n-paintings-such-that-adjacent-paintings-dont-have-same-colors/>

2. Sliding Window Problem. Given array of N elements and integer \xe2\x80\x9cK\xe2\x80\x9d find minimum and maximum in each window of length \xe2\x80\x9cK\xe2\x80\x9d.

<https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/>

Round 3

F2F Interview:-

1. Knight Tour Problem with infinite Grid and obstructions in the path .

Round 4

F2F(Bar-Raiser)

This is probably the most important round that decides whether you will be offered the job or not. (Solely on this round.)

This round was conducted by 10 year experience employee of Amazon.

Behavioral Questions

- 1.What did you learn from your current organization.
- 2.Situation where you get a higher Priority task.
- 3.What is the toughest challenge that you have faced ?

and some more based on Amazons principles.

1 coding question

Check whether the given tree is complete binary tree.

Round 5 :-

Hiring Manager Round

This was telephonic round.

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Amazon Interview Experience SDE1 | Off-campus

- Difficulty Level :\n[Hard](#)
- Last Updated :\n16 Sep, 2019

Round 1: Online coding + MCQs

MCQ consisted of Data Structures, Algorithms, Code Output of C/C++ snippets (Pointers).

Coding questions:

- Count trailing zeroes in factorial of a number
- Find the minimum height of Binary Tree for a given inorder and level order traversals

Round 2:\xc2\x0F2F Problem Solving

Initially, Interviewer asked current job role and introduction and then start coding questions. In this round, they asked two questions

- Find the square root of number up to 3 precision
- Design queue using stack

Round 3: F2F Problem Solving

In this round also Interviewer asked two coding questions. For the second question, he gave some used cases and explained thoroughly and asked to write production-ready code and some technical questions from Java since I mentioned Java in my resume

- Clone a Linked List with next and random pointer
- Minimum Heap tree
- What is Polymorphism,
- Explain real-life case of Function overloading and overriding
- What are virtual destructor and a private constructor

Round 4:\xc2\x0 Video call on Amazon Chime App

The interviewer asked me to introduce myself and brief him about my job role and contributions. Some questions he asked regarding my company project on which I am working. Later he starts some generic questions like:

- Why do you want to change job?
- Why only Amazon?
- Anything that you had taken lead or gave your ideas to your Lead or Manager

He shared a live screen to write code. He asked me to explain the approach first and time and space complexity

Coding question:

- Find the rank of every element in a stream.\xc2\x0<https://www.geeksforgeeks.org/rank-element-stream/>

I explained him using Insertion sorting but due to its worst time complexity, he asked to think some other way. He helped me in writing code using binary search tree and coding round went well.

Round 5: Bar Raiser

In this round Interviewer checked how technically strong and capable enough to handle any sorts of challenging tasks based on our past works. He asked some generic questions like:

- Why do you want to change job?
- He asked some questions\| seeing my resume
- \|Any critical issues have you resolved? If yes, then how were your approach, resolve, and impacts
- He asked many questions related to Automation Framework that I created using java and Selenium

He asked to solve one code on the live share screen. Firstly, he asked to tell him the approach and what will be time and space complexity and what kind of Data Structure will you prefer.

Coding question:

- Boggle (Find all possible words in a board of characters)\| \|
\|<https://www.geeksforgeeks.org/boggle-find-possible-words-board-characters/>

I explained to him and write code using BFS. Although, it was not the best solution but he convinced.

Result:\| Hard luck not selected. This was my first interview experience with Amazon.
Although, not selected in the first attempt but gain enough confidence for a future interview.

Tips: Mention only those kinds of stuff in your resume which you can explain well. Be prepared with Data Structure and Algorithm and technical questions from the domain where you worked on.

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Amazon Interview Experience

- Last Updated : \n06 Sep, 2019

Round 1: Online test

You have M identical ropes and N identical weights. You want to do an experiment to determine the strength S of the identical ropes, by testing how many weights can be held by one single rope. The strength S of the ropes is defined as:

- 1) If a rope breaks with the first weight, S=0;
- 2) If a rope can hold n weights and breaks at n+1 weights, S=n;
- 3) If a rope can hold all N weights, S=N.

In one test (\xe2\x80\x9ctest\xe2\x80\x9d means to check if one rope can hold an amount of weights), if the rope breaks, you have to take another rope to continue the experiment; if the rope does not break, it can be used for the next test with no problem. If you used up all the ropes but still cannot determine the strength S of the ropes, the experiment fails.

Please write a C/C++ program that, given M and N (M and N are both integers, $M \geq 1$, $N \geq 1$), calculates the minimum number of tests T needed to guarantee you can determine S. Try to optimize the time complexity of your program, and explain:

- 1) What kind of \xe2\x80\x9ctricks\xe2\x80\x9d you have used to optimize the time complexity?
- 2) What is the time complexity without these \xe2\x80\x9ctricks\xe2\x80\x9d and what is the time complexity with these \xe2\x80\x9ctricks\xe2\x80\x9d?

Hint 1: If you have limited number of ropes, you don't dare to take the risk. For example, if $M=1$, your only choice is to increase the weights one by one, from 1 to N, to make sure you can determine S in the worst case. In this case, $T=N$.

Hint 2: If you have lots of ropes, binary search is obviously helpful to calculate the minimum T efficiently.

Example 1: M=1, N=20

Command: calc_n_tests 1 20

Output: 20

Example 2: M=2, N=5

Command: calc_n_tests 2 5

Output: 3

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Amazon Interview Experience (For Experience \xe2\x80\x93 2.8 yrs) | SDE 1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n04 Sep, 2019

Round 1:\xc2\xa0 Written

- Given a Binary Tree, find the sum of all leaf nodes which are at the maximum depths in the tree.
- Find all occurrences of a given word in a matrix of characters by traversing in all 8 directions (<https://www.geeksforgeeks.org/find-all-occurrences-of-the-word-in-a-matrix/>)
- Given an unsorted array, find a triplet, whose sum is K.

After this there were few design rounds for sde2 candidates, to which I didn\xe2\x80\x99t appear.

Round 2: F2F

- Given an unsorted array, find the Kth smallest element in the array.
- Given a matrix, rotate by 90 degree anti-clockwise (inplace)

Round 3: F2F

- Given a sorted doubly linkedlist, find triplets, whose sum is K (without extra space ofcourse)
- Given 2 Binary Trees, check if one Binary Tree is a SubTree of the other

Round 4: F2F

- Project specifics, with open source contributions(stackoverflow) discussions
- given few scenarios, asked to figure out the approach to solve with few algorithms
- Questions related to Amazon Leadership Principles (be prepared with real-time good examples in the past)

Round 5: F2F

- Find two numbers in a BST, whose sum is K (using two pointers on the tree itself) (also asked if I can do without using stack i.e, Morris Traversal explanation only)
- Given a Binary Tree, find the last level upto which the tree is a Full Binary Tree and return that level

(In all these rounds, working code was needed and it should cover all the edge cases)
(You have to speak out loud to make them understand your thought process)

Round 6: F2F\xc2\xa0

HR Round (usual HR questions)

\xe2\x80\x94 contributed by Ashish Subudhi

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Amazon Interview Experience SDE1 | Off-campus

- Last Updated : \n02 Sep, 2019

Round 1:

Online coding test comprising of three coding questions.\xc2\x9a0The coding problems were:

- Find next greater number with same sets of digits
<https://www.geeksforgeeks.org/find-next-greater-number-set-digits/>
 - Maximize the number of 1s by flipping a subarray
 - Find minimum operations required to make an array sorted:
<https://www.geeksforgeeks.org/minimum-number-of-swaps-required-to-sort-an-array-set-2/>

Round 2:\xc2\xa0

She asked two coding questions and asked me to dry run test cases maintaining time and space complexity. The coding questions are:

- Find the sum of all nodes present in each level and finally the print the product of all sums found at each level
 - Find row having maximum number of one in 2D sorted binary array
<https://www.geeksforgeeks.org/find-the-row-with-maximum-number-1s/>

Round 3:\xc2\xa0

This round is completely technical and no coding questions. After the introduction and questions from my current job role, he asked to design portal and database schema for a given input.

After doing so he asked questions from the database\xc2\xa0 like

1. What is the difference between master and transaction table
 2. What is a cursor, trigger in the database, stored procedure, ACID property
 3. How to improve database performance (indexing in the database)
 4. \xc2\x0JSON and difference between HTTP and HTTPS

Round 4:\xc2\xa0

Initially, I gave an introduction and details of my current job and works then he asked one coding questions and a few technical questions from OS.

1. Print all nodes which are at K distance from a particular node
<https://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree/>
 2. What is thrashing, page fault, System call, kernel
 3. Memory allocation technique, paging, segmentation.
 4. How a big size program can be efficiently loaded onto RAM and virtual memory concept.

Round 4:\xc2\xa0 Bar -Raiser Round

It was an online video call interview using Amazon Chime and was taken by Manager from the US.

1. He asked to explain any project which I am proud of and some cross-questioning happened while explaining the project.
2. He asked any critical issues do I resolved. If yes, then how and where and what the impacts
3. Any innovation and challenging work so far
4. One coding question on the live code sharing screen. He asked to explain the approach first and then told to write code
https://www.geeksforgeeks.org/trapping-rain-water/
5. Finally, Why Amazon?

Tips: First and foremost, you should explain your current project and works very smoothly and clearly while giving an introduction. While solving coding questions make sure it should be efficient and cover all corner cases. Data structure and coding is must and technical questions depend on the role and team.

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Amazon Interview Experience for SDE 1- Off campus

- Difficulty Level :\nMedium
 - Last Updated :\n02 Sep, 2019

I applied off campus through referrals that are rolled out frequently and during one of the hiring drives, I got a mail for interviews. They had the following things planned.

Technical\xa0rounds\nc2\nc0n Competencies:\xc2\xb7Coding, Problem solving, Algorithm, Data Structures, Computer science fundamentals

Each round is an elimination round. One important thing for all the rounds is to be aware of Amazon's principles and their STAR (Situation, Task, Action and Result) method to answer questions.

Written Test:\xc2\xa0

They will have 3/4 sets of two questions and you will be given one of the sets. For me the questions were:

1. Reverse a linked list
 2. Find maximum from all the subarrays of size K

Try to write the optimised solution and give in as much detail as possible by writing comments. I even mentioned the complexity of both the codes. There were around 100 people and they filtered out around 65-70% of the people after this round.

Round 1:

This round started with my introduction. Then he asked two technical questions of moderate difficulty based on arrays primarily. One of the question was:

To find an element in a sorted and rotated array.

The other question was around arrays and map and was doable. Then he asked me about one of my projects and how I showed ownership there. This round lasted for around an hour.

Round 2:

I was told that since my previous round was really good so this round will be a shorter one. He asked me just one technical question around trees. The question was to find the right view of the tree but he didn't give out all the details in the beginning. There was a condition that the vertical depth of the nodes have to be considered too. The node with the largest vertical depth on a particular level of a tree had to be considered. I used a hashmap and a queue for solving this and he was satisfied with my approach. This round lasted for around 30 minutes. They filtered a lot of candidates after this round.

Round 3:

This around lasted for around 2 hours and they asked questions from every possible topic, coding, theory, behaviour, projects and what not. There were two interviewers, one of them was a

shadowing interviewer so she was just observing me. The coding question asked were:

1. We have a company where unique alias has to be allotted to all the employees and an alias is the smallest unique prefix of the employees' name. Here, same alias cannot be given more than once say for 6 Tanyas, alias would be T, Ta, Tan, Tany, Tanya, Tanya_2 respectively and for the last Tanya since the complete name has been taken before so the alias would be the name appended by the number of times the alias has been repeated. I suggested the use of Tries with storing the count for every alias that is allotted and he asked me to return the alias for every new employee who comes.
2. Find the maximum length of subarray where the product of array elements = the LCM of those elements. I suggested him the use of GCD here because the GCD would be 1 for the elements that satisfy this condition. He gave me a range so the final solution that I proposed was to store unique prime factors of all the numbers before and then find the range in a single traversal, keeping track of the start and end.

He then asked me questions around Networking. How does a server respond to a client's request and how is the connection established. Then I was asked questions around cryptography and the Digital Signature algorithm. He then asked me why Amazon and why not the other companies that you have offers with.

Round 4:

This round was scheduled after 4 days and it was VC round. This round was a bar raiser round so they asked easy technical questions and was focused on principle based skills as well. He started off with asking the condition of a tree being balanced and then asking the code for it. Then he asked me for code to check if an array is a subarray of other array. He didn't want the usage of extra space. He asked me about the sorting algorithms that I know of and pointers about each. Then he asked me about deadlock and how can it be resolved using code. Then another interviewer joined and they asked about situation where I faced deadlock and how I overcame that. I was asked about situations where I took the ownership and stuff like these. Remember their principles and build your answers around them. This round lasted for around 40 minutes.

Verdict: Selected

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Amazon Interview Experience (On-Campus) for SDE1 FTE/6M Intern

- Difficulty Level :\n[Medium](#)
- Last Updated :\n02 Sep, 2019

Round 1: Online Coding + MCQs

Interview Date: 29th July, 2019.

Platform : mettl

28 MCQ and 2 coding

MCQ consisted of Data Structures, Algorithms, Code Output of C/C++ snippets (Pointers).

Coding questions:

1. Find Mean, Median, Mode from an array.
2. Rearrange array such that summation of difference between consecutive pairs is minimum, and return that summation.

Round 2: F2F Problem Solving

The interviewer directly moved to the questions part.

- [Maximum sum such that no two elements are adjacent](#)

I explained DP approach with $O(n)$ time and $O(1)$ space. He was satisfied with it and I coded it on paper.

- [Peak element in an array](#)

Initially, I told linear search approach but he told me to do better. After some pen-paper work I realised it can be done with Divide and Conquer approach. So, I told him and he asked me to code the same.

Round 3: F2F Data Structures

This interviewer asked me to introduce myself and also asked how did my last round go. Then he straight away moved to problems.

- [Clone a linked list with random pointer:](#)

Initially, seeing this problem I got dumbstruck, and was not able to think of anything. But after some thinking I told him HashMap based solution. As this was $O(n)$ solution, he asked me to optimise further in space complexity. It took me around 5-10 minutes, to come up with \xe2\x80\x98changing the links\xe2\x80\x99 solution. He seemed quite happy with the solution. And asked me to code.

I really suggest to look at this problem as this required very unique and out-of-the box thinking.

- [Rotate Matrix Inplace:](#)

This was simple implementation based problem, and he wanted space optimised approach, I explained the same. He didn't ask me to code it.

Round 4: F2F CS Fundamentals

This was the longest round lasted for 90 mins. I really admire this interviewer's way of asking questions.

This interviewer was a very cool person. First we did introduction. Then he told me to be very comfortable, he said this will be discussion round, where we will discuss about Computer Science basics, but in detail.

He asked me all the questions in very different manner. Out of all listed below topics, HE explained me what the concept is, and asked me WHY, WHEN and WHERE do we use this. Basically, he wanted to know how deeply I understand basic fundamentals.

- He explained me what interface is and asked me why, when and where do we use it? We discussed on it in detail giving practical examples.
- How would you implement printf() function?
- What is pass by value and pass by reference in Java?
- He explained me public, private, protected. Asked why, when and where do we use it? I explained it by giving practical examples and giving several class definitions.
- We moved to database part. He explained me what Normalisation is, and again asked me why, when and where do we use it. I explained it again giving examples, and he was really happy with it.
- Explain ACID properties. I explained it in detail. When I said that NoSQL databases didn't have these properties. He asked whether I know about NoSQL, I said yes. Then we did discussion on SQL vs NoSQL.
- What do you understand by unstructured data? Why NoSQL for those kind of data?
- He asked to do trade-off between SQL and NoSQL using practical examples. Why, when and where will you use SQL and not NoSQL and vice versa. I gave him satisfactory answer. He was happy with it.
- He then asked me to time-space complexity analysis on Quick Sort, Merge Sort. Asked me when worst, best and average case arises, asked me to give example.
- What do you understand by balanced BST? Why it is used?
- He then asked can we do better than Binary Search in searching in an array. I gave him several approaches: HashMap, Ternary Search, [Binary Search started from left](#)

After long discussions on various topics he asked if I had any questions. I asked him few questions regarding work culture at Amazon.

Round 5: Bar Raiser

This was a phone interview, conducted after 3.5 weeks of onsite, and was done on AWS Chime. The interviewer was very experienced person having 20+ years of experience.

He asked me to introduce myself. When I mentioned about my internship, he asked me what kind of project I worked with, and asked you have to code features which you implemented right now. I tried to code it, but as I had no documentation in front of me and no IDE was there, I was not able to do it well.

After that he asked me one coding question. [Connect nodes at same level binary tree.](#) I said level order traversal using queue. Asked me to do it recursively. I gave him recursive approach and then he asked me to code it.

In the end we discussed on working at Amazon and leadership principles.

I really suggest, Phone Interviews are different than in person F2F interviews. It takes different set of skill set to crack/do-well in this kind of interviews, which I feel is the reason of my rejection.

Overall it was a good learning experience.

Thanks Geeksforgeeks.

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Amazon Interview Experience SDE1| Off-campus

- Last Updated : \n30 Aug, 2019

Round 1:

Online coding test comprising of two coding questions and 20 MCQs. The coding problems were:

- Rotate a matrix by 90 degrees.
- Longest increasing subsequence.

Round 2: Technical 1, he asked me two questions:

- If a number is written on a paper and that paper is rotated by 180 degrees, will the number remain the same?
- Merge two sorted arrays to get a resultant sorted array. Sub questions were to get the resultant array into increasing as well as decreasing order.

Round 3: Technical 2, he also gave me two questions. He first asked me about my strong areas. I accidentally told him my weak areas too. That was my blunder. Don't ever do that.

- If there are files that are dependent on each other and I need to compile them. In what order should they be executed that all of them would get successfully compiled? This was basically topological sort.
- $2x+3y+7z = n$ Find all possible combinations of x, y, z such that they satisfy above equation. I had suggested two approaches but he wanted the solution of lesser complexity. The optimized solution is obtained by dynamic programming. I couldn't answer it using DP.

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Amazon Interview Experience (SDE 1 | 80% 2 yr exp)

- Last Updated : \n29 Aug, 2019

Round 1: Pen and paper-based 2 questions

1. Given a linked list reverse every node at even places. Eg

Given list - 1-2-3-4-5\r\nOutput list - 1-4-3-2-5

2. Don't remember, but somewhat based a tree. It was an easy question.

Round 2: Face to face (1 hour) 2 interviewers

1. Given a tree find a way to serialize and deserialize it back.
2. Another tree-based question
3. What is Cache? Difference b/w cache and hashmap.

Round 3: Face to face (1 hour) 2 interviewers

1. Zig zag level order traversal of a tree.
2. BST question. convert given array to BST.
3. Project discussion and questions around it like why MongoDB and not Elasticsearch or DynamoDB.

Round 4:

1. Why do you want to join Amazon?
2. The most challenging project you did until now?
3. What would you do in case of conflict on your recommended design with someone else?
4. DS question based on the tree.

Round 5:

1. Explain the previous project.
2. difference b/w Mongo vs Mysql. In this, he kept going on deep, one after another. So, better you are prepared at your best.
3. Multithreading. Concept of mutex, semaphore.
4. Write a program to add 2 large numbers. Handle negative also.

Finally got an offer after a week.

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Amazon Internship Interview Experience

- Last Updated : \n29 Aug, 2019

I am from IIT Kharagpur. Last week Amazon came to select for the 2-month summer Internship program. At first, there was an online test to shortlist candidates for interviews. The test contained 5-7 debugging questions, 30 aptitude questions, and 2 coding questions.

Two coding questions:

1. Given an array and a number. We have to find the maximum sum of two numbers from an array which is less than the given number.
2. <https://www.geeksforgeeks.org/program-round-robin-scheduling-set-1/>

They selected 120 students for interviews.

In my interview 2 questions were asked to code with pen paper:

1. Given 2 N-ary trees, check if they are mirror of each other or not.
2. Given 2-D array of characters, check the given words are there in the array or not. (crossword type.)

I did 1st one correct and for the second one I could not complete it but the interviewer was convinced with the approach. I got selected for the summer internship at Amazon.

I would like to thank Geeksforgeeks. As during my preparation, I always found it easy to surf it. The collection of must-do coding questions is very good and helps you build confidence.

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Amazon Interview Experience | (FTE) On Campus

- Last Updated : \n 29 Aug, 2019

Amazon visited our campus (BIT Mesra) on 10th August 2019 for FTE and a 6-month internship.

Process: 1 online coding round, 4 F2F Technical Interviews.

Online coding round:(90 minutes)

The test was conducted on mettl platform, on 7th August 2019.

There were 2 coding Q and 28 MCQ\xe2\x80\x99s.

- Given an array find the inversion count.
- Postfix evaluation.

MCQ\xe2\x80\x99s were based on c++, DSA, operating system, input/output.

Coding Q\xe2\x80\x99s were easy, hence MCQ\xe2\x80\x99s played a major role in Round 1 shortlisting.

30 students were shortlisted for the further interview process.

Round 1:(90 minutes)

He went through my resume and asked me to explain one of the projects I mentioned, hence the first 15 minutes were spent on project discussion.

After that, he asked 2 coding Questions:

- Given an array which is rotated n times from left or right, find the largest element of the array. (**Expected time complexity O(log N)**)
- The interviewer asked this Q in typical Fashion, basically, the Q was similar to finding the min element in a given stream of numbers.

He was initially checking my approach. After that, he asked me to code on paper.

The interviewer was really helpful, I got stuck once while implementing but he gave me a hint and after that, I was able to code correctly handle all corner cases.

Around 20 students were selected for the next round.

Round 2:(60 minutes)

This was purely coding round. Initially, the interviewer introduced himself and after that asked me to give a brief introduction of myself.

He asked me 3 coding Questions:

1. <https://www.geeksforgeeks.org/construct-bst-from-given-preorder-traversal/>
2. <https://www.geeksforgeeks.org/pairwise-swap-elements-of-a-given-linked-list/>
3. <https://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree/>

I was able to solve all the three problems optimally and he asked me to code them on paper.

After that, he asked me another coding Q(extension of 3rd Q),

To print all nodes which are at a distance of given range [a, b].

He just wants to check my approach for this Q, and I was able to crack the same.

The interviewer was looking for the most optimized approach for all the questions.

After this Round, 12 students were selected for a 6-months internship and 4 were shortlisted for further rounds.

Round 3: Technical round, This round lasted for nearly 2 hrs.

The round started with a project discussion(20 mins).

After that, he asked me a few coding questions:

1. Modular exponentiation.
2. A simple dynamic programming Q(I don't remember the actual Q)
3. Implementing queue from 2 stacks and vice versa.
4. Merge sort, quick sort, heap sort.

There were a few more Q based on Data structure, which I don't remember.
After that, he asked me some theoretical questions on c++, as I mentioned in my resume.

Then he asked me the concepts of oops. Some of the questions that I remember are:

1. What is dangling pointer?
2. Reference variable VS pointer.
3. Garbage collector, memory leak.
4. Virtual function and polymorphism.
5. overflow and underflow etc

Finally, the interviewer shared his experience in Amazon and asked me if I have any questions to ask.

3 of us were selected for the next round.

Round 4: (Bar Raiser) This round was held on Amazon chime, The round lasted for 90 minutes.

1. Tell me about yourself.

After that, he asked me to explain my machine learning project, I gave him a detailed explanation of the same. Luckily the interviewer had worked on some ML projects, so explaining my project logic was easy to him. There was a 30 mins discussion on my project which involved several cross-questions like, why CNN, what technology I used, how I trained such a huge dataset, discussion on the model that I implemented, how did I analyzed and preprocessed the images, etc. After that, he asked me for the recent blogs I have read. After this he asked a coding question:

1. Given a Linked list find if there is a loop in it, if yes find the starting point of the loop and also the total nodes that are outside the loop.

I gave him 3 approaches to solve this problem. He asked me the proof of the Floyd's cycle algorithm. I did the proof by writing all the required diagrams and equations and he was satisfied with it and then I wrote the code.

Result: Selected for FTE

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Amazon On-Campus Internship 2019

- Difficulty Level : \n[Basic](#)
- Last Updated : \n28 Mar, 2022

Round 1:\xa0

This was a coding and aptitude round. It was divided into 3 sections- quants, logical and aptitude and coding.\xa0

There were 30 aptitude questions which were simple. Anyone could score full in this with little precaution. Answers to some questions were dependent on each other. So, answer carefully.\xa0

There were 20 quants which were also simple and easy.\xa0

The coding section had 2 questions which were to be done in 1 hr and 30 mins.\xa0

First question was a simple array based question on the concept on Window Sliding.\xa0

Second question was to find the avg waiting in round robin scheduled algorithm.\xa0

There were around 400 applicants.\xa0

Round 2:\xa0

Around 40 people were selected for this round. The list was further extended. This was a technical interview round\xxa0

and continued till 11 pm at night. Majority of the questions were based on trees, resume and heaps. Some questions were based on stack and queue. Questions from OS and DBMS were asked by some interviewer.\xa0

Finally, They took 13 students for internship.\xa0

Advice:\xa0 1. Be thorough with your resume and your Projects.\xa0

2.Put Machine Learning or Artificial Intelligence in your resume only if you know very well otherwise your interview may get screwed doesn\xe2\x80\x99t matter how good you are at coding.\xa0

3.I have seen people knowing just theory of coding and little application getting selected by their patience confidence and honesty.\xa0

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Amazon Interview Experience | On-Campus

- Last Updated : \n27 Aug, 2019

Round 1: (Online)

Though this was an On-Campus Internship at my Institution- Birla Institute of Technology and Sciences, Pilani, K.K. Birla Goa Campus. But even then, we had to apply for the internship on the Amazon Jobs site. The form on teh website required us to attach a resume and fill out a few general questions related to the candidate\xe2\x80\x99s academics, etc.

Then the very same day, we had been sent the test link and required us to take the test in the next couple of days. But the Placement Unit on our campus made us give the test in the Computer Centre at a given time slot.

It had around 7 questions \xe2\x80\x98debug the following sets of codes\xe2\x80\x99 where the wrong code and the a description of what the function should do was given. We were given 15 minutes to finish this part. Students had to change the given (very basic changes, ex: 1. Changing the sign of \xe2\x80\x98<\xe2\x80\x98 to \xe2\x80\x98>\xe2\x80\x99 in the function, 2. Changing the \xe2\x80\x98=\xe2\x80\x98 sign to \xe2\x80\x98==\xe2\x80\x98 sign) code and submit it (after testing). There were around 25 or so questions based on logical reasoning (they were very easy). We were given 40 minutes for this part. There was a set of feedback questions asked to every student after this section.

The next section had a couple of coding questions.

Question 1. Pair with largest sum less than K in the array.

The solutions with $O(n^2)$ time complexity were also accepted.

<https://www.geeksforgeeks.org/pair-with-largest-sum-which-is-less-than-k-in-the-array/>

Question 2.\xc2\x96 Round Robin Scheduling (Finding Average Wait Time)

The second question was to find out the average waiting time of processes in Round Robin scheduling, and it can solved with the help of queues.

<https://www.geeksforgeeks.org/program-round-robin-scheduling-set-1/>

After this section, there was another feedback section which was compulsory to fill.

After the second feedback section, there was one final section on Psychological Questions which were not timed.

We were also informed that anybody who would have not finished the feedback sections, would not be selected by default.

The only problem I had with this test was that we were told that the test would be held from 7:00 PM to 8:30 PM, and most of the people were still not finished at 9:25, you have to understand that there was another company\xe2\x80\x99s test that was scheduled at 9:30 at the same location.

\xc2\x96

Round 2: Personal Interview (One-to-One)

Of the students who had writted the online test, 60 students had been selected for the Interview round which was held a couple of weeks later. There were 14 different interviews that were going to take place at once. We were also informed before-hand that only one round of interviews would be conducted.

From what I heard, the questions were pretty simple. During my interview, I was asked:

- To introduce myself and talk about my projects. The interviewer asked me the core CS subjects I have finished. Then he had a few basic questions on the same subjects.
- He started the Data Structures and Algorithms questions next.
- One question was \xe2\x80\x9cWhat is cache memory, which data structure would you use to implement it?\xe2\x80\x9d.
- Given an array of integers and a number K, find the number of distinct integers in every contiguous subsequence of size K.
- Given an array of Zeros (0) and Ones (1), find the maximum number of ones that can obtained in a contininous fashion if you are allowed to switch one zero to a one.\xc2\xaa
<https://practice.geeksforgeeks.org/problems/maximize-number-of-1s/0>. An easier reproduction of the same problem where M=1.

Then he said that he does not have any other questions for me and he was done from his side. I took that opportunity to ask him about work in Amazon, etc.

\xc2\xaa

That was it for the selection process. A few hours later the list of selected students was announced by our campus\xe2\x80\x99 Placement Unit.

Result: Selected!

Thank you, and all the very best.

\xc2\xaa

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Amazon Summer Internship Interview Experience | On-Campus

- Last Updated : \n 27 Aug, 2019

Amazon was hiring from my college The LNM Institute of Information Technology, Jaipur for Full Time Employment (FTE) + Semester Long Internship (SLI) for the final year and Summer Internship for the pre-final year students.

Online Assessment:

The online assessment was scheduled on 6th August 2019 and conducted on AMCAT. It consisted of 4 rounds and the programming languages allowed were C, C++ and Java.

Round 1: In this round we had to debug, not so much inappropriate code in our favourable coding language based on given output and explanation. It consisted of 7 easy questions and 15 minutes were given to complete this task.

Round 2: It was the logical reasoning round and were given 24 questions with time limit of 35 minutes.

Round 3: The coding round consisted of 2 questions with time limit of 70 minutes.

The first question was an easy one, which required us to search in a 2D Array(matrix) and return the co-ordinates of desired value as a pair.

In the second question, I was given a grid consisting of 0, 1 and exactly one 9. The task was to find whether 9 is reachable from (0, 0) co-ordinate by only travelling along the cells containing 1. I solved it using DFS approach. BFS or recursion can also be used.

Round 4: It consisted of questions based on work ethics and was a serious weightage. The students who had done the first 3 rounds very well but did not respond to the questions properly were not selected.

The results of the online round was declared a day after and about 50 were selected for the next round from about 250 students who gave the online round.

Personal Interview:

The next round for the hiring procedure was a face to face interview with the recruiters, scheduled at 10th August 2019.

The interviewer was a nice guy, first he introduced himself and then asked me to briefly introduce myself. After he began with the technical questions:

1: He gave me an array consisting of strictly increasing numbers to a point, followed by strictly decreasing numbers, for eg: 1 4 7 10 9 4 2 0, the task was to find the maximum in the array.

Find the maximum element in an array which is first increasing and then decreasing?

\xe2\x80\x94GeeksforGeeks

Given an array of integers which is initially increasing and then decreasing, find the maximum value in the array. www.geeksforgeeks.org

2: The question was to decompress the compressed string.I solved it using a stack of characters.The interviewer asked me my approach and after that he asked me to pen it on a paper.He then tried a few test case on the code and was happy with my approach.

Former Coding Interview Question: Compression and Decompression?\xe2\x80\x94?Google Tech Dev Guide

You\xe2\x80\x99re invited to check out all the different learning resources in the guide: problems and projects, former Google\xe2\x80\x9a\x80\x96techdevguide.withgoogle.com

3:Given a linked list\xc2\xa0, my task was to check whether the linked list was pallindrome or not.I began with solution using O(n) extra space\xc2\xa0, but after discussing a bit with the interviewer I was able to get to the inplace solution with no extra space\xc2\xa0, he then asked me to pen down my approach and he tried the code against 2 cases and my code was able to pass them with slight edge cases being missed, but while discussing my approach further I was able to rectify the errors and he was satisfied with the approach.

Function to check if a singly linked list is palindrome?\xe2\x80\x94?GeeksforGeeks

Given a singly linked list of characters, write a function that returns true if the given list is a palindrome, else\xe2\x80\x9a\x80\x96www.geeksforgeeks.org

4:Some basics about BFS and DFS were asked\xc2\xa0, like difference between them and their uses.

After the coding questions, he switched to questions from computer science fundamentals, he began with the concept of OOPS, explanation of polymorphism\xc2\xa0, difference between function overloading and overriding.

Next, he switched to basics of Computer Networks and Operating Systems and asked some practical world applications of the concepts of threads and processes.At last he asked me about ACID properties from DBMS.

After all these he asked whether i have any question for him and he told me about his hometown and experience at the company as a software developer.

The results were announced on the day of interview itself in the evening and 14 students were selected for the summer internship out of 50 shortlisted for the interview and I was lucky enough to get selected.

Cheers, Happy Coding \xf0\x9f\x99\x82

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Amazon Interview Experience | On Campus for Internship

- Last Updated : 26 Aug, 2019

Hello Geeks, recently Amazon visited our campus for Internship and Full time and I appeared for the **Internship Interview of Amazon**. What my personal experience says is that explore the problem first and then think progressively about possible solutions. Once the efficient approach hits you, think whether its possible to further optimize it or not, instead of trying to jump to right solution straight away. Check for all the corner cases and most importantly don't remain completely blank during your conversation with the Interviewer but keep on telling the tentative solutions that are coming to your mind.

My entire process consisted of 2 rounds

- Online Round
- F2F Interview

Online Round:

Our online round was quite different than usual pattern followed by Amazon. We had three sections.

Section 1: 7 code debugging MCQs which were quite simple and required basic knowledge of any programming language but the constraint was only the time limit (10 minutes) and there was no negative marking.

Section 2: 24 MCQs based on aptitude and quantitative reasoning. They were also pretty easy with no negative marking and time limit of 35 minutes.

Section 3: 2 coding questions and time limit 45 minutes.

Question 1: Search in a row wise and column wise sorted 2D matrix

```
Input : mat[4][4] = { {10, 20, 30, 40}, {15, 25, 35, 45}, {27, 29, 37, 48}
```

Question 2: Round Robin Scheduling with different arrival times

You had to return the average waiting time for CPU to complete processing of all n processes.
(Processes were sorted according to Arrival time.)

```
Input: arrivalTime[] = { 0, 1, 2, 3 } \r\n      burstTime[] = { 10, 4, 5, 3 } \r\n      quantumTime = 3 \r\nOutput: Average
```

The three sections were followed by a feedback form which was a sort of HR round. This feedback too had a contribution in shortlisting students. So, I recommend to be concerned and a bit fair while telling about yourself through those feedbacks..

Face to Face Interview:

The Interviewer asked me to introduce myself. Then he asked few questions based on my CV and questions of CS core subjects like OS, DBMS, Computer Networking and concepts of OOPs. Then he asked me 3 questions of data structures and Algorithms.

Question 1: Check if two nodes are cousins in a Binary Tree

He asked me to write code in O(n) and traverse tree only once. You need to consider that case too when one or both of the given nodes is/are not there in tree.

Question 2: Given a sorted array where all elements are repeated twice and only one element is present once. You are required to find that unique element. The instant approach that struck me was returning xor of all elements. This was O(n) approach. He asked me to optimize it. Then I gave O(logn) solution based on modified binary search.

Question 3: In a 2D array of integer, 2 denotes wall, 1 denotes zombie and 0 denotes human. Next day zombies turn adjacent human beings into zombies. A zombie is adjacent to the human one block above, below, left and right. Zombie cannot cross a wall. Find out how many days does it take to infect all human. If some human never get infected, return -1.

```
Input 1: mat[4][5]={ {2, 1, 0, 0, 0}, {2, 0, 2, 2, 0}, {1, 2, 0, 0, 0}, {1, 1, 1, 1, 1} }
```

Approach: First scan whole matrix and store position of all zombies in a queue. All these elements in queue represent level 1. and now apply bfs over that queue and for each level increment count of days by 1. After applying BFS, if there is no human left, return count of days, else return -1 as all humans cannot be converted to zombies.

Code Link: <https://ide.geeksforgeeks.org/M8HPFWNxRI>

Then he asked me if I had any questions. I asked him about the type of projects we have to do there and how these data structures and algorithms and OS, DBMS subject knowledge are applied in real scenarios in handling their millions of users efficiently. He gave example of their recent change in data organisation with trees and started elaborating entire-work process at Amazon some of which I could hardly understand.

I was finally hired for the Internship at Amazon. I would like to thanks Geeks for Geeks which helped me a lot in my preparation.

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Amazon Interview Experience for Summer Internship 2020(On-Campus)

- Difficulty Level :\nEasy
- Last Updated :\n26 Aug, 2019

Recently Amazon visited IIT(ISM) Dhanbad for hiring interns.

Round 1:

This was an online assessment test. The test consisted of three sections.

- 1). **Debugging:** There were 7 C++ programs to be debugged. This part was very simple.
- 2). **Aptitude:** There were 24 aptitude based problems. The time limit was 35 minutes. The problems were ranged from cake-walk to easy.
- 3). **Coding** Section: This consisted of 2 coding problems. The time allowed was 70 minutes.

The first problem was:<https://www.geeksforgeeks.org/search-in-row-wise-and-column-wise-sorted-matrix/>

The second problem was based on Round Robin Scheduling. Given n processes, their arrival times and burst times, it was required to calculate the average waiting time using Round Robin scheduling.\xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 The Round Robin scheduling was not explained in great detail in the problem, hence a lot of students failed to solve the problem. I was well aware with the working of Round Robin scheduling, so \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 was able to solve both the problems and thus made it to the interviews,

Round 2:

There was only one technical interview and no HR round.

The interviewer was very friendly. The interview started with discussions on the recent projects I was part of. The discussion lasted for about 15 minutes.

He asked me if I was aware of page faults in Operating Systems and asked me about the various page replacement algorithms.

Then he asked me about the LRU cache. I was told to implement its code.\xc2\x9a0\xc2\x9a0<https://leetcode.com/problems/lru-cache/>

Then he asked me about cycle detection in a directed graph. I had to implement its working code on paper.

Then I was asked to implement the code for\xc2\x9a0<https://leetcode.com/problems/best-time-to-buy-and-sell-stock/>.

I was able to solve and implement all the problems and was selected for the internship.

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Amazon Summer Internship Interview Experience (On-Campus)

- Difficulty Level : \nMedium
- Last Updated :\n26 Aug, 2019

Round 1: Online Round (2 hrs)

Online Round was divided into 3 sections.

1. This section had 7 questions. Parts of code were given and we were asked to debug them according to the expected output. These were easy questions and anyone with little knowledge of programming can solve them.(15 mins)
2. This section had 24 questions comprised of basic logical reasoning questions.(35 mins)
3. There were two coding questions in this section.(70 mins)

- Given a matrix sorted in row-wise and column-wise manner, check whether given element exists in the matrix. Hint: Use binary search for every row. Time Complexity O(nlogn).
- Find average waiting time of given processes executed in Round-Robin manner with given time quantum. <https://www.geeksforgeeks.org/round-robin-scheduling-with-different-arrival-times/>

Also, after the completion of online round there was a post-contest survey. You must fill out this survey fairly.

Round 2: Face-to-face Interview (1 hour)

At first he asked me to introduce myself. You can brag about things you have done since your childhood but that is not something any interviewer wants to hear. He is only interested in your technical development in recent years. Try to focus on what you have learned and accomplished in past couple years (only technical parts).

After the introduction he asked me about my project, its functionality and my contribution in it.

Then he asked me 2 programming ques:

- Given an array of number of coins in different houses, find the maximum sum you can obtain by adding equal amount of coins from a sub-array. Hint: <https://www.geeksforgeeks.org/the-stock-span-problem/>
- Given an array and a value k, you have to find maximum in all different sub-arrays of size k. Hint:\xc2\xa0<https://www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/>

I would suggest everyone not to dive directly into final solution. Instead explain the interviewer all the different possible solutions starting from worst-case to best-case time complexity. This suggests the interviewer that you have proper knowledge of the given topic. Another advice don\xe2\x80\x99t start coding directly, at first propose an algorithm that you think is precise and then analyze your algorithm (time and space complexity) and then start coding. Don\xe2\x80\x99t miss the corner test-cases, no matter how good you are it can happen to anyone, better safe than sorry.

After programming questions the interviewer asked me questions related to CN, OS, DBMS and OOPS concept.

In CN he asked me to explain everything that happens in the background after you click on a link.

In OS he asked me everything about Paging, from its need to all the concepts related to it.

In DBMS he asked me about ACID properties along with examples.

Then he asked me about OOPS concept. Remember examples are important.

Then he concluded the Interview by asking me if I have any questions. This is Important you must prepare at least one question in advance. I asked him if I need to prepare anything in advance for the internship if I get selected.

Last but not least some important preparation stuff:

<https://www.geeksforgeeks.org/data-structures/>

<https://www.geeksforgeeks.org/fundamentals-of-algorithms/>

<https://www.geeksforgeeks.org/Amazon-topics-interview-preparation/>

Good Luck to everyone!!

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Amazon Interview Experience for SDE1

- Difficulty Level :\n[Hard](#)
- Last Updated :\n28 Aug, 2019

Online Round:

Test Pattern: 20MCQ and 2 coding question

Time : 1:30 hours

MCQs were based on operating System, data base management system, computer networks, data structures and standard questions of computers. MCQs were of intermediate level. one can easily do all the questions correctly if has basic understanding of topics.

Coding Problems:

1. It was a easy question to reverse a string taken k length at a time. i.e. Input:
String=\xe2\x80\x9damazoninterview\xe2\x80\x9d, k=5\xc2\xa0 \xc2\xa0Output:
\xe2\x80\x9cozamaetninweivr\xe2\x80\x9d
2. It was a basic graph problem. [click here](#)

F2F Interviews:

There were 4 rounds and all rounds were technical round.

Round 1:

It started with general introduction and then interviewer told me the process of interview as 2 questions will be asked and first you have to tell the approach and be able to write the code included with space and time complexity.

first question was to count the number of set bits in a given range (a, b). the question was really easy and i was able to do it in time complexity $O(n * \log(d))$ and space complexity $O(1)$. and he was satisfied with the answer.

second question was, there is an infinite grid in first quadrant and a sequence of coordinate of first quadrant in particular order and one can move in all 8 directions from a point in grid . you have to calculate the minimum number of steps to reach the last indexed coordinate of sequence following the same order as sequence. At first i explained BFS approach but he told to reduce the time complexity and then i was able to do it in $O(n)$. (explanation: move to an intermediate node diagonally and then take the manhattan distance).

[infinite grid problem](#)

at last we discussed about amazon for 10 minutes which is much needed for a good impression.

Round 2:

It started with introduction and projects i have done in college and it goes for approx 30-40 minutes. he was asking about the overview of major project. after that he asked a programming question.

There are 3 sorted arrays({A1, A2, A3}) and you have to computer number of triplet {i, j, k} such that

{i, j, k} belongs to {A1, A2, A3} respectively and i<j<k. and he asked to write code clearly and should not fail for any edge case. and i was able to do it in linear time Complexity and without any extra space. and he was satisfied with my answer. and again we discussed about company for approx 5-10 minutes.

Round 3:

It again started with general introduction. and then he asked basic questions from Operating system, Computer networks and database management system.

Operating System: There is a game which requires 4GB RAM memory and i have a system with 2GB RAM. Then which concept the system will use to run the game.

Computer Network: How any url is processed in details like how it find DNS server etc.

DBMS: which properties RDBMS should follow? then what is normalization and denormalization and why we need it explain with example.

Then He asked, There is a tree having node values as \xe2\x80\x98T\xe2\x80\x99 and \xe2\x80\x98F\xe2\x80\x99 only. write a function which should return the largest subtree having equal number of \xe2\x80\x98T\xe2\x80\x99 and \xe2\x80\x98F\xe2\x80\x99 nodes. I was able to do it in O(n) time complexity and O(1) space complexity and he was satisfied with answer.

after that he asked There is a sorted array in which except one element all elements have a duplicate number. write program to find unique element from array .First I told him XOr approach and checking next number if it is equal or not all in O(n) approach. then i told him O(log(n)) approach using binary search and then he was satisfied with answer.

then after, He told to reduce the complexity of searching in linked list by using any data structure or changing the node structure. at first i told him to use hash map but there can be duplicate data so he rejected this approach. Then after i was able to give 2 approaches .by using array of pointers which maintains middle element in every go of binary search and by using skip lists.

Round 4:

It started with exchanging introduction. and there was a discussion about major project of college in details. I was explaining my project on white board. He was asking a lot of details from my project or a lot of other questions like: what will you modify now in the project and why? What have you learnt through this project technically and non technically? and a lot of inner details of project.

then he asked to find the number of nodes in linked list which is outside of loop of linked list. He wanted to know the floyd algorithm and asked why it is correct and give arithmetical expression for this and then he asked to write code.

Again He asked question from linked list. There is a linked list having an extra pointer random pointer which points to any random node of linked list. And you have to clone the linked list. At first i was able to do it in O(n) space complexity but he asked for O(1) space complexity. then i was able to do it without using any extra space.

Tips:

1. Be confident and discuss the approach with interviewer.
2. discuss about company at last with interviewer.
3. do some problems from leetcode.
4. last but not least don\x80\x99t give up try the problems in all possible way. you will realize

at last that you are able to do the problem and listen the interviewer carefully because he will give a lot of hints.

All The best.

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Amazon Interview Experience (FTE) | On-Campus

- Difficulty Level :\nExpert
 - Last Updated :\n22 Aug, 2019

Amazon has visited our campus (**NITJ**) for the role of Software Developer Engineer-I (**16th August 2019**)

Process: 1 online coding round+ 4 F2F technical interviews.

Online coding round:

It was very easy and there were 20+ MCQs and 2 coding questions-

1.you have a string and you have to replace every character with the character 3 place ahead(like a->d, z->c, \xc2\x80-\xc2\x86)

2 related to array | don't remember it but it was very easy to implement

First technical round:

1. Tell me something about yourself.
 2. Tell me something not on your resume.
 3. Given an array of integers. If the number a and its negation -a both present in the array then print

At first I told him the linear search approach then binary search approach but, I was using the extra space. So, he told me to reduce it to O(1). I explained my modified approach and coded it.

4. LRU implementation :

I told him an approach having time complexity of O(size of frame). He was not happy with my approach.

I tried to think in a different manner and came to a solution where I used pointers and unordered map to reduce its complexity to O(1) and finally coded it.

5. Merge k sorted array

I explained him and wrote Min Heap based solution. He was impressed and then asked me the complexity.

Second technical round:

- ## 1. Some **SQL queries** (related to nested query) and sharding.

- 2.** What is BST and how to check that the given binary tree is **BST or not**.

\xc2\xa0I told him the postorder approach using minimum and maximum range. He then asked me what would happen if the left most node is equal to INT_MIN and right most node is equal to INT_MAX then what will you do ?\xc2\xa0

- ### 3. Sum of a given range

I explained him 2 approach and he wanted me to code for both of them.

a) Segment tree($O(\log n)$)

<https://www.geeksforgeeks.org/segment-tree-set-1-sum-of-given-range/>

b) Square root decomposition ($O(\sqrt{n})$)

<https://www.geeksforgeeks.org/sqrt-square-root-decomposition-technique-set-1-introduction/>

4. Which graph traversal method is better and why.

5. Spiral traversal of a binary tree but the direction of traversal should be down to up manner and start traversing from bottom right node.
I used 3 stacks and coded it. After that he asked me to try out some examples.

Third technical round:

1. Tell me something about your hobbies and interest.

2. A matrix m is given. You are standing on the given position $m[x][y]$ and there are k numbers of delivery boys with their position given. If the $m[i][j]=0$ that means this path is blocked. You can move in 4 directions, now you have to find the nearest delivery guy and return its position.
I told him an approach using Backtracking. He asked me to reduce the complexity then I explained and wrote the program using BFS. He asked me to check my code with some examples.

3. Heavy Light Decomposition

I explained him and wrote the code.

link <https://www.geeksforgeeks.org/heavy-light-decomposition-set-1-introduction/>

4. Deadlock necessary conditions with examples.

5. There are 2 processors in a system and each having a process. When the process have 2 threads, it takes 4 ms to complete 4 tasks. How much time it will take if the process have single thread.
First, I was confused then he explained me the question again.
I told him the answer with the appropriate reason but I was not sure.

6. He said me that this is the first time he is taking interview of an ECE student. And asked me questions on microprocessor and RAM internal architecture.

Fourth technical round:

1. Asked me about my internship project.

2. Why we use RNN and what is the difference between RNN and CNN.

3. Question based on system design.

I said that it was not in my syllabus because my branch is ECE then he told me to use any data structure. I used hash map and DBMS for storing the data. He asked me to write the code.

4. Given a stream of characters. Print all the characters, not repeated in last 10 ms.

I used deque of size 10 to implement it.

5. Implement Round Robin process scheduling.

It can easily be done using Queue data structure.

6.Why Amazon?

Result

!!!!!!We were said to wait for the result.\xc2\xab0

!!!!!!finally, 4 CSE students and 1 ECE student (luckily me ;)) were selected for SDE profile.

Tips:

They want each and every question to be coded properly on paper. So, do practice.

If you know the solution, tell the brute force and then optimize it. Discuss with the interviewer as much as you can. Stay confident and trust your instincts.

I would like to thanks **GeeksforGeeks**\xc2\xab0which was a great help during my preparation for the interview.

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Amazon Interview Experience for SDE I

- Last Updated : \n22 Aug, 2019

Online round:

Test Pattern: Two coding problems, 28 MCQs

Time: 1 hr 30 min

MCQs were solely based on the questions pertaining to input/output of a C program. A general pattern observed was that there would be a code snippet in the question and one would have to provide correct output/error of that particular program.

Coding problems included:

1. A program to find the number of trailing zeroes for the factorial of a given number.
2. A co-ordinate plane was given. On each point (x, y) there are $x+y$ number of apples on it. A person is standing on $(0, 0)$ and he wants to buy a square plot having N number of apples inside it (including the periphery). Question was to return the value of perimeter of that square plot given N .

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Amazon Interview Experience | On-Campus

- Last Updated : \n21 Aug, 2019

\xc2\xd0

Coding Round:

- \xc2\xd0 20 mcq questions on C, C++.
- \xc2\xd0 2 coding question\xc2\xd0 1) Given infix equation in string, return the value of expression Ex.\xc2\xd0 (2+3)*5\xc2\xd0 will return\xc2\xd0 \xc2\xd030\xc2\xd0 \xc2\xd02) find mean median mod of a given array

\xc2\xd0

Round 1:

1. I was given an array with some numbers which denotes the denomination of coin we can use, and then i was asked to find out to make a sum using the available denomination so that number of coins used is minimum and also print the combination of coins.\xc2\xd0<https://www.geeksforgeeks.org/find-minimum-number-of-coins-that-make-a-change/>
2. This question was easy one . I was asked to return true if two given string having edit distance equal to or less than 1 otherwise false.
3. I was asked to return last Kth node in a linked list without using extra space and recursion. I given the solution which used two traversal of the linked list but i was asked to do this only with one traversal, then i gave him the solution with two pointers.<https://www.geeksforgeeks.org/nth-node-from-the-end-of-a-linked-list/>

Round 2:

1. \xc2\xd0 \xc2\xd0 \xc2\xd0 This question was to find the maximum distance between any two leaf node in a binary tree.\xc2\xd0<https://www.geeksforgeeks.org/print-longest-leaf-leaf-path-binary-tree/>
2. This question was little bit hard. The question was that there is a mad scientist who has various solution.I was given an array that contains the volume of each solution. The scientist can mix any two adjacent solution. let\xe2\x80\x99s say two adjacent solution having volume a and b then the resultant solution will produce smoke volume of (a^*b) and liquid of $(a+b) \% 100$. Now i was asked to find a way such that all over smoke produced is minimum.\xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 \xc2\xd0 Hint: Use same approach as chain multiplication.
3. Last question of this round was to convert a source string to target string such that at any time you can change only one alphabet of the string and resultant string (at each alteration) must be present in a dictionary which was provided at the beginning.I had to find the minimum number of alteration. I gave him a bfs approach.

Round 3:

1. I was asked to print to node of a binary tree in reverse zig zag order.
2. The second question was to tell number of islands present. 1 represents land while 0 represents water in the given matrix. adjecent 1\xe2\x80\x99s comes under single islands.\xc2\xd0<https://www.geeksforgeeks.org/find-number-of-islands/>
3. After that they asked a nested sql query. and then asked about types of join in dbms(inner and

outer).

Round 4(bar raising):

1. I was given two strings one contains only alphabets and another contains alphabets, dot(.) and star(*). dot represents any one character and a star can represent any number of alphabets including 0 also. and I had to check whether both string match or not.
2. At last we talked about my project, he asked what I had done during my internship, and what challenges I faced during that.
3. Then he asked some question on Operation System including demand paging and thrashing.

I got selected.

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Amazon Interview Experience | SDE (On Campus)

- Last Updated : \n21 Aug, 2019

Amazon came to our campus (BIT Mesra) to hire FTE and 6 months interns .

Online Round : First round was online round consisting of 30 questions \xe2\x80\x93 coding questions and 28 mcq questions based on C, C++, Basic Networking. The test was conducted on mettl platform. Everyone had different set of questions . Some of the questions were :

1. LCS
2. Some String implementation question
3. Dice Throw Problem
4. Roots of quadratic equation.

After this round, 30 were shortlisted for\nc2\x0 further rounds.

Round 1 (Technical Round) :\xc2\x0The first 15-20 minutes were spent on project discussion, some cases to solve\nc2\x0 and use of process synchronization. Then the interviewer asked 2 coding questions :

1. <https://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree/>
2. \xc2\x0<https://www.geeksforgeeks.org/function-to-check-if-a-singly-linked-list-is-palindrome/>

Initially, they want to know about the approach, if satisfied, they ask to write full functional code on paper . In between, they asked about the complexity of algorithm and more optimization that could be done on it.

Round 2 (Technical Round):\xc2\x0The interviewer gave 2 coding questions :

1. Find the LCA (Least Common ancestor) of nodes having maximum depth in a given rooted tree . He asked about the approach, complexity and data structure to use . In between, he asked some common questions like time and space complexity of dfs, bfs, dijkstra (in terms of E and V) .
2. \xc2\x0In the last 15 min, he asked me to implement queue using two stacks.

He asked me to code both questions on paper . Take care of corner cases like skew tree, empty stack, etc .

After this round, 12 of us were given 6 month internships . 3 of us were shortlisted for further rounds .

Round 3 (Technical Round) : The interviewer asked me 3 coding questions :

1. <https://www.geeksforgeeks.org/perfect-sum-problem-print-subsets-given-sum/>
2. Given a list of string\nc2\x0 and a prefix . He asked to print all the strings in the list\nc2\x0 having that prefix . He asked what data structure to use, time and space complexity of it . He basically wanted to see\nc2\x0 implementation of operations on trie\nc2\x0 .
3. <https://www.geeksforgeeks.org/given-sorted-array-number-x-find-pair-array-whose-sum-closest-x/>

Round 4 (Behavioral\nc2\x0+ Technical) :\xc2\x0\nc2\x0This round was taken on amazon chime . This round was of 1 hour .

Behavioral (30 min):

- Give an example of an occasion where you've done a thing that was very hard for you .
- How did you handle shortcomings in your project .
- Compare your project with the current existing technology or project in real world scenario .
- He asked questions related to my project like why did you chose this technology, alternatives of the technology, difference between vertical and horizontal scaling, etc .

Technical (30 min) :

- Given a package and a list of packages associated with it (Means the package is dependent on those list of packages) . Now, you're given a package name, let's say A, print all the packages in sequence that you need to install in order to install package A . This was basically an implementation of Topological Sort . He was more interested in the approach and then asked me to code it up on editor .

Result : Selected for FTE

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Amazon Interview Experience | SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n21 Aug, 2019

Amazon visited NIT Jalandhar on 16 Aug, and 5 were hired. Note: in each round, I was asked to write code on paper for every ques.

Online Coding test:

- 1) Given a string of form a+b=c where one among a.b.c is replaced by x. find x.
- 2) A=1, B=2, C=3\xe2\x80\x9a6Z=26. Find possible decoding of the given digits sequence.

[Count Possible Decodings of a given Digit Sequence](#)

28 MCQS

Round 1:

- 1) Collect maximum gold coins from potholes without selecting adjacent potholes.

[Maximum sum such that no two elements are adjacent](#)

- 2) Given a number n. Print all numbers from 0 to n which have adjacent digits as the abs diff of 1. (Stepping numbers)

[Stepping Numbers](#)

Round 2:

- 1) Minimize the transactions needed to balance money between friends. Per transaction may not be equally distributed among all i.e. it is possible only few people are involved in that transaction not all. (More like Simplify debts of splitwise app)
- 2) Min and Max heap. With diagrams and proper illustration of extracting and inserting.
- 3) Heapify the min heap
- 4) Insertion in min heap

Round 3:

- 1) N-ary tree. Create its mirror tree
- 2) N-ary tree with all positive keys. Find maximum sum path in whole tree. (If you think correctly it will start from some leaf node and will end at other leaf node since all keys are positive)
- 3) Producer consumer problem discussion. Semaphore, mutex, wait and signal. Then told me to write code for it using wait() and signal() for both producer and consumer (General code not in cpp or java)
- 4) Discussion over distributed systems. N-producers N-consumer problem in distributed systems. No. of mutex variables required to solve N-producers N-consumer problem? (ans: 1)

Round 4:

- 1) Project Discussion (20 mins)
- 2) Singleton class. Its uses. Real world practical use. How to make a class singleton class. Code it.
- 3) Set right siblings of nodes. I told level order traversal. But he insisted for optimization. Told him O(1) space complexity sol, He was satisfied.

[Connect nodes at same level using constant extra space](#)

4) Length of longest palindrome substring.

[Longest Palindromic Substring | Set 2](#)

Tips to crack Amazon Interview:

- 1) Do first 200-300 Leetcode coding questions. <https://leetcode.com/problemset/all/>
- 2) Do all Amazon most asked questions from geeksforgeeks and do puzzles also. Sometimes they ask.

[Amazon topics for Interview Preparation](#)

3) 300 java ques from javaTpoint .

<https://www.javatpoint.com/corejava-interview-questions>

4) Most asked cpp, dbms interview questions (just google it)

5) For DBMS must do joins, normalization, DML, DCL, DDL, TCL and their commands.

6) Do OS thoroughly.

7) Always smile during interview and be confident.

8) Never give up on ques even if you are unable to find correct solution. Keep trying and ask for some time if stuck. Keep conversing with interviewer whole time discussing approaches while trying to find solution. They cooperate and sometimes gives you hints to take you to right path to find solution.

All the best, rock it.

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Amazon Interview Experience | On-Campus

- Difficulty Level :\n[Expert](#)
- Last Updated :\n30 Jun, 2021

Amazon has visited our campus (NIT JALANDJAR) for the role of Software Developer Engineer-I (16th August 2019)\xa0

Process: 1 online coding round+ 4 F2F technical interviews.\xa0

Online coding round:\xa0

It was very easy and there were 20+ MCQs and 2 coding questions-\xa0

- 1.you have a string and you have to replace every character with the character 3 place ahead(like a->d, z ->c, \xe2\x80\x9c.\xa0
- 2.related to array, I don\xe2\x80\x99t remember it but it was very easy to implement.\xa0

First technical round:\xa0

1. Tell me something about yourself.\xa0

2. Tell me something not on your resume.\xa0

3. Given an array of integers.If the number a and its negation -a both present in the array then print it.\xa0

ex: if {10, 5, 0, 9, -10, 7, -5} is given then print 10, 5.\xa0

At first I told him the linear search approach then binary search approach but, I was using the extra space. So, he told me to reduce it to O(1). I explained him my modified approach and coded it.\xa0

4. LRU implementation\xc2\xxa0

I told him an approach having time complexity of O(size of frame).He was not happy with my approach.\xa0

then I tried to think in a different manner and came to a solution where I used pointers and unordered_map to reduce its complexity to O(1) and finally coded it.\xa0

5. Merge k sorted array\xc2\xxa0

I explained him and wrote Min Heap based solution. He was impressed and then asked me the complexity.\xa0

Second technical round:\xa0

1. Some SQL queries (related to nested query) and sharding\xc2\xxa0

2. What is BST and how to check that the given binary tree is BST or not.\xa0

I told him the postorder approach using minimum and maximum range. He then asked me what would happen if the left most node is equal\xc2\xxa0\xc2\xxa0 to INT_MIN and right\xc2\xxa0 most node is equal to INT_MAX then what will you do.\xa0

3. Sum of a given range\xc2\xxa0

I explained him 2 approach and he wanted me to code for both of them\xc2\xxa0

a) Segment tree(O(Logn))\xa0

b) Square root decomposition (O(sqrt(n)))\xa0

4.Which graph traversal method is better and why.\xa0

5. Spiral traversal of a binary tree but the direction of traversal should be-down to up manner and start traversing from bottom right node. I used 3\xc2\xxa0\xc2\xxa0\xc2\xxa0\xc2\xxa0\xc2\xxa0\xc2\xxa0 stacks and coded it. After that he asked me to try out some examples.\xa0

Third technical round:\xa0

1.Tell me something about your hobbies and interest.\xa0

2.A matrix m is given. you are standing on the given position m[x][y] and there are k numbers of delivery boys with their positions given.\xa0

If the $m[i][j]=0$ that means this path is blocked. You can move in 4 directions, now you have to find the nearest delivery guy and return its position.\xa0

I told him an approach using Backtracking . He asked me to reduce the complexity then I explained and wrote the program using BFS.\xa0

He asked me to dry run the code.\xa0

3. Heavy Light Decomposition\x0a

I explained him and wrote the code.\xa0

link \xe2\x80\x93 <https://www.geeksforgeeks.org/heavy-light-decomposition-set-1-introduction/>\xa0

4. Deadlock necessary\x0a conditions with examples.\xa0

5. There are 2 processors in a system and each having a process.when the process have 2 threads, it takes 4 ms to complete 4 task. How much time it will take if the process have single thread.\xa0

First, I was confused then he explained me the question again. I told him the answer with the appropriate reason but I was not sure.\xa0

6.He said me that this is the first time he is taking interview of an ECE student. And asked me questions on microprocessor and RAM internal\x0a\x0a\x0a\x0a\x0a\x0a architecture.\xa0

Fourth technical round:\xa0

1.Asked me about my internship project.\xa0

2.Why we use RNN and what is the difference between RNN and CNN.\xa0

3. Question based on system design.I said that it was not in my syllabus because my branch is ECE then he told me to use any data structure.I used hash map and DBMS for storing the data.He asked me to write the code.\xa0

4.Given a stream of characters. Print all the characters, not repeated in last 10 ms. I used dequeue of size 10 to implement it.\xa0

5. Implement Round Robin process scheduling.It can easily be done using Queue data structure.\xa0

6.Why Amazon?\xa0

!!!!!!We were said to wait for the result.\xa0

!!!!!!finally, 4 CSE students and 1 ECE student (luckily me ;)) were selected for SDE profile.\xa0

Tips:\xa0

They want each and every question to be coded properly on paper. So, do practice.\xa0

If you know the solution, tell the brute force and then optimize it.Discuss with the interviewer as much as you can.\xa0

Stay confident and trust your instincts.\xa0

I would like to thanks Geeks for Geeks which was a great help during my preparation for the interview.\xa0

\xa0

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Amazon Interview Experience for SDE-I

- Difficulty Level :\n[Medium](#)
- Last Updated :\n19 Aug, 2019

\xc2\xd0

Online coding test:

Three coding question were there on the hackerearth platform. It\xe2\x80\x99s 70 minutes test.

1) Find next greater number with same set of digits. If next greater element does not exist print \xe2\x80\x9c-1\xe2\x80\x9d.

Input: n=327698

output: 327869

<https://www.geeksforgeeks.org/find-next-greater-number-set-digits/>

2) Given array of\xc2\xd0 elements with zero and one only, you can do following operation at-most one time.

operation: flip all elements from i to j index where i<=j.

Now you need to print maximum number of one in array after doing these operation.

Input:

n=6

1 0 0 1 0 0

Output: 5

3) Given array and integer k you need to tell that whether array can be sorted or not after following operation any number of times.

operation: you can swap (i) index element with (i+k) index element any number of times.

Print the sorted array if the array can be sorted by doing the above operation or print \xe2\x80\x9c-1\xe2\x80\x9d.

Input1:

n=8 k=2

1 2 7 8 3 4 5 6

Output1:

1 2 3 4 5 6 7 8

Input2:

n=8 k=2

1 4 5 6 7 8 2 3

Output2: -1

\xc2\x0a

Round 1:

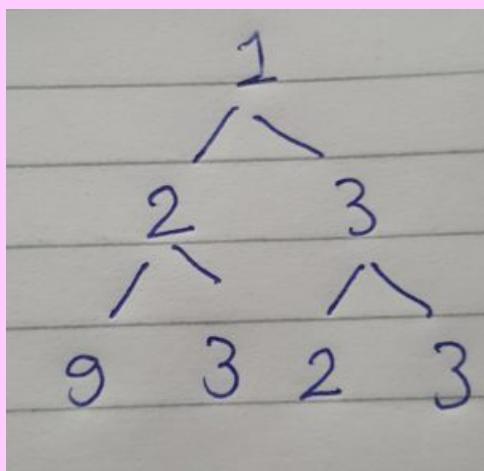
1) Tell me about your self.

2) Given binary tree, complete path is defined as root to leaf. The sum of all nodes on that path is defined as sum of that path. Given number K you need to remove the nodes in binary tree which don't lie in any path with sum \geq K.

The function was given with root of binary tree and K you need to return the root after removing the nodes which don't lie in any path with sum \geq K.

Input:

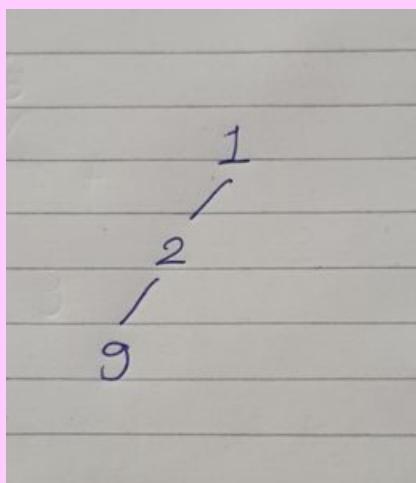
K=8



\xc2\x0a

\xc2\x0a

Output:



\xc2\x0a

<https://www.geeksforgeeks.org/remove-all-nodes-which-lie-on-a-path-having-sum-less-than-k/>

3) Given rotated sorted array find the minimum element in the array.

Input:

n=8

7 8 1 2 3 4 5 6

Output: 1

<https://www.geeksforgeeks.org/find-minimum-element-in-a-sorted-and-rotated-array/>

\xa0

Round 2 (Managerial round over video call):

- 1) Tell me about yourself.
- 2) Current role in the company.
- 3) Project you liked the most worked in the corporate life.
- 4) Time when you are given task and you are not able to complete on your own and take help of other colleague.
- 5) Time when you have received critical feedback from your manager and how did you improve it?
- 6) Extra work you have done in the previous company apart from your regular work.
- 7) Which was the most critical task in your work in previous company and how did you manage that?

\xa0

Round 3:

- 1) Tell me about yourself.
- 2) Stream of customer ID and product ID are arriving continuously. Now there will be query at any moment of time. You need to answer the query.

Query: Given product ID, number of the product with this product ID sold to customer.

Input:

Current Entry:

pID\xc2\xA0 \xc2\xA0 \xc2\xA0 cID

1\xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 499

3\xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 421

1\xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 645

1\xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 \xc2\xA0 989

2\|xa0 \|xa0 \|xa0 \|xa0 \|xa0 \|xa0 424

Query: pID=1

Output: 3

How will you space optimised this problem?

3) Number is arriving in the stream and the fixed K is given in the starting of Input. The below query can be asked at any moment of time. You need to answer the query.

Query: find K th maximum element in current stream.

Input:

K=3

Current Stream: 8 7 1 2 4 5 9

Output at the moment: 7

<https://www.geeksforgeeks.org/kth-largest-element-in-a-stream/>

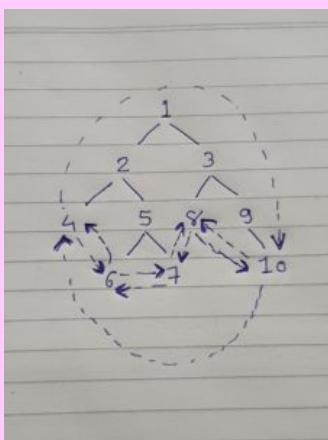
4) In the binary tree leaf\x80\x99s left and right node will not be null. one leaf\x80\x99s right node will be connected to node which is next leaf in the in order traversal. and the leaf\x80\x99s left node will be connected to previous leaf according to in order. First leaf\x80\x99s left will be the last leaf in the in order traversal and last leaf\x80\x99s right node is connected to first leaf in the in order traversal.

You need to print in order traversal.

Expected Time Complexity: O(n)

Expected Space Complexity: O(1)

Input:



\|xa0

Output:

4 2 6 5 7 1 8 3 9 10

5) Write the optimised code for LRU Cache.

Size of LRU cache will be given in the input.

6) What is polymorphism?

\xc2\x0

Round 4 (Bar Raiser round over video call):

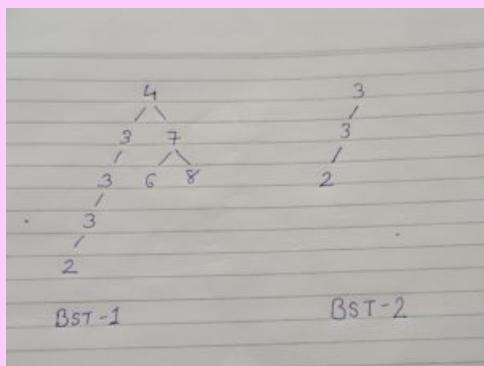
1) Tell me about yourself.

2) Check If one BST is subtree of another BST.

Function will be given with root1 and root2 as parameter of BST-1 and BST-2 and will return true if second BST is subtree of first BST or return false.

Note: Elements can be repeated. BST was created with all less or equal element will go to left child of node and greater element will be on the right child of the node.

Input:



\xc2\x0

Output: true.

\xc2\x0

Result: Hired!!

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Amazon Interview Experience On Campus for SDE 1

- Difficulty Level :\n[Hard](#)
- Last Updated :\n19 Aug, 2019

Key Focus: MustDoCodingQuestion(GeeksForGeeks), HackerRank

Written Round:

2 coding questions and\nc2\x0 30 MCQ\xe2\x80\x99s on mettl Platform (<https://mettl.com/>).
Total Time : 1.5 hr.

Coding Questions:

- 1.Minimum number of jumps to reach end (<https://www.geeksforgeeks.org/minimum-number-of-jumps-to-reach-end-of-a-given-array/>)

Solved in O(n) time complexity.

2. Count Inversions in an array (<https://www.geeksforgeeks.org/counting-inversions/>)

Solved using Merge Sort in O(nlogn) time complexity.

MCQ\xe2\x80\x99s :

Questions on Trees(BST), Output Prediction of given Codes(Codes are given in C, C++\xc2\xxa0 Languages).

In my case, I have solved both the coding questions with all test cases passed.

Round\xc2\x01:

Introduction of both of us.

1.Asked about what Data Structure to implement HashMap other than bst, bbst, Heaps, Arrays.
Told about bst, bbst approaches and mentioned that I know implementation of these data structure approaches only, then he moved to next question.

- 2.Detect cycle in an undirected graph (<https://www.geeksforgeeks.org/detect-cycle-undirected-graph/>)

- 3.Find the first circular tour that visits all petrol pumps (<https://www.geeksforgeeks.org/find-a-tour-that-visits-all-stations/>)

- 4.Maximum Path Sum in a Binary Tree (<https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/>)

- 5.Reduce the string by removing K consecutive identical characters (<https://www.geeksforgeeks.org/reduce-the-string-by-removing-k-consecutive-identical-characters/>)

For Question 3, 4 I had mentioned to interviewer that I already know the solution for those questions, so for that questions he only asked to explain logic to solve them without writing code.

For Question 2, 5 needed to write neat production code with all edge cases handled properly.

Round 2:

Introduction of both of us.

- 1.Efficient search in an array where difference between adjacent is 1 (<https://www.geeksforgeeks.org/efficient-search-in-an-array-where-difference-between-adjacent-is-1/>)

- 2.Asked to specify about all Normal Forms and why normal forms are used (DBMS).

3. Asked to specify process synchronization concept and ways to handle it and also asked to mention all the process scheduling algorithms.

4. LRU Cache Implementation (<https://www.geeksforgeeks.org/lru-cache-implementation/>)

For Question 1, 4 have to write neat production code with all edge cases handled properly.

Round 3:

Introduction of both of us.

1. In an n-array tree where each node can have an apple represented as 0(apple not present) or 1(apple present), then needed to find out path with maximum number of apples. Asked to optimize both time and space complexity.

Solved using Diameter of a Binary Tree technique with some modifications.

2. Given a bench with n seats and few people sitting, tell the seat number each time when a new person goes to sit on the bench such that his distance from others is maximum (<https://www.careercup.com/question?id=5385816814125056>). Here he extended this question by specifying that I need to find k such positions for k persons to sit. Needed to solve in optimal way. Solved this using Heap Concept.

3. Asked about Producer-Consumer problem in Operating System and the asked to write a neat code for both producer and consumer solving their synchronization problem using Synchronization Mechanism without busy waiting. And also asked to extend the code to work in distributed environment.

For Question 1, 2, 3 have to write neat production code with all edge cases handled properly.

Bar Raiser Round:

Introduction of both of us.

1. Check for Majority Element in a sorted array (<https://www.geeksforgeeks.org/check-for-majority-element-in-a-sorted-array/>)

Solved using Binary Search in O(logn) time.

2. Asked what happens when we enter a URL and how we are able to reach a site (Expected to explain about Domain Name System Concept).

For Question 1 have to write neat production code with all edge cases handled properly.

Note: For all the questions optimal solution is expected, hints are given if stuck to derive optimal solution. Similarly, for all the questions asked in interview they mentioned to write neat production code with all edge cases handled properly.

Verdict: I was Offered Full Time Employment (SDE 1) at Amazon.

My Personal Notes\narrow_drop_up

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Amazon Interview Experience | MNIT Jaipur

- Last Updated : \n19 Oct, 2020

Round 1: It was coding test in which two coding question and 28 mcq related to data structure and C++. There were different set of papers in my case one coding question is convert infix to prefix and another is find mean, median and sum in array. After this round 33 select for interview.

Round 2: It was first interview round in which interviewer first discussed related to project then asked two question. It was problem solving round.

1. Generate two number from given digit of array b/w 0 to 9 such that if length of array is even then number of digit in each number should be equal if odd the digit difference b/w number should be 1. Use count sort\ xc2\xa0 and in this case some edge case missed so detect that edge case (like 1000 in this 10, 0 digit is not equal but length of array is even). Write code on pan and paper.

2. Detect Cycle in Directed graph. Write code on paper.

Round 3: It was second Interview round she asked me three question related to data structure.

1. Search in infinite array First i told the binary search using fix upper limit as power of 2 and increment it. Then Interviewer asked me 2^{1000} and 2^{1001} there is huge diffrence b/w them so can you do it in efficient manner. I came with fix upper limit as multiple of 2. Interviewer was satisfied with my approach. She said write code on paper.

2. Find the intresection point in linked list direct from gfg . I told solution and she was satisfied.

3. It was related to min heap and write code on paper. I told solution and she was satisfied and said that we will come back for next round.

Round 4: He asked me three problem

1. Find Majority element in an array. I first told take map then he said extra space is not allowed. I gave second approach using sorting but he said do in $O(n)$. Then I come up with efficient solution in $O(n)$. He was satisfied and said Nice. But he asked, have you done it before? i said yes i have done it before 2-3 month then he was happy.

2. related to binary tree find maximum sum path i have done it using recursion.

3. circular patrol pump i told approach and then he said ok.

After this he discussed on dbms and operating system related to deadlock, semaphore, mutex, critical section, ACID property.etc.

Round 5: 4 student were select for this round. It was HR round in this he asked some question related to project and then asked np-complete problem, max heapify code, scc(strongly connected component).

The result was announced after some discussion only one from us selected Unfortunately i was not that one.

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Amazon Interview Experience | On-Campus

- Last Updated : \n19 Aug, 2019

Campus: NIT Jalandhar

Date: Aug 2019

Round 1:

It was a coding round, of 1hr 30 min, with two questions and 28 MCQ mostly based on data structures and concept of c/c++.

1. Throw dice problem. \xc2\x00<https://www.geeksforgeeks.org/dice-throw-dp-30/amp/>
2. Evaluation of postfix expression. \xc2\x00<https://www.geeksforgeeks.org/stack-set-4-evaluation-postfix-expression/>

Round 2:

This round lasted for 60 minutes. It was a F2F round and the interviewer was nice. He asked me two problems.

1. there are n staircases and a person has to go to nth stair he can take any number of steps based on his age, for eg. if his age is 5 then he can take 1 step, or 2 steps or 3 steps or 4 steps or 5 steps. I gave the solution and then he asked for complexity and then asked me to optimize it.
2. There is a graph, we can go from one node to other node either for free or for a cost(that cost is the same for each path). Find the path which connects the source to destination with min cost. I answered it but my approach was not good enough so he helped me out for the same.

At last, he asked me to code the solution for both the question.

Round 3:

This round was again F2F and lasted for 75 min.

The interviewer asked me a few ques about OS. and then two coding questions.

1. print the path between two nodes of the Binary Tree. I gave the approach but was unable to code.
2. how will you find a k largest elements in a file(containing integers) of the size of 1 GB.

Round 4:

This round was F2F and lasted for 60 min.

The interviewer asked me 1 ques. \xc2\x00<https://www.geeksforgeeks.org/print-a-given-matrix-in-spiral-form/>

I gave him approach and then he asked me to code it. I was unable to it.

Then he asked me that I have any question for him so I asked a few ques.

\xc2\x00

After this HR round was there but I was not selected for it.

It was a nice experience.

PS:- This year the amazon interview process is strict they are asking a new type of questions, not from the predefined set so its better have a new approach to solve a question.

I was selected in Round 2 only because my approach to the question was out of the league, I was unable to fully code it but the interviewer was highly impressed.

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Amazon Interview Experience | On-Campus for Internship

- Last Updated : \n16 Aug, 2019

Round 1:(Online Assessment \xe2\x80\x93 2 hours)

The online assessment consist of 4 parts.In first part we have to debug 7 codes in 15 minutes.The second part comprised of 24 logical reasoning question which had to be done in 35 minutes.The third part consists of 2 coding questions that had to be done in 70 minutes.The debugging part and the logical reasoning questions were very easy.

The 2 coding questions were

1:\xc2\xd0<https://www.geeksforgeeks.org/pair-with-largest-sum-which-is-less-than-k-in-the-array/>. I have done it in O(nlogn) by first sorting the array then using binary search.The solutions with O(n^2) time complexity were also accepted.

2:\xc2\xd0<https://www.geeksforgeeks.org/program-round-robin-scheduling-set-1/>.The second question was to find out the average waiting time of processes in Round Robin scheduling.It can easily be done using Queue data structure.

In the fourth part we were given some questions on work ethics which were to be answered honestly and carried a weightage.Some students who had done both the coding questions and had not answered these questions carefully were not shortlisted for the next round and the students who had answered this part carefully and had done only one coding question were shortlisted.

The online round was very easy and I had done both the coding questions .

Out of around 250 students 52 were shortlisted for next round.

Round 2:(Face to Face interview \xe2\x80\x93 1 hour)

This round begins with a brief discussion on my project and the interviewer asked about the algorithms that i have used in it.He then asked me 2 coding questions

1:\xc2\xd0<https://techdevguide.withgoogle.com/resources/compress-decompression/>.The question was to decompress the compressed string.I solved it using a stack of strings.He then asked me to code my approach on paper so that all corner cases are covered.He then gave me 2 or 3 test cases and asked me to dry run my code on these test cases.He was very impressed by my approach.

2:\xc2\xd0<https://www.geeksforgeeks.org/topological-sorting/>.He then asks me another question which was an application of topological sorting in Directed Acyclic Graph and asked me to code topological sort algorithm on paper.

He then asked me whether I have an interest in Computer Networking or not.I said that CN is not one of my favourite subjects and my favourite subjects are OS and DBMS.He then start asking questions from OS and DBMS.

He asked the data structures that are used in DBMS, indexing concept in DBMS, insertion in B trees, ACID properties and the difference between thread and process in OS.He was satisfied by all of my answers as I had prepared all of core CS subjects for the interview.

After all these he asked whether i have any question for him and the interview ended.

I was very happy with my performance and was very confident of my selection.

Out of 52 shortlisted students 14 were selected for the summer internship and i was one of them.

I would like to thanks Geeks for Geeks which was a great help during my preparation for the interview.

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Amazon Interview Experience | SDE-2

- Difficulty Level :\nExpert
- Last Updated :\n16 Aug, 2019

Usually Amazon SDE-2 interviews happens in 2 days schedule. On the 1st day there will be 3 rounds (PS/DS and design rounds). If the feedback is good you then will be called for remaining 2 rounds which are Manager and Bar raiser.

In my case date of joining was very close in some other org, so all 5 rounds happened on one day.

Round 1 PS/DS:

Q1.

Given a binary tree you have to print endmost node in zig zag fashion.

Example:

```
1
/\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80 \\
2\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80 3
/\xc2\x80\xc2\x80\xc2\x80 /\xc2\x80\xc2\x80 /\xc2\x80\xc2\x80\xc2\x80\xc2\x80 \\
4\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80 5\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80 6\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80\xc2\x80 7
\\
8
```

Output should be : 1, 3, 4, 8

Soln: Level Order traversal using node count approach and using flag to decide which node end you have to print (leftmost or rightmost)

Q2. Given snake and ladder board you have to find minimum no. of move required to reach end of board.

Soln: BFS ([link\xc2\x80<https://www.geeksforgeeks.org/snake-ladder-problem-2/>](https://www.geeksforgeeks.org/snake-ladder-problem-2/))

Round 2: PS/DS

Q1) Given following piece of code and two int arrays A & B of equal size n, explain what is it doing.

```
ans = 0;
for(int i=0;i<n;i++)
for(int j=0;j<n;j++)
for(int k=0;k<n;k++){
if(A[i]!=B[i] && A[j] != B[k] && A[k]!=B[k]){
ans = max(ans, A[i] + A[j] + A[k]);
}
}
```

Sol\xe2\x80\x99n: Basically this code is finding max sum triplet from A array such that value in those indexes of B array\xc2\x80 is different.

Next he asked me to re write this code with better time complexity.

Q2.\xc2\x80 Given a binary tree, find path in the tree such that the sum of nodes in path is equal to given K. Path can start from any nodes and can end on any nodes.

Example : for $k = 10$, there will be 2 paths: $1 \rightarrow 3 \rightarrow 6$ and $3 \rightarrow 7$

Use following concept:

<https://www.geeksforgeeks.org/find-subarray-with-given-sum/>

<https://www.geeksforgeeks.org/find-subarray-with-given-sum-in-array-of-integers/>

Round 3: Design

Design Dominoes website. This was mainly focused on High level design and you have to mention all the major components like Delivery tracking system, User Signup/Login flow, Fulfillment service etc. You have to describe complete flow of a order until its delivery to customer. Interviewer also asked me to write schema details for few entities.

Round 4: Manager

In the first of half of this round we mostly discussed about my work experience and role which is played in my current team.

In the second half he asked me to design Job management system where user submits a job and specify the time its should run just like Airflow app.

Round 5: Bar raiser

This one was mostly discussion oriented to judge on the basis of Amazon leadership principles. You have to mention few scenarios about your work and how you have applied those leadership principles.

Few questions which I remember were why did I used Golang instead of Java, most challenging tasks which I have worked on.

Finally, after few days I received positive feedback from HR.

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Amazon Interview Experience | On-Campus for SDE

- Difficulty Level :\n[Hard](#)
- Last Updated :\n19 Aug, 2019

Date: 7th August 2019

First-round was an online test consisting of 2 coding questions and 28 MCQ\xe2\x80\x99s on mettl. Level of coding questions varies from easy to medium. Everyone had different coding questions. Few which I remember are:

1. Inversion count in the array
2. Postfix evaluation\xc2\xa0(handle negative number also)
3. Mean median mode in array
4. Dice throw puzzle(DP)
5. Roots of quadratic equation
6. Linear equation in one variable
7. Longest common subsequence
8. Evaluate Infix operation (handle negative number also)

MCQ\xe2\x80\x99s were difficult and required deep knowledge of DSA and C C++.

Out of around 350 students 53 were called for interview.

\xc2\xa0

Round 1:

Interview lasted for 25 minutes and had a detailed discussion on 2 questions. He directly started with a coding question.

1. given a string encode it. Eg. aaabb -> a3b2
2. there are n person with their height and weight given. You have to select maximum number of person that can stand in a queue with condition that height and weight of person in queue will always be less or equal to next person.you have to return persons not the count. (LIS)

This round went well and I was immediately called for next round.

Round 2:\xc2\xa0

This round lasted for 30 minutes.

1. Given k arrays of size n each. You have to select one number from each of them such that the difference between them is minimum. Initially, the question was for 3 arrays, I told him the solution quickly then he changed 3 to k.
2. Implement AVL.
3. a question on designing a data structure I don\xe2\x80\x99t remember. I used hash for that. He asked me about hash worst time complexity, ideas to improve it.

4. A question on trie.
5. median of running stream of integers.
6. Given an array of n integers ranging from 1-n-2, in which every integer comes once and two integer comes twice, find both of them.

I had to write code for every question. This interview also went well and I was called for next round immediately.

Round 3:

This round went for 90minutes. This was different from previous two. It was more of a discussion round.

1. Project discussion.
2. Range Sum query with update. I told him prefix sum. He wanted better approach. I told him segment tree.
3. He then asked range update in best optimised way. I told him Lazy propagation.\xc2\xa0 I had to write code for segment tree with lazy propagation.
4. 1 hour discussion on networks. (I told him I haven\xe2\x80\x99t revised but he kept on asking)

This round also went well. In networks he provided some input whenever I needed. Since it was late my next round was scheduled next day.

Round 4(Bar raiser)

This round went for approx 1 hour.

1. Wildcard Pattern Matching. I discussed all corner cases and base cases along with recurrence relation. He asked me to write code in bottom up dp. He was really happy with my solution.
2. \xc2\xa0Design a data structure for running stream of string. You have to print a word if it has not come within 10 second else ignore it. You have to manage memory in most optimal way. I discussed the various approach using trie, hash, lru. When I told him my solution with queue and hash, He was surprised and told me that he didn\xe2\x80\x99t thought of that solution. He asked me to code it.
3. project discussion.
4. oops- How abstract class is implemented by compiler. When I told him the solution he said awesome.

I was sure of my selection as I had seen my remarks sheet and all my remarks were strength except for cs fundamental in 3rd round which was mixed, and also 4th round was good.

Result announced at 12:30 a.m. total 9 got selected for FTE and I was one of them.

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Amazon Interview Experience | On-Campus for SDE-1

- Difficulty Level :\n[Hard](#)
- Last Updated :\n12 Aug, 2019

First round was an online test consisting of 2 coding questions and 28 MCQ\xe2\x80\x99s on mettl. Level of coding questions vary from easy to medium. Everyone had different coding questions. Few which I remember are:

1. Inversion count in array
2. Postfix evaluation\xc2\xa0(handle negative number also)
3. Mean median mode in array
4. Dice throw puzzle(DP)
5. Roots of quadratic equation
6. Linear equation in one variable
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Amazon Interview Experience| On-Campus Internship

- Last Updated : \n12 Aug, 2019

Amazon has visited our campus for 11 months internship for the role Data Engineer. The interview process had 3 rounds.

Round 1: Online Test

Round 1 was an online test which consisted of about 65 mcq questions. Some questions had negative marking. Not all questions were of same marks, based on complexity the questions ranged from 1 mark to 4 marks. Questions were from topics like Java, DBMS, Linux, Big data and Aptitude. They were about 4-5 Aptitude questions which were easy to solve. Questions from Linux were mostly based on grep command. Most of Java questions were from threads, exceptions and inheritance. We were given code and we had to predict the output or find error in code. They were 5-6 Big data questions on topics like YARN. Most of SQL questions were based on joins. Out of 300 students they have shortlisted 33 students for next round.

Round 2: Technical Interview

Round 2 was a one-to-one interview. The interviewer asked me to tell about myself and checked thoroughly my resume. He started asking me few python questions like exception handling as i mentioned python in my resume. He asked me to code operations on linked list like insertion, reverse. He also asked me about cloud computing and its advantages. He asked me about my projects and even asked me draw the database schema of my project. Then he started asking me questions in DBMS. They have concentrated mostly on DBMS topics and complex SQL queries. He asked queries like second largest salary, top 5 salaries and some questions based on joins. He also asked me about primary key, foreign key. He also asked me some questions on Data Mining and Data warehousing.

Round 3: Technical + HR Interview

Round 3 was Technical and HR interview but the interviewer asked me mostly technical questions. First he asked me to tell me about myself and then asked about my goals and passion. He then asked me to code merge sort and Dijkstra's Algorithm for shortest path. Then he asked me some complex SQL queries based on joins.

Some of the other questions which were asked to my friends were sorting an array consisting of 0s, 1s, 2s (they were expecting dutch national flag approach), window functions in SQL.

All The Best!!

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Amazon Interview Experience | SDE On-Campus

- Difficulty Level :\n[Easy](#)
- Last Updated :\n12 Aug, 2019

Date: (11th August,2019)

Round 1: Round 1 consisted of 2 coding questions and 28 MCQs.

The first question was given a single dimension array and 2 dimensions of a 2D array, convert the given single dimension array into the 2D array of the given dimension(it was given that it will always be possible to convert the 1D array to 2D array of given dimension), find the sum of row-wise maximum sum and column-wise maximum sum. It was pretty straight forward.

The second question was given a string like for eg. httpfoorux or ftpbarrusds convert the given strings into URL of the form http://foo.ru/x or ft://bar.ru/sds. This was also a pretty straight forward question. The MCQs were tricky and tested the candidate\xe2\x80\x99s C and C++ language knowledge.

The test was a 90 minutes test and was conducted on Mettl. bits/stdc++.h was allowed and the C++ compiler was g++ 5.4. Around 27 students cleared the first round.

Round 2:\xc2\xd0 Round 2 was a direct technical interview. The interviewer directly moved on to the algorithm question and didn\xe2\x80\x99t ask about my projects etc.

The first question was to [Check if the given linked list is a palindrome or not](#). The constraints were that you cannot modify the given list and cannot use any auxiliary space.

The second question was to [Find all the nodes at k distance from a given node in a binary tree.\xc2\xd0](#)

The interview asked to explain the approach first. After successfully explaining the approach the interviewer asked to write the functions for the questions on paper with proper syntax with as minimum mistakes as possible.

Round 3:\xc2\xd0 Round 3 was also a direct technical interview.

The first question was to find the minimum number of platforms required given the arrival and departure times of the trains. The given list of times will not be in sorted order and you are not allowed to sort the given time array.

Then he went on to ask me about heap. He asked me to write a code for heapify as a min-heap.

The interviewers were very helpful during the whole process. Finally, 12 students were selected for a 6-month internship at Amazon.

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Amazon Interview Experience | SDE-1 On-Campus

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 09 Aug, 2019

Round 1:

There were 2 coding questions 28 mcq.

Ques1: [find inversion count](#)

Ques2: [find the longest common subsequence](#)(LCS)

MCQs were related to coding only.

The platform for this round was \xe2\x80\x98mettl\xe2\x80\x99. Don\xe2\x80\x9t go for recursive codes on this platform.

Round 2:

There were 2 coding questions in this round.

Ques1: Two numbers \xe2\x80\x98a\xe2\x80\x99 and \xe2\x80\x98b\xe2\x80\x99 are given. Find the count of numbers which are divisible by both \xe2\x80\x98a\xe2\x80\x99 and \xe2\x80\x98b\xe2\x80\x99 and are less than 10^{16} .

Ques2: People of Tribe A are living in a particular region. Then tribe B people shifted to the same region as of tribe A. People of tribe B doesn\xe2\x80\x9t like to see tribe A people. A person from tribe B wants to travel from the train which covers \xe2\x80\x98n\xe2\x80\x99 stations. You have been provided with an array of size \xe2\x80\x98n\xe2\x80\x99 in which each element represent the number of tribe A people who board the train at that station. Find the maximum number of stations the person can cover without seeing more than \xe2\x80\x98k\xe2\x80\x99 number of people of tribe A. Also find the maximum people the person can see while covering those number of stations. (Person can start and end at any station).

Hint: Basically the ques was to [find the longest subarray whose sum of the elements doesn\xe2\x80\x9t exceed k](#) (With some variation)

Round 3:

There were 2 coding questions in this round.

Ques1:

We are provided with a number \xe2\x80\x98n\xe2\x80\x99 which denotes the number of opening and closing parenthesis. [Print all the valid combination of parenthesis.](#)

Then this ques was modified to find the total number of valid combinations possible for a given \xe2\x80\x98n\xe2\x80\x99.

Optimized Solution: Time complexity: $O(n^2)$ and Space Complexity: $O(n^2)$

Then he asked me to optimize space

Again optimized: Time complexity: $O(n^2)$ and Space Complexity: $O(2n)=O(n)$

Ques2:

We have a telescope and we can see an infinite number of stars(one by one). We have been provided with a method() that will calculate the distance of each star from us. So at any point print the closest \xe2\x80\x98n\xe2\x80\x99 stars which we can see.

Solution: use heap(priority_queue)

Round 4:

There were 2 coding questions and technical questions

Ques1:

Fill two instances of all numbers from 1 to n in a specific way

Technical questions related to OS, OOPS, Computer Networks

Ques2:

There are infinite number of people visiting the Amazon website. A person can visit the website several time. A stream of number are coming that represent id of the person visiting the website and a fixed number $\text{xe2}\backslash\text{x80}\backslash\text{x98k}\text{xe2}\backslash\text{x80}\backslash\text{x99}$ is provided. At any particular time find $\text{xe2}\backslash\text{x80}\backslash\text{x98k}\text{xe2}\backslash\text{x80}\backslash\text{x99}$ people who have most visited our website.

Solution: use map and heap(priority_queue)

Round 5: (Bar-raiser round)

Tell me something about yourself. Then questions on each term I was using.

Coding ques1:

Given an expression find whether it is valid or not.

This was implementation based ques and whether I am covering all the corner testcases or not.

This was the last round. 7 people were selected from my college.

Duration of each round was 60 to 90 minutes.

Be prepared to write code for each and every approach you are telling.

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Amazon Interview Experience for SDE-2

- Difficulty Level : \nExpert
- Last Updated : \n06 Aug, 2019

1st Round :

Q 1. Given an input string (s) and a pattern (p), implement wildcard pattern matching with support for $\backslash x\backslash a0\backslash ?\backslash \backslash x\backslash a0$ and $\backslash x\backslash a0\backslash *\backslash ?$.

$\backslash xe2\backslash x80\backslash x98?$ Matches any single character.

$\backslash xe2\backslash x80\backslash x98^*$ Matches any sequence of characters (including the empty sequence).

Example :

Input:

$s = \backslash xe2\backslash x80\backslash x9cadceb\backslash xe2\backslash x80\backslash x9d$

$p = \backslash xe2\backslash x80\backslash x9cab\backslash xe2\backslash x80\backslash x9d$

Output:

Explanation: The first $\backslash xe2\backslash x80\backslash x98?$ matches the empty sequence, while the second $\backslash xe2\backslash x80\backslash x98$ matches the substring $\backslash xe2\backslash x80\backslash x9cdce$.

Q 2. \xc2\xa0<https://www.geeksforgeeks.org/min-cost-path-dp-6/>

Q3 . Given an array $\backslash xc2\backslash xa0_{nums}$ of $\backslash xc2\backslash xa0_n$ integers, are there elements $\backslash xc2\backslash xa0_a$, $\backslash xc2\backslash xa0_b$, $\backslash xc2\backslash xa0_c$ such

that $\backslash xc2\backslash xa0_a + \backslash xc2\backslash xa0_b + \backslash xc2\backslash xa0_c = 0$? Find all unique triplets in the array which gives the sum of zero.

Example:

Given array nums = [-1, 0, 1, 2, -1, -4],

A solution set is:

```
[  
[-1, 0, 1],  
[-1, -1, 2]  
]
```

2nd Round

Q 1 Given an array A of strings, find any smallest string that contains each string in $\backslash xc2\backslash xa0_A$ as a substring.

We may assume that no string in $\backslash xc2\backslash xa0_A$ is substring of another string in $\backslash xc2\backslash xa0_A$.

Example 1:

Input: \xc2\xa0[\xe2\x80\x99cale\xe2\x80\x9d, \xe2\x80\x99cloves\xe2\x80\x9d, \xe2\x80\x99leetcode\xe2\x80\x9d]

Output: \xc2\xa0\xe2\x80\x99calexlovesleetcode\xe2\x80\x9d

Explanation: All permutations of \xe2\x80\x99cale\xe2\x80\x9d, \xe2\x80\x99cloves\xe2\x80\x9d, \xe2\x80\x99leetcode\xe2\x80\x9d,

\xe2\x80\x9cloves\xe2\x80\x9d, \xe2\x80\x9cleetcode\xe2\x80\x9d would also be accepted.

Q 2\xc2\xa0<https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/>

Q 3\xc2\xa0<https://www.geeksforgeeks.org/lowest-common-ancestor-in-a-binary-search-tree/>

Round 3

Q1 Given an unsorted array, find the maximum difference between the successive elements in its sorted form.

Input:\xc2\xa0[3, 6, 9, 1]

Output:\xc2\xa03

Explanation:\xc2\xa0The sorted form of the array is [1, 3, 6, 9], either (3, 6) or (6, 9) has the maximum difference 3.

Q 2

Input binary is given

Example :\xe2\x80\x9c010\xe2\x80\x9d

replace

0 with 01

1 with 10.

given k, m

k is iteration, m is index

tell what is present at m index

example k= 2, m=3

010

iteration 1\xe2\x80\x93011001

iteration 2\xe2\x80\x93011010010110

ans : 0 (value at 3rd index, 2nd iteration)

Q 3\xc2\xa0<https://www.geeksforgeeks.org/egg-dropping-puzzle-dp-11/>

Round 4 (Design)

Design Amazon Locker

HLD, class diagram, Scaling, security issues. how will you handle security issues.

Also design amazon lockers reporting Manager tool for developers (if developer wants to know any status of any locker\xe2\x80\x9d then a detail report should be provided for developer)

Detailed discussion went for around 1.5 hours.

Tip : Make your design Asynchronous

Round 5 Hiring Manager

Q 1

Lot of Behavioural Questions

Biggest Achievement and failure

Conflict with Manager, how did you resolved

How can you improve your best work you have done till now

Q2

Design Snake & Ladder multiplayer game

HLD and LLD both were discussed in detail

How will you store your view on the server (Big discussion on it)

How will snake and ladders coordinates data will be stored on the server of current game session, if Snake and Ladder board is random for every game session (position of snakes and Ladders coordinate position should be random for every session of game)

Round 6 (Bar Raiser)

Q 1 Lot of Behavioural Question

Q2 Design Inventory for 1000 employees in Amazon for any product of your choice(like laptops etc) class level diagram, HLD

Main Emphasis was on Design patterns used in class diagram

Q3

Given $a[0 \dots n-1]$ array of numbers, $a_0, a_1, a_2, \dots, a_{n-1}$, where $0 \leq a_i < 231$.

Find the maximum result of $a_i \oplus a_j$, where $0 \leq i, j \leq n-1$ and $i < j$.

$O(N^2)$ complexity was expected

Example:

Input: $[3, 10, 5, 25, 2, 8]$

Output: 28

Explanation: The maximum result is $5 \oplus 25 = 28$.

Result : Hired !

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Amazon Interview Experience

- Last Updated : \n31 Dec, 2019

Round 1:

First round was an online test consisting of 2 coding questions and 28 MCQ\xe2\x80\x99s. Level of coding questions was unexpectedly easy. Everyone had different coding questions. Few which I remember are:

1. Inversion count in array
2. Postfix evaluation
3. Mean median mode in array
4. Dice throw puzzle(DP)
5. Roots of quadratic equation
6. Linear equation in one variable

MCQ\xe2\x80\x99s were difficult and required deep knowledge of DSA and C C++.

Out of around 550 students 40 were called for interview.

Round 2:

Interview lasted for 40 minutes and had thorough discussion on 2 questions.

1. Locate all the permutations of a string in another string. All corner cases to be dealt with. Complexity should be minimized. Code should be explanatory and clear.
2. Count occurrences of an element k in sorted array in (logn). All corner cases to be dealt with. Complexity should be minimized. Code should be explanatory and clear.

Round 3:

This was a 70 minutes long round and involved exhaustive discussion on\xc2\x96 SNAKE AND LADDER IMPLEMENTATION\xc2\x96 from scratch. Minimum number of moves that leads to victory need to be calculated. All possible methods and their complexity need to be explored in depth. Graphs, DP, Backtracking and trees were drilled and relative performance were compared.

I got eliminated after this round. \xf0\x9f\x99\x82

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Amazon Interview Experience for SDE 2

- Difficulty Level :\n[Hard](#)
- Last Updated :\n05 Aug, 2019

Round 1: DS

Implement a hit counter. Aim is to get number of hits in last 5 minutes and 10 minutes. Duplicate hits can also come at a particular time instance.

GFG Link:\xc2\xd0<https://www.geeksforgeeks.org/design-a-hit-counter/>

\xc2\xd0

Given an unsorted array of non-negative integers and a sum value, find the subarray whose sum of elements is equal to given sum.

GFG Link:\xc2\xd0<https://www.geeksforgeeks.org/find-subarray-with-given-sum/>

The question was further extended such that elements can be negative also and the given sum can be negative also.

\xc2\xd0

Some questions on projects I had worked on. He asked me about any task that was not satisfactory but still went into production. How did you talk to your manager and take initiative to fix it?

\xc2\xd0

Round 2: Hiring Manager

Train reservation LLD \xe2\x80\x93 full discussion on various entities involved, their attributes and how you will serve the train search results.

Asked me about any conflict I had with any team member and how was I able to resolve it.

Asked me about something that was released into production and was modified later.

He asked me about some microservices I worked on, since I had mentioned them in my intro. He asked me to explain the design of some services that I was handling.

\xc2\xd0

Round 3: Design

There was only 1 design question that was asked in this interview.

Food Delivery app design \xe2\x80\x93 Brief HLD was discussed but mainly I had to make and explain\xd0 the entire LLD \xe2\x80\x93 the entities involved, attributes, service classes for various flows like search, order, payment, track order, etc.

\xc2\xd0

Round 4: Design + DS

Tinder design. Mainly he was interested in HLD and how will you implement various flows.

DS question 1: Find maximum sum in an array such that no 2 numbers are adjacent to each other.

DS question 2: Minimum length Substring in a string S that contains all chars of another string T.

\xc2\x0

Round 5: DS

Asked me about projects I worked on. Also asked me to explain some recent thing I had developed.

Given a matrix of pixels(each pixel has colour code and brightness value associated with it), find a region with maximum brightness. A region is an area of only one colour.

Given a method `deploy(a, b)` which deploys all commits of project A from 1 to a and all commits of project B from 1 to b. `deploy(a, b)` gives true if all commits i.e. 1-a and 1-b are not faulty. Otherwise false. We are given that `deploy(a, b)` is failing and there is only 1 faulty commit. How will you find that faulty commit.

\xc2\x0

TIPS:

1. Practice writing code on paper. You are expected to write production ready and bug free code of all DS questions.
2. For design, focus on concepts rather than the exact design solution. It will help you be ready for any kind of design problem.
3. The interviewers give high attention to behavioural questions like that asked in Hiring Manager rounds. So make sure that you prepare for them beforehand.
4. You should also be able to explain clearly all the projects that you have done in your current organisation.

\xc2\x0

Besides that \xe2\x80\x93 Be confident, Believe in yourself and All the best.

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Amazon SDE Interview Experience (3 Aug 2019)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n05 Aug, 2019

Round 1:

Ques 1:- Arrange the Array in alternate increasing decreasing order.

Ques 2:-\xc2\xa0[Kth smallest element in a row-wise and column-wise sorted 2d array](#)

Round 2:

Ques 1:-\xc2\xa0[Print the path between any two nodes in a binary tree](#)

Ques 2:- A infix expression is given how will you evaluate the expression.

Step 1:- Convert infix expression to postfix expression.

Step 2:- Evaluate Postfix expression

Round 3:

Ques 1:-\xc2\xa0[Check if a Binary Tree is BST or Not](#)

Ques 2:-\xc2\xa0[Find the height of Binary Tree](#)

Ques 3:- Two nodes of BST are swapped find the nodes.

\xc2\xa0

I have given the solution for all the problem except Ques 1 of Round 2, and Solution of Ques 3 of Round 3 is not optimal according to him.

\xc2\xa0

Final result;- After 3rd round HR told you didn\xe2\x80\x99t clear the interview.

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Amazon SDE Interview Experience | On Campus 2019

- Last Updated : \n05 Aug, 2019

Round 1:

The round 1 was an online coding round. There were 2 coding questions and 28 technical mcq\xe2\x80\x99s to solved in 90 minutes. My coding questions were:-

Round 2:\xc2\xa0

This was a face to face interview. The interview started with the normal question introduce yourself and then he said now we will do some coding. The first question he asked was, There is a hotel and there is a class reservation. Reservation class consists of user-id, check-in date, and check-out date. Find the day on which there are maximum users in the hotel. He wrote the function header in a paper and gave me. I told him an approach by maintaining an array with index as day number. He then said to optimize the space complexity. I then told him a solution using sorting. He was satisfied. He told me to write the code.

The next question he asked was, given a binary tree with one more pointer called parent pointer which points to the parent node. Now given any node of the tree, find it's first sibling. I first told him my approach, he said me too modularise it. I then wrote an recursive function for the same. then we discussed some edge cases. I was missing one edge case which I couldnt figure out. But he was satisfied so, he asked me the time complexity and the round was over.

<https://www.geeksforgeeks.org/find-right-sibling-binary-tree-parent-pointers/>

Round 3:

Round 3 started with a description of my internship. He asked me several questions about it like what technologies you used. Then he asked me how good I am at operating systems. I said I am not much good. He then explained to me the importance of OS. I was patiently listening to him. Then he told me to write the code for drawing a circle given radius and assume center as 0, 0. I told him a method using sin and cos. He then told me if I can do something else. Then I told him another mathematical approach which included floating-point calculations. He told me to remove that. I then derived two conditions using which we can decide the next point. He was a bit satisfied. Then he told me the round was over. I was a little bit confused whether I will qualify or not, but I did.

Round 4:

This was round was taken by an SDE2. He told me to consider there are multiple packages and

every package is dependent on some or none. For a particular package to be built, what is the optimal order in which the packages should be build.\xc2\x90 The answer is to use consider it as a graph and then use Topological Sorting. I told him Topological sort. He then told me to write the code for the same. After some discussions with him, I wrote a proper code for it.

The next question was Spiral Order Traversal of a Binary Tree. I first told him an approach by using more space. He then told me to optimize it. I then told him the solution using two stacks. He told me to write the code for it.

Round5:

This round started with describe yourself. She then asked me about the difference between Inheritance and Composition in Java. She then asked conditions where Inheritance is a bad option and where good. She then asked me about traversals in a tree. I told her 4 traversals. She then told me to do spiral order traversal. I did it using two stacks. She then told me to use only one stack or any data structure but one. Then she told me to implement a C function. The next question she asked was an interleaving of an array. Then she told me to implement the same thing in a Linked List. She then told me given a String convert it into an integer. She then asked me some questions on networking like Virtual IP Address, how DNS works, IPv4 and IPv6, SLIP Protocol, etc. She then asked about applications of the graph. I told her Facebook. Then she asked apart from friends recommendation how facebook uses graphs. How google maps use graphs. What kind of database they have. Then the round was over.

Finally, after 6 hours of interview, I was informed that I am selected.

Some Tips:-

Stay confident and humble. Even if you know the solution, first tell the brute force and then optimize it. That too discuss this with the interviewer. Keep on interacting with him. They will guide you to the solution. Tell them your thought process instead of telling the solution straightforwardly. Every time ask questions at the end of the interview. And never tell the solution at once. Discuss the solution with them at least in the case of Amazon, this proves to be great. Because if you know the solution they will consider it as a question asked. Stay confident and trust your instincts.

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Amazon Interview Experience | On-Campus 2k19 MANIT

- Difficulty Level :\n[Medium](#)
- Last Updated :\n05 Sep, 2019

Online Round:

This round consist of 28 MCQs and 2 coding questions. MCQs are mostly based on data structure and algorithm. Time is limited to 90 minutes.

Following 2 coding questions:

1. Inversion Count Problem.\xc2\x9a0<https://www.geeksforgeeks.org/counting-inversions/>
2. Permute the given array such that sum of absolute difference between adjacent element is minimised.\xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 \xc2\x9a0 Hint: just Sort the array

I solved both problems in around 10 minutes\xc2\x9a0and all mcq as well. From around 300+ student 25 is selected for next round.

Round 1 (Technical):

This round goes around 40-50 minutes. Initially i was bit nervous as this was my first interview of my life but the\xc2\x9a0interviewer was very cool and supportive. He asked me for\xc2\x9a0water and make me feel comfortable by asking the formal questions like\xc2\x9a0Tell me about yourself and so on then we came to the coding problem as i said my interest is highly towards data structure and algorithm.

1. \xc2\x9a0<https://www.geeksforgeeks.org/design-a-data-structure-that-supports-insert-delete-search-and-getrandom-in-constant-time/>
2. <https://www.geeksforgeeks.org/zigzag-tree-traversal/>

Initially i shared my approach for each question then he asked me to code for each, finally i code them. He seems to be satisfied\xc2\x9a0and at last i asked him some questions.

Around 10-12 students were able to move to the next round .

Round 2 (Technical):

The same resume was passed here so he had some knowledge about me so he directly jumped to the coding problems.

1. He asked me some blood relation problem which is similar to LCA(Lowest Common Ancestor) Problem but with some slight modification.
2. Kth maximum occurring number in a stream of numbers. Ex. For Input: 1 2 1 3 2 1 4 4 and k=3 Output:-1 -1 -1 (2 or 3) 3 3 (3 or 4) 4

He asked me to code for the 1st problem and asked the logic for 2nd problem. This round also goes well as i was able to explain both problems logic and coded for first one\xc2\x9a0and at last asked him some questions.

Round 3(Technical):

In this round the interviewer was very cool and smart. He started interview with a formal discussions and jumped to coding part.

- Given the set of ip\xe2\x80\x99s and a ip, you have to make suggestion of ip\xe2\x80\x99s from a given ip. ex: ip\xe2\x80\x99s {192.168.0.101, 192.168.0.102, 192.168.0.113} and ip=192.168.0.11 then output: {192.168.0.113}. I gave him a TRIE based approach for which he asked me to code and i code it.
- \xc2\xa0Asked some concepts from OOPS (inheritance, polymorphism, overriding and overloading), DBMS(Normalization), OS(mutex and semaphore).
- Rotten Fruit problem.\xc2\xa0\xc2\xa0<https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/>\xc2\xa0 asked the code for it which i coded\xc2\xa0and at last asked him some questions.

Round 4(Bar Raiser):

As the last round goes till late night so this round was conducted next day. We were invited on amazon chime to give our last interview online. The interview started with a Tell me about yourself ? and goes to my project in detail as my project was not good here he was not satisfied with it. Then he gave me some livecode amazon link where he asked me to design YouTube Music App which also i don\xe2\x80\x99t know Here my interview was slipped, but i kept patience and told him that i am interested in coding part so he asked me following coding problem

<https://www.geeksforgeeks.org/find-first-non-repeating-character-stream-characters/>

I gave him hash based O(n) solution in which every query is O(1) but he want it to optimise more, then i tried but didn\xe2\x80\x99t find one and at last asked him some questions.

Finally 7 students get selected, in which 3 got FTE and 4 got 6 month Internship and i am one among them.

Tips:

- Initiate with your approach and if he seems satisfied then code.
 - \xe2\x80\x9cDo you any question for me?\xe2\x80\x9d, gives you best opportunity to show your interest towards company. So ask questions.
 - If you don\xe2\x80\x99t come with an optimal solution then at least give him a Brute Force approach.
 - Be smile and Confident.
 - Interviewers are really helpful, if you stuck anywhere ask them for hint.
 - Clarify the question before jumping to the solution and ask output for different Test Cases.
 - Do write neat and clean code and use proper variable name.
 - Practice to write code on paper or whiteboard.
 - Specially for Amazon go through the below link :
- [Leadership Principles](#)

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Amazon Interview Experience for SDE-1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n30 Jul, 2019

I have applied for the position of SDE-1 in Amazon India through a referral of an Amazon Employee.\xc2\xd0\xc2\xd0

Round 1:\xc2\xd0(Written Round) This round comprises of 20 MCQs on different topics and 2 coding questions to be solved in 90 minutes. Most of the MCQs are from data structures & operating system. The questions were easy. The coding questions are as follows:

1. \xc2\xd0<https://leetcode.com/problems/course-schedule/>
2. <https://leetcode.com/problems/reverse-string-ii/>

I was able to solve both the problems and most of the MCQs.

Round 2:\xc2\xd0(Technical Interview 1, 1 hour) This round begins with the introduction followed by **3 data structures and algorithmic problems** to be solved with pen & paper. Here I would suggest you ask questions if you have doubt about the problem. When you are stuck, the interviewer will probably give hints. If they ask you to write the code, you are on the correct path. I was stuck 2 or 3 times in the interview but able to solve all the problems. The problems were as follows:

1. <https://www.geeksforgeeks.org/convert-array-into-zig-zag-fashion/>
2. <https://www.geeksforgeeks.org/bottom-view-binary-tree/>. After writing the code, the interviewer asked me to print top or bottom view of the tree according to the user\xe2\x80\x99s choice without changing too much code.
3. www.geeksforgeeks.org/sliding-window-maximum-maximum-of-all-subarrays-of-size-k/

It is a good thing if you have heard the question already. But I would suggest thinking on your own instead of remembering the solution in case you forgot the solution. Don\xe2\x80\x99t panic at all. Try to solve the problem as if you haven\xe2\x80\x99t heard it at all before.

Round 3:\xc2\xd0(Technical Interview 2, 1 hour) The interviewer was a little experienced. In this round, the interviewer discussed the **projects** I have written on my resume. Please mention only those projects that you can explain. I only wrote 3 projects. He asked me to choose 1 and explain. While I was explaining, there are some questions interviewer asked. I gave him a satisfactory reply. This is more like a discussion. This discussion was of around 20 minutes. Then there is a 5-minute discussion on my **internship** followed by a simple algorithmic problem.

www.geeksforgeeks.org/find-minimum-element-in-a-sorted-and-rotated-array/

After this, there is a 20-25 minute discussion on designing an optimal data structure for two types of queries.

1. Inserting a post office in a data structure. Details of the post office are in order: **Country, State, City, Town, Post office Name**. This order is always the same.
2. Printing all the post office in the given region. The region may only involve a country or a combination of country and state, etc. But remember for any state, the country will always be given. For any town, Country, State, and City are given.

Here, ask the questions to the interviewer. The problem statement is a little vague in this case. It involves **hierarchy**. So, anyone would have come with a solution of the tree. But remember, the

solution is how to store the tree. The adjacency list is not a good option here. Notice that the number of level in the tree is fixed. So, here we can store **each level as a hash map or BST**. The hash map is obviously better but as I have said BST as a solution. There was a discussion on BST too. So, BST was good in terms of worst time complexity while the hash map is good at average time complexity. There was a little more discussion as I was in doubt how to modify Data structure if there is one more level. But after the discussion, I got it. In the end, the interviewer said that it was a good brainstorming session.

Round 4:\xc2\xd0(Technical Interview 3, 1 hour) This round again begins with the **project discussion**. I explained to him the same project that I explained in previous interviews. But I faced some new questions regarding the project in this interview. Then he comes up with a data structure problem. I have given the solution to him but he stopped me to write the code when I told him\xd0the problem is very similar to the problem from the first round. However, the problem was:

<https://www.geeksforgeeks.org/print-binary-tree-vertical-order-set-2/amp/>

Then, he asked one problem again:

www.geeksforgeeks.org/find-the-largest-subarray-with-0-sum/

Here I came up with the solution that involves two traversals of the array. The time complexity is, however, $O(n)$. But he asked me to solve the problem in 1 traversal. At that point of time, I was not able to come up with the approach. So, he asked me to write the code. While writing the code, I came up with the solution in a single traversal. I told him the approach. Then again he asks some questions regarding the solution. Basically, these questions tell you where you are wrong and you are expected to correct your solution.

After this, he asked whether I know DBMS. I told that I learned it in my 2nd year. So, not very confident about it. But, I added that you can ask me the questions. He asked some questions related to transactions which lead to the discussion of **deadlocks and critical section**. The critical section and deadlock problems are basically in the Operating System. He gave me some situation. I solved all those problems using **semaphores**.

Problems:

1. How to manage the critical section if two processes try to access that part. This can be solved using one semaphore. He further asked what if there are more than two processes. The answer is still the same.
2. He asked how to get and update the value in array at a particular index can be handled if more than one process tries to update and get the value at the indices. Here we would need n number of semaphores. One semaphore for each index.
3. He further asked what will happen if we use the same set of semaphores for update and get. The answer was we can not get and update the same index at the same time. He also asked\xd0what will happen if we use the different set of semaphores for update and get. The answer was we may get ambiguous values if we update and get at the same time.

These technical interviews were onsite. After this, the final (Bar Raiser) round is to be held on the telephone. This interview held after a month.

Round 5:\xc2\xd0(Bar Raiser Round, 35 mins): This round starts with a simple introduction followed by some discussion on my internship. The collab edit link was shared with me. He asked me to solve a coding problem on the editor. I tell him the approach for the problem which was not fully correct but he was satisfied with the solution. Sometimes, it is more about your approach instead of correctness. So, being confident always helps. The problem was:

Given some equations involving the division of single-character variables like $a/b = 2.3$ $b/c = 3$ etc, find the value of expressions like a/a , b/a etc. Answer 1 if no solution exists. The problem can be solved using a directed graph where nodes are alphabets and edge $u \rightarrow v$ gives the value of u/v . So, expressions can be solved by traversing from one node to another multiplying all the edges in the path. Find the edge cases and ask the questions to the interviewer whenever the question is not clear.

In all the interviews, in the end, the interviewer will ask you to ask any question if any. Ask some good questions.

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Amazon Interview Experience | SDE Internship

- Last Updated : \n30 Jul, 2019

Amazon\xe2\x80\x99s selection process for SDE intern through Amazon Campus Mentorship Series.

Round 1: Two Coding questions + 20 MCQ from computer basics

First Question \xe2\x80\x99s <https://www.geeksforgeeks.org/maximum-sum-such-that-no-two-elements-are-adjacent/>

Second Question \xe2\x80\x99s <https://www.geeksforgeeks.org/longest-increasing-subsequence-dp-3/>

Around 20 were selected among 300 from my college for the Amazon campus mentorship series in which we were divided into teams, and a mentor was assigned to us for a project for 4 months. We had monthly sessions and project reviews with the mentor. There were 30-40 students from other colleges as well with us.

After 4 months, we had an online test

Round 2: Two Coding questions +6 Debugging questions + 20 Mental ability questions

1st coding Question \xe2\x80\x99s <https://www.geeksforgeeks.org/program-round-robin-scheduling-set-1/>

2nd coding Question \xe2\x80\x99s <https://www.geeksforgeeks.org/count-pairs-array-whose-sum-less-x/> (It was something similar to this)

Debugging and other rounds were easy

Round 3:Project presentation which we had done for 4 months\xc2\xa0

The panel basically wanted to know about the concepts you learned while making the project and your involvement.

The online test and presentation marks were added and around 25 people were selected for final interview round.

I was one among them.

Round 4- The interviewer for very friendly and asked me what data structures i am comfortable with

I said trees, graphs, linked list, stack queue etc

Then he asked me the following questions

<https://www.geeksforgeeks.org/a-program-to-check-if-a-binary-tree-is-bst-or-not/>

<https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/>

<https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/>

<https://www.geeksforgeeks.org/given-an-array-a-and-a-number-x-check-for-pair-in-a-with-sum-as-x/>

In every question, he wanted me to reduce the time complexity, in the last question i gave him a solution using sorting but then he asked me to give another solution without sorting, i said hashing, he was satisfied with that.

For every question, he wanted me to look for corner cases.

The interviewer not only looking for answer, he wanted to see your problem solving abilities . In the 3rd question, I struggled a little but then after some discussions I was able to come to the correct answer.

After some days we got the results and I was selected for SDE Internship at Amazon
\\xf0\\x9f\\x99\\x82 \\xf0\\x9f\\x99\\x82

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Amazon Interview SDE-1 (Experience- 1 year)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n30 Jul, 2019

Round 1: This round was online written test on hackerrank platform. There were two questions

1. Connect N ropes with minimum cost problem.
 1. Article : \xc2\xxa0<https://www.geeksforgeeks.org/connect-n-ropes-minimum-cost/>
 2. Practice : \xc2\xxa0<https://practice.geeksforgeeks.org/problems/minimum-cost-of-ropes/0>
2. Given Two arrays, first array represents the *forward distance* and second *return distance*. There is a maximum distance\dist. Find all the pairs (first number from first array, second number from second array) such that sum of the pair values is less than equal to\dist (*needs to find maximum possible sum pairs*). \xc2\xxa0\xc2\xxa0**Note :-**\xc2\xxa0The sum of all the pairs should be same.\xc2\xxa0 So try to maximize the sum.

For next round :- You are suppose to write code on the paper and they expect you to write the production level code and multiple test cases will be given to do dry run on the code.

Below are onsite interviews.

Round 2:

1. Tell me about yourself ?
 2. Given A BST, decrease the value of node of even rank nodes by k, when you will do reverse inorder traversal(sorted in decreasing order)?
 3. Given a circle and there are n flags on the circle boundary each flag have a index value and it\xe2\x80\x99s length. And the flags do have a property **F[i] > F[j]** where **i>j** for every i and j. There is a number **k(0<=k<=n)**, at\xc2\xxa0k\xc2\xxa0index break the circle into the array, now find the minimum element in the array in **O(log(n))**?
1. **Article :-**<https://www.geeksforgeeks.org/find-minimum-element-in-a-sorted-and-rotated-array/>
 2. **Practice :-**<https://practice.geeksforgeeks.org/problems/minimum-element-in-a-sorted-and-rotated-array/0>

Round 3:

1. Tell me about yourself?
2. Tell me about your current project?
3. Reverse a linked list in group of k. Solved this for all the possible **corner cases**.
 1. **Article :-**<https://www.geeksforgeeks.org/reverse-a-list-in-groups-of-given-size/>
 2. **Practice :-**<https://practice.geeksforgeeks.org/problems/reverse-a-linked-list-in-groups-of-given-size/1>

Round 4: This round was Hiring Manager round.

1. Tell me about yourself?
2. Any new initiative you took in your team?
3. Why do you want to join Amazon?
4. Tell me about your current project?

5. MVC in Angular?
6. Any challenge, you might have faced in your project?

Telephonic round :-

Round 5: This was Telephonic round, there was a shared interface, where I had to code.

1. Tell me about yourself?
2. There is an array given of size N, in which next element is +K or -K of the previous element. $A[i+1] = A[i] - \{0, 1, 2\}$ or $= A[i] + \{0, 1, 2\}$. Now you are suppose to search an element X in the array in less than $O(N)$.

1. Article :-<https://www.geeksforgeeks.org/searching-array-adjacent-differ-k/>

After waiting for weeks I finally got mail from Amazon ! xf0\|x9f\|x99\|x82 . Thanks GeeksforGeeks.

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Amazon SDE Interview experience (July20, 2019)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n24 Jul, 2019

I got call from HR through Naukri and scheduled on July 20, 2019. I went through three rounds of interviews.

Round 1:Written Test

1. <https://www.geeksforgeeks.org/ways-paint-stairs-two-colors-two-adjacent-not-yellow/>
2. <https://www.geeksforgeeks.org/rearrange-linked-list-alternate-first-last-element/>
3. <https://www.geeksforgeeks.org/zigzag-tree-traversal/>

Round 2:

1. <https://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree/>
2. <https://www.geeksforgeeks.org/lru-cache-implementation/>
3. <https://www.geeksforgeeks.org/bottom-view-binary-tree/>

Round 3:

1. <https://www.geeksforgeeks.org/trapping-rain-water/>
2. <https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/>
3. <https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/>

I have given the approaches for all the problems and even wrote code, Had some problem at writing code for last question but approach was good however she rejected me. Hard Luck!!!

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Amazon Interview | SDE-1 (On Campus)

- Difficulty Level :\n[Easy](#)
- Last Updated :\n22 Jul, 2019

Round 1: This round was an online round on mettl. There were 2 coding questions and 28 multiple choice questions. The time limit was 90 minutes.

Question 1: Given an integer n, and an integer array of size n, return the number of inversions in the array. $0 \leq n \leq 1000$. <https://www.geeksforgeeks.org/counting-inversions/>

Question 2: Given n and m and an integer array of size $n*m$, return the Maximum of sum of row + Maximum of sum of column if this array was a 2-d array of size $n*m$.

Example: n =2, m =2, Array [1, 2, 5, 6] return 19. Easy implementation question.

They shortlisted around 50 students for the next round. Those who had done both the coding questions and some mcqs correctly were shortlisted.

Round 2: This was a F2F technical round. The interviewer asked me to introduce myself, and then started with coding questions.

Question 1: Top View of a Binary Tree. <https://www.geeksforgeeks.org/print-nodes-top-view-binary-tree/>

Question 2: Given the arrival and departure time of trains, return the minimum number of platforms required such that no train has to wait.\xc2\xab0 <https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/>

First had to explain the approach and write the code on paper, after this he asks to dry run some cases on the code written. Then he asked me if I had any questions for him, after this the interview ended.

Round 3: This was also a F2F technical round. The interviewer asked me to introduce myself, and then asked me some questions on relational and non relational databases, acid properties and transactions. Then he gave me a coding question.

Given the head of a linked list of integers, and 2 integers, we had to swap the 2 nodes. I told him, as this is integer linked list, we can just swap the 2 integers and not the pointers, and then said, if this was not an integer array, but had some other data of big size, then we can swap the nodes and do. He asked me to explain the second approach, and then write the code for it.

He then asked me to explain some oops concepts like polymorphism, difference between objects and reference, etc. Then he gave me other coding question.

Given an array of integers, for all elements in the array, return the just greater element in the right side of the array.

Array : [5, 3, 5, 4, 7, 6, 9]

return [6, 4, 6, 6, 9, 9, -1]

This can be done using balanced bst, starting from the end of the array, start constructing a balanced bst or avl tree, and search.

Then he asked me if I had any questions for him, after this the interview ended.

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Amazon Interview Experience (On-Campus)

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 22 Jul, 2019

Amazon On-Campus Hiring : 2019

\xc2\xd0

Round-1 (Online coding round):

It was 90 minutes long coding round on mettl test. It consisted of 2 coding questions and 28 MCQs. Coding questions were easy to medium category. First question was to change one string into another with some modification (pretty much implementation question). In second question, you are given a string containing only 0 to 9\xc2\xd0 and you have to return string number modulo 11.\xc2\xd0 Around 60 people were selected for further rounds.

Suggestion: If you use c or c++ then please revise your pointer concepts because function inputs and return type are pointers on mettl. Also revise static and dynamic memory allocation because if you don\xe2\x80\x99t allocate memory using new or\xc2\xd0malloc\xc2\xd0 then your return pointer will point to NULL (many people got stuck).

\xc2\xd0

Round-2 (Face-to-face interview-1):

The Interviewer was very nice and calm. He started with asking me to introduce myself.

Q1. You are given two linked lists. Every node contains a digit between 0 to 9. You have to make new linked list that contains sum of both linked lists. Also you can not modify given linked lists.

Example :

input1 \xe2\x80\x93 head->7->9->NULL.

input2 \xe2\x80\x93 head->3->6->2->NULL.

output- head->4->4->1->NULL.

Q2. Hotel XYZ wants to conduct N meetings on particular day. You are given start time and end time for each meetings. You have to return minimum numbers of rooms required in XYZ hotel.

Example:

input \xe2\x80\x93 N : 6, \xc2\xd0 meetings timing \xe2\x80\x93 [9:00, 9:45], [9:30, 10:30], [10:40, 12:00], [11:00, 13:00], [11:45, 14:00], [16:00, 17:00]

output \xe2\x80\x93 3 rooms required.

He asked me to write down proper code for above questions. He tested it with some edge test cases. Then he asked me about different sorting techniques and questions like \xe2\x80\x93 for which cases quick sort runs O(n^2)\xe2\x80\x93. This round lasted for an hour.

\xc2\xd0

Round-3 (Face-to-face interview-2):

The interviewer started with asking about myself and then moved to projects that I have done. After some questions on projects, \xc2\x0 he started with the data-structure questions. I have to write proper code for both questions.

Q1. You are given a binary tree. You have to print it\xe2\x80\x99s outer border anti-clockwise.

Q2. You have given N x M matrix. each element in matrix is either 0, 1 or 2.

\xe2\x80\x980\x980\xe2\x80\x99 digit means that place is initially empty. \xe2\x80\x981\xe2\x80\x99 digit means that place contains \xe2\x80\x9cgood\xe2\x80\x9d mango. \xe2\x80\x982\xe2\x80\x99 digit means that place contains \xe2\x80\x9cbad\xe2\x80\x9d mango. In one day iteration, \xe2\x80\x980\x9cgood\xe2\x80\x99d mango which is adjacent (up, down, left, right) to any \xe2\x80\x980\x9cbad\xe2\x80\x99d mango will become \xe2\x80\x980\x9cbad\xe2\x80\x99d mango. You start from first day and you have to find the minimum day when there will be no \xe2\x80\x980\x9cgood\xe2\x80\x99d mango or output -1 if it is impossible.

I took too much time in first question. So, I did not come up with optimized solution for second question and had to give brute force one.\xc2\x0 This round lasted for 45 minutes.

\xc2\x0

Round-4 (Face-to-face interview-3):

I feel like this was the most difficult round for me but i got solution within some minutes.

Q.\xc2\x0URL requests are coming in some server. Now you have to design some type of data-structure such that at any point of time you can return top 100 frequently coming URLs.

I came up with solution using hashmap and heap. But I am not allowed to use STL so i have to write implementation for hashmap and heap. Then he asked me some questions about OS, OOPs, and DBMS. This round lasted for an hour.

\xc2\x0

Round-5 (Face-to-face interview-4):

This was the last round. The person interviewing me was looking like some senior developer. He stared with asking me about my area of interests, projects I have done, \xc2\x0 etc. Then after some time he started DP question.

Q1.\xc2\x0You have given rod of length n and array containing rod length and price. Now you have to return maximum price by cutting rod optimally.

Q2.\xc2\x0You have given an array. You have to find next maximum for every index. -1 if there is no next maximum in array.

Then he started asking about OS questions like difference between process and thread, what is\xc2\x0thrashing, what is process table and how it is used, different kinds of CPU scheduling algorithms, what are indexes (DBMS) and why and where they are used, mutex vs\xc2\x0 semaphors, etc. Then he asked me two SQL queries. This round lasted for more than an hour.

\xc2\x0

After one and half days of process, I was selected for the Amazon Winter Internship.

\xc2\x0

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Amazon Interview Experiences for Internship (on campus)

- Difficulty Level :[Medium](#)
- Last Updated :[22 Jul, 2019](#)

Amazon visited our campus(DAIICT) to recruit interns and FTEs. I'm sharing my internship interview experience. There were 2 rounds in all : 1 Online Round followed by 1 F2F Interview.

Online Round(90 min):

There were 24 questions based on Logical Reasoning, 7 questions based on Debugging and 2 questions of coding.
The 2 coding questions were:

1. Sum of two number which is closest to K but the only condition is the sum of two number must be less than K. If there is more than one answer possible, print any.

Ex: Array: {2, 1, 4, 9, 2, 3, 8, 3, 4} and k = 18
Ans: 9, 8

Ex: Array: {2, 1, 4, 9, 2, 3, 8, 3, 4} and k = 12

2. You are given an array A of size m*n matrix. It contains 1, 0 where 1 means path is allowed and 0 means path is not allowed. One cell contains 1. You have to start with cell (0, 0) and find out whether it is possible to reach at the cell which contains 1. You have to start with cell (0, 0) and find out whether it is possible to reach at the cell which contains 1.

Ex: A: {1, 1, 0}... {9, 1, 0}... {0, 0, 1}... Ans : 1

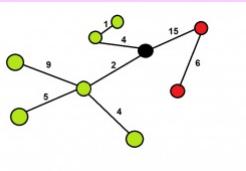
Ex: A: {0, 1, 0}... {9, 1, 0}...

Out of around 250 students, 53 were shortlisted for Round 2.

->**Doing MCQ (Logical Reasoning) was important.** Few students who solved both the coding question but didn't attempt the MCQs were not selected while some who could solve 80% of 1 question(8/10 test cases) and few MCQs were selected.

Round 2: FTF Interview (Around 90 mins):

1. The interviewer asked me some HR questions like **Why Amazon?**, **Introduce myself**
2. [Reverse every k node.](#)
3. Then he asked me a question on the graph. I told him that I have not prepared for it, but I had a course called design and analysis in my semester 3 so I will try to recall that and try to answer your question. 1) given n cities and every city is connected via m roads. There is no cycle in the graph. Each road between city x and city y has some traffic denoted by weight of the edge. Each city has one stadium. Now suppose in one city, a cricket match is conducted and all other cities people come to that city to watch a match. Total traffic denoted by the sum of edges of all city. The task is to find maximum traffic coming to that city at any point in time.



- Suppose the match is in the city coloured with black. So traffic coming to that is from 3 sides. one from the group of three cities and traffic will be $(9+5+4=20)$, second will be from $(15+6=21)$ and third will be $(1+4=5)$. so ans will be max of these and thus ans = 21.
- When he gave me this question I don't know the answer but I tried a lot. I gave him around 3 approaches and discussed with the interviewer but he said that my approach is wrong. But then I tried and never give up. Then he gave me the hint to do bfs and then dfs from neighbouring. I got a hint and answered the question and wrote code. Then, he asked me if I had any questions for him.

Out of the 53 selected for the interviews, 13 were finally selected for the internship.

Verdict: Selected.

Tips :

1. Never lose hope and confidence.
2. If you don't know the ans then it's ok, try to solve that question and never give up and say that sir I can not able to do this.
3. Try your level best. Discuss with the interview. Interviewer always sees your patients and thinking ability.
4. And in case of a theoretical question, if you don't know the ans tell them sorry sir I don't know the ans rather than giving them wrong ans.

During my preparation geeks for geeks, indeed, was a great help. Almost all the questions asked in the interview were from geeks. A big thank you to other geeks as well for sharing their interview experiences as going through past experiences was the perfect way to end my preparations.

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Amazon Interview Experience (SDE-1)| Off-Campus | Recruitment Drive

- Difficulty Level :[Hard](#)
- Last Updated :[07 Jan, 2020](#)

Hi All, Amazon conducted a drive for both SDE-1 and SDE-2 in July 2019 in Pune.I applied for the SDE-1 position.I got a call from a recruiter who specifically told me to brush up my coding and data structure fundamentals and told me to practice on paper.

Round 1:

The first round was coding test on paper . We were asked to write code on paper for three questions.

1)When you ask Alexa to buy bananas, we query different catalogues (Prime, Whole Foods, Pantry etc).Each one of these come back with a sorted list of items that we need to merge together to have only one list.Write a function to merge the results and display top 10 items.Also mention the time and space complexity of your solution.

This question was similar to Merge K- sorted list when you can use the Priority Queue for maintaining top 10 items.

2)Given a tree of management chain of a company.Print the names of each employee who has specified number of reportees in the chain.

[Pic of management tree](#)

Input: 1

Output:

Lannister

Bronn

3)Implement a function to block a meeting room for a given time window.The meeting room cannot be booked for overlapping sessions.

Input:(11:00, 13:30)

Output:

Meeting booked(If no conflict with all existing meetings)

Meeting rejected(If conflict with any existing already booked meeting)

After an hour, they announced the result for the written round.

Round 2:[Q2](#)

In this round the interviewer asked 4 questions .

1)[Count number of ways to reach destination in a Maze](#)

2) You are given n socks and color of each socks. You are also given the description of which socks to wear on which day. Find the minimum number of socks whose color have to be changed so that you the two socks color at each day must be same.

Example:

Color: 2 3 1 4 5

Sock : 1 2 3 4 5

Day \xe2\x80\x93 Sock no

1 \xc2\xa0 \xc2\xa0 \xe2\x80\x93 2, 3

2 \xc2\xa0 \xc2\xa0 \xe2\x80\x93 1, 5

3 \xc2\xa0 \xc2\xa0 \xe2\x80\x93 2, 4

Find minimum number of socks whose color we can change so that at any day both socks color is same.

This question can be solved by assuming the particular day socks as an edge of a graph.

[3\) Find a element in a sorted rotated array.](#)

4) Find number of connected components in a graph.

<https://www.geeksforgeeks.org/connected-components-in-an-undirected-graph/>

Round 3:

In this round i was asked about my experience of working on microservices and the use \xc2\x00case of cache which i used in my project.

He asked me the Spring Boot Framework basic principles and difference between the Spring and Spring Boot.

He asked me to write a code to generate a random without using Java.lang.

Round 4:

In this round the interviewer asked me questions on design.

1) Consider there are logs which consists of sequence of webpages visited by a customer. We have to find the most occurring sequence \xc2\x00of length k in the sequence of web pages of all customers.

Example:

Log 1- p1->p2->p3>p4->p5 \xe2\x80\x93 a6

Log2- p3->p4->p8 \xe2\x80\x93 a6

Log3- p2->p3->p10 \xe2\x80\x93 a6etc

so p2->p3 will be the most occurring sequence of web pages \xc2\x00of length 2.

He also asked how can i handle a sync when different log files are coming from different hosts in a

system.

2) Consider there is a book . I was asked to write code to find the min/max distance between an occurrence of a word in the book(distance here means the number of pages)

He asked me to write a data structure to define a book and the other data structure for defining an index as well.

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Amazon Interview Experience | SDE-2

- Last Updated : \n16 Jul, 2019

Round 1:

1. [Sort an array of 0s, 1s and 2s](#)
2. [Diameter of Binary Tree](#)
3. [Nodes at given distance in binary tree](#)

Round 2:

1. [Count of different ways to express N as the sum of 1, 3 and 4](#)
2. [Find whether it is possible to finish all tasks or not from given dependencies](#)

Round 3:

1. This round was design round. So interviewer given me problem statement to design an xc2xa0shuttle system. Interviewer was expecting xc2xa0 I should suggest some features and he was concerned about scalability and complexity (not in terms of algo, in terms of what if traffic grows 100 times then will your system work).

Round 4: xc2xa0

1. This round was bar raiser so most of discussion was around micro services architecture and database. He asked me some general questions.

Round 5:

1. This round was hiring manager round so most of discussion about work which i have done in past. He was concerned about my approach to solve problem. You must be sure what are you saying.

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Amazon Interview Experience | Off Campus for SDE-1

- Difficulty Level : \n[Hard](#)
- Last Updated : \n16 Jul, 2019

I took a referral from senior working in Amazon and got online test link. There were two coding questions and few MCQs based on OS and Networking and other CS fundamentals. Coding questions of 20 marks while each MCQ carry +3 for correct and -1 for the wrong answer. The coding questions were as following

1. There is a string let\x{e2}\x{80}\x{99}s say ABCDJHGDCBA. You can cut string once and append left part to right string. There is one rule while appending the string, i.e., at the joint of two strings characters keep canceling out each other till they match. So we have to print the minimum length of the string we can get after cutting and attaching the left and right half.

For example, we cut given string in AB and CDJHGDCBA then after addition, the result will be CDJHGDC. So minimum length we can get by ABCD & JHGDCBA. Basically, we have to find how much length is matching from left to right. And then subtract twice of matched length from the length of string.

2. Given some chocolate type id and their quantity. Also, it is given the priority order of chocolates in which you will eat chocolates. When you finish one type of chocolate then only you will eat other types. Also, you can eat only one type of chocolate on a given day. You have to eat at least one chocolate per day and at max, you can eat any amount. Given Q queries each consisting chocolate id and day number. You have to print YES if you can eat that chocolate id on given day else print NO.

I solved both coding questions and a few multiple choice question and my laptop shut down in between, so the test was terminated at that point. Still, I got an interview call.

Round 1:

First Question

[Find the first circular tour that visits all petrol pumps](#)

Second Question

[Maximum sum such that no two elements are adjacent](#)

Wrote fully functional code for both.

Round 2:

He asked which element will come at Kth place after sorting the array.

At first, I told him to use min heap of K elements then he restricted me to use extra space. Then I told him the quicksort method. Then he told to write the code.

[Kth Smallest/Largest Element in Unsorted Array](#)

Second question

There is BST and you will be given a number from it and a new number such that if you will replace the old number from new number BST properties will not change. So you have to write the code to clone new BST such that old number is replaced with new one such that we allocate minimum memory. There was lots of ambiguity the way he asked, So it took nearly 15 minutes just to clear the question.

Basically we have to write following code:

```

node* cloneNewBST(node* root, int oldVal, int newVal){
    if(root->data==oldVal){
        node* temp=createNode(newVal);
        temp->right=root->right, temp->left=root->left;
        return temp;
    }
    else if(root->data<oldVal){
        node* temp=createNode(root->data);
        temp->left=NULL;
        temp->right=cloneNewBST(root->right, oldVal, newVal);
        return temp;
    }
    else{
        node* temp=createNode(root->data);
        temp->right=NULL;
        temp->left=cloneNewBST(root->left, oldVal, newVal);
        return temp;
    }
}

```

Round 3:

First question was to sort a linked list using merge sort.

Second question

[Trapping Rain Water](#)

Wrote code for both.

Round 4:

There were two interviewers.

This round was a quite difficult one. Asked questions related to deadlock, LRU Cache algo indirectly (not mentioning LRU Cache but using another story which does similar to LRU cache).

- Splitwise algorithm
<https://www.geeksforgeeks.org/minimize-cash-flow-among-given-set-friends-borrowed-money/> told the algorithm using heap for this question.

\xc2\xab

- [Boggle \(Find all possible words in a board of characters\)](#) In this question they wanted as much optimization we can.
- There is a city in which you have to assign aadhar numbers starting from 1. If one person dies then you can assign his aadhar number to another new person. You will assign the first possible aadhar number for any new entry. They discussed data structure and how will we do it efficiently.

Verdict: Selected

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Amazon Interview Experience for Quality Support Associate

- Last Updated : \n11 Jul, 2019

Amazon Quality Support Associate Walk-in: May 2019(Chennai)

Initially there were 2 rounds.

Round 1: GENERAL APTITUDE(MERITRAC)

Everyone will be given OMR Sheet to answer. There are 40 questions.

Section-A : English

In English, There are five comprehension and 15 grammar questions like preposition, articles etc.

Section-B : Logical Reasoning

In Logical Reasoning, topics like coding and decoding, five questions about seating arrangements and blood relations questions.

Results are announced in next 20 minutes

Round 2: TECHNICAL FACE TO FACE

The hr asked about the following testing questions.

- 1.Regression Testing and explain with example.
- 2.What is SDLC?
- 3.Explain SDLC with any example.
- 4.Difference between SDLC and STLC.
- 5.What is Software Testing
- 6.What is black box and White box testing.
- 7.What is Defect Life Cycle with example.

Results are not announced that day. They asked the candidates to leave for the day.

After one month, June I got mail to come for further interview process.

Round 3: TECHNICAL FACE TO FACE

The hr asked about some personal informations and he asked about the final year project details and questions like

- 1.why you choose testing instead of programming
- 2.what are the types of testing
- 3.Difference between Regression testing and retesting with example.

The HR asks some Logical questions like how you cut the cake which is not in shape etc.

Results are not announced

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Amazon Interview Experience for SDE-2

- Difficulty Level :\n[Hard](#)
- Last Updated :\n16 Jul, 2019

Round 1:

Time: 1hr

1. Introduce yourself.
2. Roles and responsibility at my current company.
3. How do you write code (first code then test cases or first test cases then code).

Then the interviewer shared a google doc and asked to write code and logic on that doc only.

1. Simple Binary tree based question.
2. Second question was also based on binary tree. Write full code and asked me to execute some given test cases.
3. [LRU cache](#). Again full code with test cases.
4. There was some time left so he asked me to provide another approach for 2nd problem.

Got an onsite call for Hyderabad.

By all these rounds the interviewer keeps a laptop with him and keeps on writing the feedback.

Round 2:\xc2\xd0

Project based discussion:

1. Introduce yourself.
2. Explain the working of your current project. Draw it on the board.
3. Project based discussion:
 1. Have you ever had any conflicts within the team.
 2. Have you ever disagreed with your manager.
 3. Have you ever proposed your solution and made it happen.
 4. Have you ever proposed your solution and could not make it happen.
 5. How do you cover your code and make sure it is tested fully.
 6. Have you made any changes to make the system more efficient.

Round 3:

Coding Round

1. Introduce yourself. What project you have worked on.
2. The questions asked were more of a competitive programming based problems.
3. I don\xe2\x80\x99t exactly remember but it was something there is an infinite number of students and I have to select the student who gives the unique answer first.
4. I proposed a solution. It will work fine.
5. Then asked to optimise it further. I gave another solution and he was satisfied with the solution and asked me write the code for it.

Round 4:\xc2\xd0

Coding Round : Bar Raiser Round

1. Introduce yourself. How have your rounds been going.
2. [Given an array of integers and k number of swaps create the largest number possible.](#)
3. How do you write test cases. Write all the test cases including as many edge cases as possible before writing the code.
4. Proposed a solution. Again further optimise it.

Round 5:

High level System Design Round

1. Introduce yourself.
2. Design a grocery store, which will uses the inventory of Kroger(third party inventories) at the backend but at the front end the customer sees Amazon only.

Round 6:\xc2\xd0

Low level System Design Round

1. Gave me a sheet of paper with some code written on it and asked me to find bugs. Then asked me to suggest how it should have been written. What all is missing then add it.
2. Design Vending machine. (State Design Pattern)
3. Write use cases for the above and then write a fully working code on paper.

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Amazon Interview Experience(2 years Experienced)

- Last Updated : \n16 Jul, 2019

I recently got interviewed in Amazon Chennai for SDE1.

Round1: Was a written round that contains 3 programming question. (Need to write an optimized code).

- [Given a sorted array and we need to make a balanced BST out of it.](#)
- [Given a boolean 2D matrix which is row-wise sorted. Need to print the line which contains maximum no of 1's.](#)
- [Next larger element](#)

Round2: Was a F2F interview.

- This round is started with the introduction and then a coding question.
[From a given array print all the unique triplets which add up to zero.](#) The interviewer is expecting a solution in $O(n^2 \log(n))$ or better.

Round3: Was a F2F interview.

- In this round Interviewer discussed in brief about the projects in my current company and about my role in the project.
- Coding question [Given a tree print all the nodes\(up and down\) which are k distance from a particular node.](#)

Round4: This is a bar raiser round.

- A brief discussion of my current role.
- Given a graph write a function to find if it a tree or not. (Also asked few more graph-related algorithms)
- Few puzzle questions.

Round5: F2F interview.

- Given a lot of strings write a function to find words which are mutually inclusive in most of the strings.
- Then asked a few more question related to the above question.
- Convert a float to a string without using any inbuilt functions.
- Few puzzle questions.\xc2\x97 And discussion of Projects.

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Amazon Interview Experience | Off-Campus for SDE1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n23 Jul, 2019

Amazon SDE1 hiring (Off-Campus): June 2019

There were 5 rounds.

Round 1: (Paper Coding)

Q1. A person is standing at the center(0, 0). He is facing north(N). There can be 4 possible commands \xe2\x80\x93 Turn left, Turn right, Move ahead, Move back. Find the final coordinates after a set of instructions. This is an easy implementation problem.

Q2. [Find longest palindromic sub string in a given string](#). This can be approached top-down or bottom-up (DP).

I had to wait 3 hours for the result of this round. Every round was an elimination.

Round 2:

Q1. [Given a binary tree. Find if there is path from root to leaf with given sum X. After I answered the question, interviewer asked me to print all possible paths for the previous problem.](#)

Q2. [Given a binary tree. Add links in binary tree in such a way that all the nodes on a level form a linked list.](#)

Interviewer asked me if I have any questions.

Round 3:

I was given a brief overview about the team for which hiring is going on \xe2\x80\x93 Amazon Payments Team.

Q1. This was somewhat related to modified [spiral traversal](#). I can vaguely describe the problem as printing even level nodes (starting node 0) right to left and odd level nodes left to right. Also, the order of printing levels is \xe2\x80\x93 0, 2, 1, 4, 3 \xe2\x80\x93

Q2. This was a question related to data structure design where interviewer told me that I just need to explain different approaches. Lets say DJ is using an application (something like Amazon Music) where he is getting requests from people and then he is picking Nth popular song among current requests. There are two functions \xe2\x80\x93 GetRequest() and NthPopular(). Discussed different approaches to store song requests and then ways to retrieve Nth popular by checking count. In these types of questions, it is very important to clarify the requirements and then start discussion.

I must say that interviewer was very supportive.

Round 4:

Brief introduction about myself.

Q1. [Given a binary tree, a node N and distance K. We need to find count of all nodes which are at distance K from N.](#)

Q2. [A matrix is sorted row-wise and column-wise. We need to find if a number N exist in this matrix.](#)
I gave a O(MlogN) solution. We were already running out of time, so she hinted me and then I was able to come up with O(M+N) solution.

Round 5:

The person interviewing me was senior development manager of some other team. Also, I had a feeling that this is a bar-raiser round.

I was asked to introduce myself. Then he asked me about projects in my current company. There were few questions like "Tell me about your most challenging work. Was there a situation where you faced any conflict and how did you resolve it? Was there a situation where you took initiative to do something? These questions are asked to examine Amazon's principles. Also, in this round, you are the one who is actually driving the interview. The moment you use a term, you can be asked different questions on it. The entire discussion took 1 hour.

Then, there was a programming question counting all pairs in an array whose sum is X. I answered an approach which stores count (maps) of all numbers and checking the count of (X - num) where num is an array element and then doing calculations. It appeared to me that he was not expecting this answer. Then I answered the approach of maintaining two pointers start and end. He said I could code any of the approaches. I coded the second approach but missed one test case.

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Amazon Data Engineer Internship interview experience

- Last Updated : \n29 Jun, 2019

Round 1: Online round on HackerEarth

Most Amazon internships have an online round where generally 20 MCQs and 2 coding questions are asked for 90min. This time it was quite different. There were 65 MCQs related to SQL, DBMS, BigData, Hadoop, Java, Python, Aptitude, OS.

Some questions had negative marking, some didn't. Negative marks also varied for different questions.

In this round, most sql questions were on joins. BigData and Hadoop questions were very basic(if someone anytime studied bigdata). OS questions were theory based.

Round 2: Technical Round Face to Face (~40 minutes.)

My interviewer was a chill person. The first question he asked me was 'Please tell me something which is not there in your resume?'. I did that. Please make sure you know everything about yourself :p .

We discussed about our projects and then he asked two questions.

Question 1: Coding. Given a file which has different numbers in each line. Read the file and if a number is divisible by 5 print('a'). if it's divisible by 3 print('b'). if it's divisible by 15 print('c');

It was easy. I used python and wrote the code.

Question 2: He gave me three tables and asked to write an sql query to get some data out of the tables. I had to use joins to get the data.

Round 3: Technical + HR Face to Face (~50 minutes.)

He asked about my internships and projects in detail. He then asked me to write some sql queries.

Question 1: He gave me three parts in question 1 and difficulty level increased in each question. But still, there were basic questions.

He helped in the 3rd question a bit.

Question 2: Travelling salesman problem. He asked to code. I did it.

Question 3: Get the same output as question 1 using Python.

Using python libraries is allowed. I did it using pandas. (We can consider tables as csv files).

This was my interview experience. It was chill. I got selected too :p .

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Why companies like Amazon, Microsoft, Google focuses on Data Structures and Algorithms : Answered

- Difficulty Level : [Medium](#)
- Last Updated : [25 Jun, 2021](#)

If you're preparing for a tech interview of any big tech company like Adobe, Amazon, Microsoft, Google, etc. most probably, you would have known about the importance of Data Structures and Algorithms to crack these interviews. Yes, most of the interviews for technical roles in these companies are focused on measuring the **Data Structures and Algorithms** knowledge of the candidates.

So the question arises: **Why do Product Based Companies place so much emphasis on Data Structures and Algorithms?**



Software Product Based Companies normally create products that are related to software. So it stands to reason that they require quality **Software Developers** to handle the development process for the software. The pay-scale of Software Developers has increased a lot in recent times globally. According to the report by Glassdoor, the average base pay of Software Developers in India is found to be around **12 Lakhs per annum**. The average base of software developers ranges from **Rs. 4,00,000** to **Rs 20,00,000** per year (With Product Based Companies occupying the higher end of the spectrum).

Image Courtesy: Glassdoor

Software Development Engineer Salaries

5,121 Salaries Updated 22 Jun 2021

Average Base Pay



Image Courtesy: Glassdoor

However, there is an acute shortage of well-qualified Software developers in India. As per various standard reports, less than 10% of engineers are actually employable in software-related jobs. **That is where Data Structures and Algorithms come in.** They are so important in Product Based Companies interviews as they are the hallmark of any good Software Developer.

In addition to that, there are multiple reasons why **Product Based Companies** place so much emphasis on Data Structures and Algorithms as stated below:

1. Data Structures and Algorithms demonstrate the **problem-solving ability** of a candidate. There is no room to craft elaborate stories and this means that either the candidate can solve the problem or they can't.
2. Questions based on Data Structures and Algorithms can be **scaled up or down** according to the knowledge level of the candidate. This means that a variety of candidates can be tested using roughly the same problems.
3. Data Structures and Algorithms are used to test the **analytical skills** of the candidates as they are a useful tool to pick out the underlying algorithms in real-world problems and solve them efficiently.

4. Data Structures and Algorithms are the **fundamentals** of Software Development. They remain the same no matter what new technology is used and that puts the focus on the problem rather than the technology in the interview process.

Learning Data Structures and Algorithms

Now as we have established that Data Structures and Algorithms are important for interviews in **Product Based Companies**, let's focus on learning them.

Bad programmers worry about the code. Good programmers worry about data structures and their relationships.

While learning Data Structures and Algorithms, it is best to start small with simple topics and then move on to more and more advanced topics. Some of the basic data structures are **Arrays**, **Linked Lists**, **Stacks**, **Queues**, etc. while some of the basic algorithms are **Sorting**, **Searching**, etc.

Some of the major problems that can appear while learning Data Structures and Algorithms are:

- **Lack of guidance:** There is no clear guidance while learning Data Structures and Algorithms. There are numerous topics within these umbrella terms with no specific guidelines about which topics would be more useful for different Product Based Companies. This situation can be quite confusing, especially for a beginner.
- **No idea from where to start learning:** Even if the necessary topics in Data Structures and Algorithms are known, the sheer amount of them leads to a lot of confusion. Most beginners have no idea from where to start learning or even what chronological order to follow while learning.

To solve the above problems, we at GeeksforGeeks have designed a number of online courses to learn Data Structures and Algorithms at affordable prices. One of the latest courses created by us is the [Complete Interview Preparation](#) course. This course covers **Data Structures and Algorithms** along with other subjects in order to completely prepare you for placements in your dream company.

To learn more about it, read on . . .

Complete Interview Preparation Course

The [Complete Interview Preparation](#) Course is specifically designed for the **students and working professionals** to help them out in landing their dream job by providing them all the required stuff like premium lectures, theory notes, practice tests, assessment tests, etc. in a single place. In this course, along with **Data Structures & Algorithms**, you'll get prepared for other required subjects also like Computer Science Core Subjects, Programming Language, Reasoning & Aptitude, etc. Also, we know that the placement preparation requires some extensive research process and smart learning as not every subject holds the same weightage in the interview hence, this Complete Interview Preparation Course is extensively curated keeping this factor in mind.

Some of the prominent features of the Complete Interview Preparation course are listed below:

- Around 200+ algorithmic coding problems will be provided
- Track-based learning & Weekly assessment tests
- Premium **Video Lectures recorded by Sandeep Jain (CEO & Founder, GeeksforGeeks)** and other industry experts.
- Subject-wise Theoretical content & Objective Questions compiled by subject experts
- Lifetime access to the Course will be provided
- Course Completion Certificate & Internship Opportunities at GeeksforGeeks
- College Students will get the **year-wise weekly plan** for the course
- Free Access to Get Hired Premium at GeeksforGeeks Job Portal
- Dedicated TAs for the Doubt Assistance (Optional)

This course is originally priced at INR 9,999, but it is available at an **offer price of INR 6,999**. Also, if you want to add on the **doubt assistance** facility in this course, you'll be required to pay an additional amount of **INR 2,999** only. The Doubt Assistance facility will be valid for the complete 1 year from the registration.

DSA Self Paced Course

In case you wish to focus exclusively on Data Structures and Algorithms, you can opt for our latest online course to learn Data Structures and Algorithms named [DSA Self Paced Course](#), which covers everything about Data Structures and Algorithms from the Basic level to the Advanced level. It offers a wealth of programming challenges that you may face at your next job interview. The course focuses mainly on Data Structure & Algorithms as it the key to selection in top product-based companies.

Some of the Key Features of the Course are:

- Well-organized tutorials on Data-Structures and Algorithms prepared by the experts
- Premium video lectures by **Mr. Sandeep Jain**, Founder, and C.E.O of GeeksforGeeks.
- Weekly Assessment Tests with Video Solutions.
- Course Completion Certificate & Internship Opportunities at GeeksforGeeks
- Lifetime access to the Course

The price of the self-paced online DSA course is **INR 2,799**. Also, if you want to add on the doubt assistance facility in this course, you'll be required to pay an additional amount of **INR 1,499** only. The Doubt Assistance facility will be valid for the complete 6 months from the registration.

Geeks Classes \xe2\x80\x93 Live Session

Do you want to get live online classes on Data Structures & Algorithm to learn and master it\xe2\x80\xa6?? If yes, then we\xe2\x80\x99ve [Geeks Classes \xe2\x80\x93 Live Session](#) course for you. It will be an interview centric extensive online (live) program to build and enhance your DSA skills. The course is designed in such a manner that it will help you to improve your problem-solving and coding skills by enhancing your understanding of Data Structures & Algorithms. The primary goal of this course is to help you in the preparation for the Coding interviews of companies like Amazon, Microsoft, Uber, etc. As it will be an online live class \xe2\x80\x93 you can attend this class from any geographical location and can ask your doubts or queries as well to the instructor similar to an offline classroom program.

Some of the prominent features of this course are provided below:

- Doubt Solving Assistance (TA\xe2\x80\x99s)
- Limited Batch strength
- Course Completion Certificate
- 6 months access to recorded Live lectures of this course
- Other than that, you will also get complimentary access to the course content of the DSA Course.

This [Geeks Classes \xe2\x80\x93 Live Session Course](#) is being provided to you at a discounted price of **INR 10,999/-.**

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Amazon SDE-I Interview Experience

- Difficulty Level : \n[Medium](#)
- Last Updated : \n22 Jul, 2019

\xc2\xd0

I attended the Amazon Recruitment drive for freshers in Bangalore.

First 3 rounds were F2F pen-paper coding rounds of 45 mins each.

Round 1:\xd0

I was asked 3 questions in this round.

1) [Trapping the Rain Water Problem](#)

Suggested the solution by taking two arrays to store leftmax and rightmax for each element. Was asked to do it in constant space. I was able to do it by taking two pointers.

2.\xd0 [Maximum product Sub-array](#)

3.\xd0[Print nodes at a distance k from a given node](#). As a follow-up, was asked to print the nodes in sorted order.

Round 2:

Two questions were asked in this round.

1)

Given an n-ary tree, it consists of some bad nodes and good nodes. Nodes having value 1 are good and nodes with value 0 are bad. Problem was to count all root to leaf paths having less than K bad nodes.

Suggested a bottom up recursive approach. Interviewer was convinced but told me a top-down approach would have been an easier approach

2.\xd0 [LRU cache](#)

Round 3:

This was again a problem solving round only and 4 questions were asked.

1. [Search in a row wise and column wise sorted matrix](#)

2.\xd0[Count ways to reach the n\xe2\x80\x99th stair such that you are allowed to take only 1 or 2 stairs at a time.](#)

3) Find distance between leftmost leaf to rightmost leaf. I was told that by the interviewer that he will change the requirement and my code should be able to accommodate the changes.

Initially wrote a normal code counting the nodes from root to leftmost leaf and root to rightmost leaf. But he said he now wants to print the path. So wrote a recursive solution and interviewer was happy with the solution.

4) [Find 3 numbers in an array such that their sum is closest to a given number X.](#) Sum can be less OR\xd0 more than X i.e absolute difference is to be considered.

After 3 rounds the HR told me that I had cleared all 3 rounds and 4th round will be a video call which will happen in a couple of weeks.

Round 4:\xc2\xa0

This was a Bar-raiser round and was taken by a senior person.

- 1) Initially was asked to introduce myself.
- 2) Then I was to explain my internship project and then a few counter questions over it.
- 3)\xc2\xa0Two problem-solving questions which I had to code on a code-pair sort of a platform wherein the interviewer was able to see my code. These were the two questions :
 - a) A variant of [Merge k sorted arrays](#) problem.
 - b) [Delete all duplicate nodes in an unsorted linked list](#). Do this in one pass.
- 4) Why Amazon?
- 5) Did you ever face any issue in your internship project and how did you solve it?

With this round, the interview process was over. I got a call from the HR after a couple of days telling that the feedback was positive and I was hired \xf0\x9f\x99\x82

Thank you GeeksforGeeks for all the invaluable content. If you have solved enough problems on GeeksforGeeks, the interview should not be a problem at all.

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Amazon SDE I Off-campus Hiring

- Difficulty Level :\n[Hard](#)
- Last Updated :\n16 Jul, 2019

I have applied to multiple positions on LinkedIn. Finally, I got a mail stating that I can give my online test on Hackerearth platform.

Round 1:

It was for 90 minutes, consisting of 20 multiple-choice(negative marks for wrong answers) and 2 coding questions. The questions were asked from Data Structures, Operating Systems, Computer Networks, DBMS, Time complexity and recurrence relations. Most of them were taken from Gate preparation guide from GeeksforGeeks. Some of the questions include,

1. Circular Queue: find the front and rear after specific operations?
2. Increasing RAM increases performance because?
3. CPU handles an interrupt by executing an interrupt service routine by checking what?
4. Binary search recurrence relation?
5. Quicksort worst-case complexity when the pivot is the $n/4$ smallest element using an $O(n)$ algorithm?
6. The best time complexity for finding the nth Fibonacci number?
7. Tightest upper bound for binary search tree insertion?
8. Given some statements about ER and relational models, find the false statements.
9. Given some statements about threads, find the true statement.

Coding Questions include,

1. [Chocolates distribution problem](#)
2. Check if any sub-string and its reverse exist in a given array of strings.

After three days, I got the result and I was told to come to Amazon Bangalore campus for further technical discussions.

Round 2:

1. Tell me about yourself.
2. [Sort a given LinkedList.](#)
3. Find the number of disconnected components in the given directed graph.
4. Discussion about Dynamic programming and recursion.
5. Discussion about the team, that I was giving my interview for.

This round went for an hour and I was told to write the working code. I coded in Java writing all the necessary comments, importing all the necessary packages, handling all the exceptions and edge-cases. The interviewer was really impressed.

Round 3:

1. Tell me about yourself.
2. [Given two nodes, find the shortest path in the given binary tree and binary search tree.](#)
3. Given an infix expression as a string, evaluate it. We need to handle invalid strings, operator precedence, space characters, non-numeric characters, etc. Much importance was given to data structure as well.
4. Given a 2D maze, a man with a starting position, list of possible moves and a number k, find the probability after k moves the man will stand inside the maze.

This round went for more than 2 hours. For all the above questions, I was told to handle all the edge cases, and the interviewer was focused on the optimal solution and working code for all the problems.

Round 4:

1. Tell me about yourself.
2. [Count ways to reach the nth stair](#)
3. [Print all Jumping Numbers smaller than or equal to a given value](#)
4. Questions on deadlock, handling, and its prevention.
5. Questions on Java Strings and string pool.
6. How SSH works?

This round went for more than an hour questions I was asked about the reasons for which I was using specific data structures for the about coding questions.

HR told me that I was doing really good and I was told that I will have one more round and that will be a bar-raiser. After two weeks I got a mail saying that I will have the next round in three days. It was on Amazon Chime.

Round 5:

1. Tell me about yourself.
2. Deep dive into my internship project and my individual contribution.
3. Questions on HashTable.
4. Deep dive into LRU, and its working in real computers like what is stored in the cache.
5. Questions on page faults, thrashing.
6. [Two numbers with sum closest to zero](#)

This round was with a Senior Manager and a recruiter from Jordan. All the questions were focused on the depth of knowledge I had.

The first four rounds, I did really well and I was able to impress the interviewers and they were also happy with my performance. I felt that I was not performed well in the final round. Make sure you have a really good Internet connection. Amazon considers each and every round before rejecting a candidate. Most of the rounds were focused on Data structures, algorithms, time complexity and problem-solving. I prepared for System Design questions, but I was not asked anything about it as I am a fresher.

Companies like Amazon has policies that state that if a candidate has appeared for the interview and if he/she is not selected, then the candidate cannot apply for the next six months. Also, once you are in the interview process, you will never know when the further rounds will be scheduled and you will not get ample time to prepare. So, before applying for jobs, make sure you have prepared well.

Result: Selected.

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Amazon SDE 2 Interview Experience

- Difficulty Level :[Easy](#)
- Last Updated :[26 Nov, 2019](#)

Round 1: Written Round (pen and paper based)

1- [Print binary tree in zig zag order](#)

2- Design deck of cards with 52 cards and standard suits, provide capability of shuffling classes using oops principal was expected.

3 Given an array find max ($a[i] > a[j]$) such that

$i > j$.

Round 2: Problem Solving Round

1 Given [median of two sorted arrays of same size](#) (log n solution expected)

2- n building are given their is a cost associated with each building for painting in 3 colours R, G, B, given that no two adjacent buildings can have same color find minimum cost to paint all n buildings (most optimal space and time complexity expected)

Round 3 Problem Solving Round 2 :

1 Given [sorted array of numbers find last occurrence of given number x](#) (All test case need to be covered)

2- There are n bags with some gold coin, given a number k where k represents number of turns, for each turn we have to pick one bag take half coins and put back remaining in that bag, find maximum number of coins which can be collected after k turns (max heap based solution, further more optimizations while inserting back coins in heap)

Round 4 Design Round :

Discussion on my project design only HLD part,

Create HLD and LLD (oops based) of subscription engine (eg. `user` where user can subscribe services like Netflix and Amazon prime).

Round 5 HM Round

Deep discussion on my projects

Few leadership principal based questions

Round 6 Bar Raiser

Discussion on why Amazon, why leaving current organization, few other leadership principals,

Design LLD Chess Board Game for 2 players using oops principal

Result : \xc2\xa0

Rejected after this round, hr told lld was not good. I made few \xc2\xa0 mistakes in design rounds.

\xc2\xa0

Tips : \xc2\xa0

1 \xe2\x80\x93 solve many questions for problem solving, while interview discuss your approach with interviewer they are very friendly and their small hints can lead you to exact solution

2 \xe2\x80\x93 prepare well for design rounds, discuss thoroughly everything about your design

3 \xe2\x80\x93 Prepare well for \xc2\xa0 Amazon leadership principals

\xc2\xa0

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Amazon Interview SDE 2 (5 year exp)

- Difficulty Level :\nHard
- Last Updated :\n16 Jul, 2019

Online Assessment Round :

Question 1. Given a matrix of 1 & 0. Where 1 is a valid path piece. Given a src and dst also. Need to find out minimum number of steps to reach destination from Source.

Question 2. Amazon transport centre ships there items in trucks of some size. And each item take some space. And for safety purpose we have to keep a some given space empty in truck.

We are given a array of size of items[10,20,30,40], size of truck(100) and safety space(40). We have to find a pair of items which can be shipped safely and utilising maximum space in truck.

So in given example we will ship pair(20 & 40) with keeping 40 space.

Round 1: Telephonic:

Question 1. Given a matrix of 1 & 0. Where 1 is a valid path piece. Given a src and dst also. Need to find out minimum number of steps and path also to reach destination from Source.

Question 2. Given a function $f(x) = y$, where $0 < x < 10000$ & if $x_1 < x_2$ then $y_1 < y_2$ for every x . Now we have to write $f(y) = x$ function. Which will take input as some y and will return x .

Round 2: Design LLD + HLD:

Question 1. Asked about my project and we discussed deeply about it\xe2\x80\x99s challenges for its features.

Question 2. Social Media Platform design. He asked me to give only 4 features. Post(Private and Public), Follow a user and Search.

It was HLD + LLD design. Asked me various approaches by giving multiple scenarios of follower and followee. Went deep in Microservices architecture design.

OOD Code was expected.

Round 3: Coding and Problem Solving.

Question 1. Given a map where. 1->a, 2->b, 3->c and so on till 26->z.

Now we are given a number lets say 123. We need to print all possible ways to print it in alphabetical form using the map.

ex: for 123 we have (abc, Lc) where 12->L.

Question 2. We are given a number lets say 45312. We need to find next greater number with same integers.

Ex. for 45312 next number is 45321.

Question 3. We are given multiple sorted arrays. We have to merge these.

Round 4: DS and Algo.

Question 1. [Given a Tree, Find Kth distance nodes from a node.](#)

Question 2. Given a Tree, Find cousin some of a given node.

Question 3. [Given sorted row and sorted column matrix. Find a number in o\(row size\) complexity.](#)

Round 5: Design Round.

It was an open discussion on my project and any other project which i previously discussed.

After discussion, Interviewer asked me to design a Multiplayer Chess Game with scale around 10 Million users and world wide popularity. Discussion went very long for various Database schema and HLD design of Master slave and (Consistent Hashing)Ring Design for Database.

Round 6: Hiring Manager.

He asked me about difficult project i have worked on. I chose my latest project to discuss.

Then we discussed deeply about its features. My project discussion went for aorund 30 mins.

After it, He asked me a file upload and changes done on one of the devices and sync on multiple device design problem.

Round 7: Bar Raiser.

It was a telephonic round. Interviewer introduced himself and asked me about project.

There were many behavioural questions. like Why Amazon ? Why are you leaving previous company ?

Apart from these asked me to implement Decorator Design Pattern for my project.

And asked Amazon Principle related questions like

\xe2\x80\x9cTime when you had to push back customers requirement\xe2\x80\x9d

\xe2\x80\x9cTime when a feature request was not feasiable.\xe2\x80\x9d

At last he asked me a algo question \xe2\x80\x9cThere is a sentence find all the anagram word in it.\xe2\x80\x9d Asked me complexity also.

that\xe2\x80\x99s it.

After 2 days i got call from HR that i am selected.

\xc2\xab

I would like to give some suggestions for Amazon interviews. You must think about customers before answering and designing anything in interview.

Amazon is the world\xe2\x80\x99s most customer centric company and they expect engineers to be the same.

\xc2\xab

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Amazon interview experience | SDE-1 | 2.5 years experienced

- Difficulty Level :\nMedium
- Last Updated :\n16 Jul, 2019

A few nuggets before going in:

Prepare well. Work hard. Speak confidently. Be fast (dont by-heart the answer though!)

Round 1 (Telephonic):

Got a call from a person in the team for which the interview was being conducted. Questions were on my project, and basic concepts like SSL etc. (this differs from team to team I believe)

Round 2 (Online \xe2\x80\x93 AMCAT):

The first question was essentially based on <https://www.geeksforgeeks.org/given-sorted-array-number-x-find-pair-array-whose-sum-closest-x/> but there were two arrays given, you had to pick one element from each such that the sum is closest to X.

This was framed as a problem where there is a plane with a given fuel capacity (X) and one array containing the fuel consumption values for certain destinations (A) and another array containing the fuel consumption for going to another location after going to the location in the previous array (B). Now we need to find max A+B such that A+B <= X

The second question was essentially based on: <https://www.geeksforgeeks.org/find-k-closest-points-to-the-origin/>

It was framed something like a delivery person wants to deliver to the k nearest locations

Round 3 (Face-to-face, Problem solving):

These questions were asked. Focus is on your problem solving skills rather than on actual Data structure or algorithm knowledge.

<https://www.geeksforgeeks.org/word-ladder-length-of-shortest-chain-to-reach-a-target-word/>
<https://www.geeksforgeeks.org/split-the-number-into-n-parts-such-that-difference-between-the-smallest-and-the-largest-part-is-minimum/>

Round 4 (Face-to-face, Data structures and algorithms):

Here knowledge of data structures and algorithms is a must. Look for edge cases and be quick if possible. Questions asked were:[Diameter of Binary Tree](#) , [Cutted Segments](#) followed by a modification <https://stackoverflow.com/questions/44149463/how-to-solve-rod-cutting-problem-with-limit-on-maximum-no-of-cuts-allowed>

Round 5 (Face-to-face, Hiring manager interview):

Questions of how you would approach a problem technically etc. Focus is on how you exhibit the Amazon leadership principles. Prepare beforehand and think of situations in life where you have exhibited them

Round 6 (Via Amazon chime, Bar raiser):

Deep and end-to-end knowledge of your current project is tested. There may be coding as well

depending on the requirement.

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Amazon Interview Experience | SDE-2

- Difficulty Level :\n[Medium](#)
- Last Updated :\n16 Jul, 2019

Round 1:

Implement Find command in Linux.

Asked to review a piece of code that was already written.

Some behavioral questions

Round 2:

[Assembly Line Scheduling](#)

[Connect n ropes with minimum cost](#)

Round 3:

Design stack overflow along with its Notification system.

Round 4:

Complete discussion on the current project architecture, implementation and few scenario based questions.

Amazon principles related questions

[Find the pairs whose sum is nearer to zero in a given array of both negative and positive integers.](#)

Round 5:

Behavioral and project discussion.

Amazon principles related questions

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Amazon Interview Experience | SDE-2

- Difficulty Level : \n[Medium](#)
- Last Updated : \n15 Jul, 2019

Round 1: (Technical)

\xe2\x80\x93 Given a building as a 2D matrix with three possible values at each cell: P for Person, W for Wall and E or Emergency Exit. For every personal we need to find the minimum number moves to reach to (nearest) exit.

\xe2\x80\x93 Given a stream players with player number and score. At any point of time, given a rank we need to return player. Implement data structure to support add player and get rank in optimum time.

Example:

add(P1, 25), add(P2, 15), add(P3, 20), add(P4, 40)

rank(1): Return P4

rank(2): Return P1

Round 2: (Technical)

\xe2\x80\x93 [Given an array of numbers, print all the numbers if there are at least two numbers greater than element](#)

\xe2\x80\x93 [Snake ladder game](#)

\xe2\x80\x93 Find the minimum prefix required for each string

Input: \xe2\x80\x9cdog\xe2\x80\x9d, \xe2\x80\x9cdock\xe2\x80\x9d, \xe2\x80\x9czebra\xe2\x80\x9d, \xe2\x80\x9ccat\xe2\x80\x9d, \xe2\x80\x9ccord\xe2\x80\x9d

Output: dog, doc, z, ca, co

Round 3: (System Design)

\xe2\x80\x93 What was the quality improvement you have done in your team

\xe2\x80\x93 \xc2\xaa What was the decision you have taken in the absence of your manager

\xe2\x80\x93 Design Online Chess Game: Functional & Non-Functional Requirements, HLD, LLD and DB Entity Schema

Round 4: (Hiring Manager)

\xe2\x80\x93 Why are you changing

\xe2\x80\x93 Why Amazon

\xe2\x80\x93 What was the thing you felt is sub-optimal when you were using Amazon site

\xe2\x80\x93 Given a class with 25 members and a constraint is not to have an object in memory with partial members set and caller should have easy way of creating an object (Answered with Builder Pattern)

\xe2\x80\x93 Design Alert System for Price Down of a Product

Round 5: (Bar Raiser)

\xe2\x80\x93 Why are you changing

\xe2\x80\x93 Why Amazon

\xe2\x80\x93 Most recent technical challenging work

\xe2\x80\x93 Team concern you solved

\xe2\x80\x93 Situation where you had a conflict with your manager

\xe2\x80\x93 What did you improve in your team

\xe2\x80\x93 Innovative work done

\xe2\x80\x93 Why Amazon asked again at the end of the round

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Amazon off campus (All India campus hiring) SDE 1

- Difficulty Level :\n[Medium](#)
- Last Updated :\n15 Jul, 2019

Online Coding Round: (hackerearth, 1.5 hr)

1) Good Ranges:

Input : N, M (M no of queries)

Constraints : $1 \leq X \leq 4 \rightarrow 1+4 \rightarrow 5$

$2 \rightarrow [1, 1][2, 4] \rightarrow 1+1+2+4 \rightarrow 8$

$3 \rightarrow [1, 1][2, 2][3, 4] \rightarrow 1+1+2+2+3+4 \rightarrow 13$

$4 \rightarrow [1, 1][2, 2][3, 3][4, 4] \rightarrow 1+1+2+2+3+3+4+4 \rightarrow 20$

Link: <https://ideone.com/jzulOL>

2)

A tree with N vertices and N-1 edges is given. The value of the nodes given in the array where the i^{th} element in array gives the value of the i^{th} node (here array index starts from 1). Relation between parent and child node is given. Q queries will be given in the format of L X. Find the node which lies at level L mod (Maxdepth + 1) and has value just greater than or equal to X. Answer to query is the smallest value of such node and if no answer print -1. (Maxdepth Maximum depth of the tree)

20+ candidates were shortlisted. F2F interview happened.

Technical round 1:

- 1) Tell me about yourself
- 2) [Majority candidate](#)
- 3) [Zig zag traversal](#)

Technical round 2:

- 1) [Remove duplicates from a sorted linked list](#)
- 2) [Merge k sorted arrays](#) <https://www.geeksforgeeks.org/merge-k-sorted-arrays/>
- 3) Heap insertion, deletion and heapify

Technical round 3:

- 1) [K th largest element in a tree.](#)
- 2) [LRU cache](#)
- 3) Challenges faced in FYP.

Technical round 4:

- 1) Questions regarding projects I have done
- 2) Practical usage of stack and queue in computers (ex- stack -> recursion, queue -> process scheduling)
- 3) OS -> process, thread, difference b/w them.
- 4) DBMS -> normalization, De-normalisation, deadlock, deadlock avoidance.

Verdict : selected

Tips :

- 1) Should able to write code clearly on paper
- 2) Should cover all edge cases before submitting to them.

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Amazon Interview -SDE 1 Interview Experience

- Difficulty Level : \n[Easy](#)
- Last Updated : \n15 Jul, 2019

Amazon had come for a drive in Pune.

They took 3 rounds on the day of drive and rest of the rounds were taken after that.

Round 1:

This was a pen and paper round .There were approximately 40 candidates and following questions were asked to code on paper.

1. [Create a binary search tree from a given sorted array.](#)
2. [Find the row with maximum number of 1s in the given matrix.](#)
3. [Find next greater element in O\(1\) time complexity.](#)

Round 2: F2F Interview

1. Triangle frog puzzle.
2. [There is a sorted rotated array of numbers where each number appear in pair except one. Find the element which do not appear in pair in O\(logn\) time complexity.](#)

Round 3: F2F interview.

1. [Given a string find the longest substring consisting of non-repeated characters.](#)

2. [Find the island of largest 1s in a given matrix.](#)

Round 4:[F2F interview](#)

1. Half an hour general discussion on current project, technology used, hurdles faced during projects, failure if any.
2. [Merge k-sorted arrays.](#) (Gave min-heap solution, they were satisfied with this solution).

Round 5: Managerial round over skype.

1. A lot of behavioral questions were asked like challenges faced so far, how did you overcome them, any failures you have faced till now, what could you have improved in your current project etc

(this went for around 45 min).

2. General discussion around projects, about factory design pattern and its implementation as I had used one in one of my projects.

Prepare behavioral questions well as they put a lot of stress on this . Below is a link which you can refer to while preparation :

<https://simpleprogrammer.com/ace-behavioral-interview/>

I got a call\xa0 from HR 2-3 days after the\xa0 hiring manager round that I have been selected for app-store steam in Amazon Banglore.

Thank-you geeks for geeks for helping me prepare all this while.\xa0 \xf0\x9f\x99\x82

\xa0

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Amazon Interview Experience | SDE-2

- Difficulty Level :\nHard
- Last Updated :\n15 Jul, 2019

Amazon Interview Experience

Coding

Spiral tree traversal

Design card for shuffling

Find max diff between two array element $a[j]-a[i]; j>i$

Round 1(PS)

Given an array of integers(pos/neg) in sorted order, return an array of elements square in sorted order.

Given an array of wine prices, any given year you can sell a bottle of wine only from either of the ends. Bottle of wine increases every year. Find max profit after selling all.

Round 2(PS)

Given a uni-directed graph with numbers find maximum root to leaf sum with using only internal data structure.

Given a dictionary of words and a string, state if the string if broken into multiple words consists of dictionary words.

Other project and work related questions?

Round 3(Design)

Question related to design of projects I have worked on.

Design HLD and LLD for salon booking app.

Round 4(HM)

Behavioural questions

Leadership questions

Question related to conflict handling issues faced and solution

How do you approach a design architecture?

Design payment page

Design and question on currently working projects.

Why Amazon

Any offer, etc

Code review related questions

Round 5(BR)

Design of project

How do you approach a problem

Management skills related questions

Code reviews related questions

Why Amazon

Do you lead people, how many?

Some more team/tech/design related questions

Result: Got rejected after debrief

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Amazon Written Test May 2019 Software Development Engineer I

- Difficulty Level :\nBasic
- Last Updated :\n09 May, 2019

There are a total of n courses you have to take, labeled from 0 to n-1.

Some courses may have prerequisites, for example, to take course 0 you have to first take course 1, which is expressed as a pair: [0, 1]

Given the total number of courses and a list of prerequisite pairs, is it possible for you to finish all courses?

Examples:

Input: 2,

[1, 0]

Output: true

Explanation: There are a total of 2 courses to take.

To take course 1 you should have finished course 0. So it is possible.

Input: 2, [[1, 0], [0, 1]]

Output: false

Explanation: There are a total of 2 courses to take.

To take course 1 you should have finished course 0, and to take course 0 you should also have finished course 1. So it is impossible.

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Amazon Campus Interviews

- Last Updated : \n16 May, 2019

Amazon campus recruitment process basing on the past selection process.

Amazon campus recruitment process #1:

In this process, there are 4 rounds.

Written Round:

- The Written round consists of 3 sections, Aptitude, Verbal ability, and Technical.
- There are 30 Questions in the Aptitude section. The important topics include Time, Speed and Work, Percentages, Profit and Loss, Ratio and Proportion, Probability, Triangles and Function
- There are 30 questions in the Verbal Ability section. The important topics include Reading Comprehension, Sentence Correction, Identifying the error in a sentence, Synonyms, and Antonyms.
- There are 44 questions in the Technical Section. The important topics include C, Data Structures and DBMS.
- The allotted time to solve the questions in these sections is 120 minutes. There is no negative marking in this round.

Technical Round 1:

- In the technical round, some of the subjects that you will be tested include C, Data Structures and DBMS. Along with these, prepare on two more subjects from your branch.
- In most of the technical interviews, the interview panel questions you on your favorite subject and in this case, you can speak about the subjects that you have prepared.

Technical Round 2:

- This round is for elimination in most of the cases. This is another technical interview but under pressure.
- Confidence matters a lot in this round as the interview panel is going to check whether you are able to manage the stress or not. When you are pushed out of your comfort zone, keep calm and answer the questions that you know.
- If you don't know the answer, don't give up, try attempting it with your knowledge.

HR Round:

- In the HR round, the interview panel questions you everything/anything related to your personality, family, education, hobbies, internships, work experience (if relevant), general knowledge, etc.

To know more, \xc2\x80[Amazon | Campus Selection Process 2017](#)

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Amazon SDE II Interview Experience

- Last Updated : \n15 Jul, 2019

Round 1:

Was with a higher level manager and he asked about the current project (or any project you are comfortable with), challenges involved, your contribution (please note its YOUR, not your teams).

\xc2\x9a0

Went deep into the project asking questions on why its done like this, if you are given another opportunity will you do it differently. Is there any situation you faced where you did something out of your work and proved that you are correct.

Round 2:

High level design \xe2\x80\x93

Design Swiggy. The different components of the system, databases, apis, notification systems, payment system.

One problem solving question:

[Given a set of integer pairs as below, find the range/s where the count is maximum.](#)

example : (1, 5) (2, 7), (3, 10), (11, 14), (13, 15)

answer : range between 3 to 5 : has highest count of 3 occurrences

Round 3:

\xe2\x80\x93 [Find median in a stream of integers](#) and code for it.

-If there is a very huge array of sorted numbers, find the start and end index of a particular number.

Code for the solution.

Example : 1, 1, 1, 1, 2, 3, 3, 3, 3, 3, 3, 3, 3, 5, 5, 5, 100, 100, 100, 100

If the number is 3, the answer should be 5 \xe2\x80\x93 start index and 12 end index.

Round 4:

Low level design round

- Design an elevator system. This round involves, writing the classes, variables, member functions, the interactions between different classes, design patterns used, which class is responsible for what.

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Amazon Interview Experience March 2019 (Off-Campus - Cloud Associate 1)

- Difficulty Level :\nEasy
- Last Updated :\n13 May, 2019

Received a Mail from off-campus recruiter, to take a online test for the role of cloud support associate 1. Had Registered and applied in Amazon website .

Round 1: Online Test : duration 1.5 hours . Contained 4 sections . General Aptitude, Technical round 1(concepts of OS, Computer Networks, DBMS, all of them in depth), Technical round 2((Concepts of Big Data, Hadoop, Javascript, Data Science), Coding (2 Questions Easy) .

Aptitude + Technical round 1 is very important . Some people who hadn't got coding questions were also selected .

Round 2: Technical Interview 1: The interview process went on for about more than 1 hour, The interviewers was very cool . He started asking me to tell me about myself . He just gave me simple coding question to sort the characters in array . Then he started asking me questions about Networks, how do you check if your internet is working right, he asking me TCP/IP layer protocols (in depth), 3 Way Handshaking . OS (boot process) and trouble shooting process i would follow if the boot doesn't happen properly . He then asked me about DHCP and other protocol .Know everything about troubleshooting process .

Round 3: Technical Interview 2: This interview went for 40 minutes, Detailed 3 way Handshaking, Detailed working of DNS, Detailed working of other application layer protocols, FTP, SMTP etc . Different types of firewall, how it can be used to block various activities

They were hiring for 2 different profiles, Some candidates were good with Networking, Some were good with OS (Linux/Windows). But be prepared for both in detailed manner . You can be hired for any profile, so if you are not good with one you might get rejected .

Round 4: Managerial Round : This was mostly an informal conversation about the challenges I faced during my work/ internship, how I tackled them . If I had stepped out of my comfort zone to do anything extra . What priorities I had Long term or short term goals . So I had to substantiate each of them with examples .

IMPORTANT : Stick to [Amazon Leadership Principles](#)

Round 5: HR : It was again about amazon leadership principles and why I wanted to join Amazon and normal HR stuff .

It was a long Day, process went on till 8 at Night . All the rounds went well, the interviewers were very friendly, it was more of a discussion, and they used to give hints and helped me through the process . They reverted back after 4 days with an Amazon Intent to Offer.

All the best !!!

\xa0

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Amazon SDE 1 Interview Experience

- Difficulty Level :\n[Basic](#)
- Last Updated :\n15 Jul, 2019

Round 1: Written round,

1. [Convert Sorted array to BST.](#)
- 2.[Return row from the 2-D array which has maximum Number of 1.](#)
- 3.[Print next greater element](#)

input-4 5 25 13 6 12

output -5 25 -1 -1 12 -1

Round 2: F2F

1. [Find the missing number from 1 to N.N=12](#)

0 1 2 3 4 5 10 12

output\xe2\x80\x946

[Binary search](#)

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Amazon SDE-2 interview experience

- Last Updated : \n15 Jul, 2019

Just attended a lateral hiring for Senior Development Engineer, Amazon at Amazon, Gurgaon. Was asked the following questions.

Round 1

Q1 [Find the max of each window of size k in a given array.](#)

Q2. [Given an even length expression consisting only of \xe2\x80\x98{\xe2\x80\x98 and }\xe2\x80\x99, find the min. number of edits needed to make it a valid balanced expression.](#)

Round 2

Q1. [Given a text and a search string, find the shortest substring of the text containing the anagram of the search string.](#)

i/p : text \xe2\x80\x93 abcdabcba, search string \xe2\x80\x93 abb

o/p: abcb

Q2. Given a map that maps two integers such that the key is the source level, and value is the max level reachable from the source level, find the min. steps needed to reach the last level beginning from the first level.

eg: i/p: 1->4, 2->3, 3->6, 4->5, 5->8, 6->7, 7->8, 8->-1 (-1 indicates that last level has been reached).

o/p : 3 [1->4, 4->5, 5->8 = 3 steps]

Q3. Given a list/ array of sentences (consisting of alphabetical words), print the sentence(s) that has/have at least as many consonants as it has vowels, and which contains the word that occurs most frequently amongst all the given sentences.

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Amazon Interview Question

- Difficulty Level : \n[Easy](#)
- Last Updated : \n29 Apr, 2019

Round 1:

There is an unsorted array of size n.

Given a key k find m nearest elements to k.

Example

Array :\xc2\xa0 \xc2\xa0-10, -50, 20, 17, 80.

key k :20

m : 2

Answer 17, -10.

Solution : [Find k closest numbers in an unsorted array](#)

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Amazon summer internship (Hospitality, Work, Learning and Perks)

- Last Updated : \n 18 Jan, 2022

I joined Amazon, Bangalore in India on 24th May 2017 for 2 months Summer Internship.\xc2\xab
There are three Amazon offices in Bangalore separated by few kms\xc2\xab

Hospitality\xc2\xab

All the travels and accommodation facilities were taken care of by Amazon.\xc2\xab
We had the option to choose our flights and they booked it along with cab service from the airport to the hotel. So my journey started from Ranchi to Bangalore with a lot of expectations. Out of the 9 selected Amazon Interns from our college- NIT Jamshedpur, we were 4 friends traveling from Ranchi to join Amazon in Bangalore as Interns. The journey was a pretty decent one. We reached Bangalore in around 2:30 hrs.\xc2\xab

They had booked a separate cab for everyone from the airport to the hotel. I stayed in a 5-star hotel for the first 15 days which was booked by Amazon. Every new employee/intern was allotted a single room. Among the many overwhelming facilities during the stay at the hotel included an awesome breakfast and cab service to/from the office.\xc2\xab

After 15 days we were required to move out on our own. So I stayed in a nearby PG for the rest of the days. They returned the amount spent up to 7k for this relocation.\xc2\xab

They also provided Sodexo coupons each month which was enough for one-time meal daily at the Amazon canteen. The office was great and well maintained. They had a very good security system.\xc2\xab

Work;\xc2\xab

So my team was Shipment Data Platform.\xc2\xab

The first day was all about the orientation programme, Bootcamp session and an informal meeting with the manager, mentor, and my teammates. We were 8 members in the team. We were provided with some Amazon goodies and T-shirts during the orientation. We were also given a Mac to work on. From the second day, I started watching some courses about the Amazon Systems (how things work there, what guidelines are followed, etc.). The courses were very interesting and interactive. Every course was followed by some set of quizzes at the end.\xc2\xab

I spent my first week at Amazon attending Boot Camp session and setup of my desktop. We had sprint plans to discuss and plan our works every 3\xe2\x80\x93 weeks. So my first sprint was planned by my mentor as I was not having any idea about my project then.\xc2\xab

The working hours were pretty relaxed.\xc2\xab

It was around 8 office hours daily including 6 hrs of work. The remaining two hours were for meetings and other purposes. Working days were \xe2\x80\x93 Monday to Friday.\xc2\xab

There was not any hard and fast in/out time. You can come anytime and leave anytime. All that was required was 6 hours of work daily. We were also allowed to take occasional work from home if required. One of my teammates was staying at Hyderabad and he joined the meetings over the voice meetings we had on Amazon Chime. Occasionally, some were also sent to Seattle in the US for the work.\xc2\xab

I did my project well before the deadline and was able to take up some other tasks as well during a couple of my ending weeks there. In the end, we were required to give a presentation in front of many teams and also submit our Intern Performance Review document.\xc2\xab

Learnings\xc2\xab

Now Coming to the key learnings, by working at Amazon, I learnt a lot. Before this, I knew how to write codes but after working at Amazon, I learnt how to write meaningful codes for a software

company. Well, Amazon is one of the \xe2\x80\x9cBig Fours\xe2\x80\x9d. I got to know about how it manages scale. I mean I got to know how it works at such a large scale spanning different countries and regions worldwide. I learnt new Technologies like Spring, Mockito and DynamoDB. I got to know how the code structure generally looks like at a company and how it is managed at Amazon.\xc2\x0

I have got the Pre-Placement Offer from Amazon and will be joining as a full-time employee this year. This is me in the blue t-shirt with some of my teammates and manager on my last day at Amazon.\xc2\x0

PERKS:\xc2\x0

\xc2\x0

- The stipend is pretty good. (40000 rupees per month is on the higher side of industry standards as far as internship stipends go)\xc2\x0
\xc2\x0
- We used to get a separate 1100 rupees per month in the form of cash vouchers as food allowance.\xc2\x0
\xc2\x0
- We got free plane tickets for our onwards and return journey. This was my first air travel experience, and hence will always remain memorable. \xf0\x9f\x99\x82\xc2\x0
\xc2\x0
- On the first day, you get a water bottle, a diary and a T-shirt.\xc2\x0
\xc2\x0
- A 15 day accommodation is provided in a\xc2\x0*very luxurious 4 star hotel.*\xc2\x0I come from a rather simple family background, so I wasn\xe2\x80\x99t accustomed to such posh environments, so it was a bit overwhelming, in a good way, especially the attention, and the facilities. Breakfast was complimentary.\xc2\x0
\xc2\x0
- Travel for interns, to and from the office was completely free and provided by the company.\xc2\x0
\xc2\x0
- There were free coffee vending machines inside the office with a large assortment of beverages like soups, hot chocolate and whatnot. If there\xe2\x80\x99s one thing I learnt the hard way was that, espresso is\xc2\x0*really bitter.*:p I don\xe2\x80\x99t know how people enjoy that stuff. I used to mainly enjoy the hot chocolate.\xc2\x0
\xc2\x0
- There were recreation rooms with foosball, cricket, PS4, XBOX ONE, pool and a few other games.\xc2\x0
\xc2\x0
- Interns are also provided with a Macbook that you can carry with you during your time at Amazon.\xc2\x0
\xc2\x0
- There are a few team outings and lunches/dinners as well.\xc2\x0
\xc2\x0

\xc2\x0

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Amazon Interview Experience for SDE2 (3 years exp)

- Difficulty Level : \n [Hard](#)
- Last Updated : \n 15 Jul, 2019

I started with Amazon Interviews from Jan\xe2\x80\x98 and ended in March\xe2\x80\x99. This is not because there was delay from Amazon\xe2\x80\x99s recruiter side but it was scheduled according to my convenience. In my case recruiter from Amazon connected with me on LinkedIn/Email followed by conversation over the phone.

\xc2\xa0

Round 0 \xe2\x80\x93 Online Test

There were 2 questions which were easy and medium respectively. Please have some practice over input gathering and some STL fluently as it would consume most of your time if you are out of touch from competitive programming.

I would recommend you to practice a few problems(easy/medium- Ad-hoc/String) on LeetCode/Hackerrank/any other website before giving this test.

Round 1 \xe2\x80\x93 Face 2 Face Problem Solving/Data Structures

The round started with introduction from either side, in my introduction I was asked deeply about my projects and some situational questions like (Have you ever countered your manager\xe2\x80\x99s design/ideas when you felt another approach could be better?). There were more such questions which went for about first 15 minutes.

Below DS/Algo questions were asked in this round. I was asked to write working code(cleanly) including any auxiliary function that I was using. Also was asked to explain my solution\xe2\x80\x99s complexity.

Some Tips: Writing clean code and covering edge cases is very important in these rounds and missing some of them can add some flags to your review for the round.

[Merge k Sorted Arrays](#)

[Check if subtree](#)

\xc2\xa0

Round 2 \xe2\x80\x93 Face 2 Face Problem Solving/Data Structures

This round was similar to first round and review of first round was agnostic as it happened back to back. In this round too the project I was working on was asked in detail.

[Word Break Problem](#)

[Merge K sorted linked lists](#)

\xc2\xa0

Round 3 \xe2\x80\x93 Face 2 Face-\xc2\xxa0 Managerial/Design

The round was around knowing in detail about my entire experience in accordance with

Amazon's principles. Before this round it is highly advised to know all Amazon's principles and recall all your experiences that match with them. You would be asked all the situational questions like

1. Share any instance when you conflicted with your manager.
2. You were conflicted by manager/peers
3. Learned anything apart from projects which was not directly applicable to your work.

The round also covered some design of my projects and some tested some of my concepts around design like scaling/caching/sharding.

\xc2\xd0

Round 4 Face 2 Face-Sr.Managerial

This round was partially similar to earlier round beside focusing whether I was fit to few more Amazon's principles like whether I can invent and simplify any process while working and whether I was curious to learn new things.

I spoke about 80-90 percent of the time in this round and I explained all the small projects/initiatives I had taken in my experience which were in accordance with these principles.

Round 5 Face 2 Face Design (Low+High)

I was asked to **Design a room booking system.**

This included discussion around both high level and followed by low level. You need to clearly ask questions and limit your discussion to features which the interviewer cares. Since this is quite subjective round you need think aloud and have the expertise in what you speak. After all these rounds,

5-7 days later, I got a call from recruiter who confirmed my selection.

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Amazon Interview Experience for SDE2

- Difficulty Level : \nExpert
- Last Updated : \n15 Jul, 2019

Round 1:

There were around 30 to 40 people in this round, all of us were given a question paper and sheets . There were three algorithm questions and we had to write syntactically correct code within an hour.Below are the question.

1.[Print left view of binary tree.](#)

2.[Find two nodes whose sum in equal two given sum in a Binary Search Tree in O\(n\) time and O\(log n\) extra space.](#)

3.[Find k numbers with most occurrences in the given array](#)

Round 2:

This was a face to face discussion focused on algorithm design .

1. Given a map with roads, all roads in the map are straight lines . These road may intersect with each other at any angle .\xc2\xa0 Calculate total distinct roads in the map . He was expecting to see how i represent the map as data structure, ask for questions on any ambiguity and devise an algorithm then code the solution on paper . I was able to give optimized solution on first try .Basically i used two dimensional array to represent the map . The array will have only 0\xe2\x80\x99s or 1\xe2\x80\x99s as elements . Continuous sequence of 1\xe2\x80\x99s will represent a road.Do a depth first search on this array to find the total no of continuous 1\xe2\x80\x99s.Tricky part was to determine roads in case we encounter an intersection.From intersection if we can move in same direction as the direction from which we came to the intersection we consider it as same road any road from the intersection to a different direction from which we came to intersection is considered as a different road.
2. [Print a matrix in spiral order. Syntactically correct code was expected on paper.](#)\xc2\xxa0

Round 3:

This was design round.This round went on for about an hour and a half.

1. Asked about my current project, its design and architecture . Then asked me to draw the architecture of my project on white board and asked specific question on which component of the system did what and how they were implemented.
2. Object oriented design of a parking lot . I gave a design\xc2\xa0 and made use of Template method pattern, Strategy pattern and Abstract Factory pattern. Was asked counter question on my choices and their pros and cons . Be prepared for pros and cons questions on the choices that you make, and also gave me some changes in my design\xc2\xa0 and asked whether it was a good idea or not . Then asked how this system would be deployed on parking lots .

Round 4:

This was again focused on algorithm design.

1. Given a log file in the below format .

[19-10-2019:10:20:22] <some logs>

```
[19-10-2019:10:20:23] <some logs>
[19-10-2019:10:20:24] Memory usage = 10 MB
[19-10-2019:10:20:25] <some logs>
[19-10-2019:10:20:26] <some logs>
[19-10-2019:10:20:27] <some logs>
[19-10-2019:10:20:28] Memory usage = 18 MB
[19-10-2019:10:20:29] <some logs>
[19-10-2019:10:20:30] Memory usage = 22 MB
[19-10-2019:11:20:31] <some logs>
[19-10-2019:11:20:32] Memory usage = 10 MB
```

There are logs of memory usage present in the log file. As in above example the memory usage logs are 10, 18, 22, 10. Question was to find the maximum increase that has occurred in the memory usage . In the above example the maximum increase that has happened is 12 starting from 10 MB and ending at 22 MB

2. There are two source code repositories app01 and app02 which gets deployed at 7 PM in production every day . You are given below function to deploy the code from app01 and app02 in production up-to a given commit id.

```
boolean deploy(int commitId_app01, int commitId_app02)
```

if we call deploy(10, 12) then every commit from id 1 to 10 from app01 and every commit from 1 to 12 from app02 will be deployed in production and the function will return either true if deployment is successful or false if deployment failed .

A deployment is made (i.e deploy(n, m)) and deployment failed because of a faulty commit you need to write an algorithm to find the faulty commit using the deploy method in least number of deployments.

3. Given a set of integers find a subset with given sum.[Subset Sum Problem](#)

Round 5:

This was Hiring manager round . He first introduced himself and then explained the project that he is hiring for and other details about the company.

1. Tell me something about yourself which is not there in your resume.
2. Explain the architecture and design of your current project. Then asked counter questions on my project design and why we were doing things in one way and not the other . Also asked about the limitation and problems that are there in my project architecture and design and what can be done to solve those.
3. Asked why we were using third party tool in my current project rather than developing one by ourselves.
4. Asked about the recent work i did in my company(recently i worked on API gateway integration with rest services) .Asked what change would you have to make in order to expose web services and UI to public on internet . I explained about security issues that could arise on exposing to public and how we can handle that . Also explained about handling high traffic using API rate limiting and distributed rate limiting . Then asked how we can implement it .
5. Asked if i had any questions.

Round 6:

Principle engineer round. Mainly focused on the design of work i have done till now and algorithm design.

1. A brief intro about the interviewer his experience and the projects he has worked on.

2. What is the toughest project you have ever worked on ? Why was it tough ? What did you do to solve the problem ? How did you design it? What choices you made and why?
3. Gave me a single algorithm design problem and asked me to mail solution with all corner test cases to him in 30 mins.\xc2\xa0 Find total number of turns in path between two node in a binary tree. You are given two node you need to find the path between these two nodes in binary tree and calculate the no of turns in the path . For example consider a binary tree where \xe2\x80\x98a\xe2\x80\x99 is the root node and \xe2\x80\x98b\xe2\x80\x99 and \xe2\x80\x98c\xe2\x80\x99 are left and right child of \xe2\x80\x98a\xe2\x80\x99, also \xe2\x80\x98d\xe2\x80\x99 is right child of b. The no of turns in path from \xe2\x80\x98a\xe2\x80\x98d\xe2\x80\x98 to \xe2\x80\x98c\xe2\x80\x98 is 2 . The no of turns from b to c is 1 and no of turn from a to c is 0.

After few days i got a call from HR that i was selected, in few days they also sent me an offer which was more than what i was expecting .

Tips:

1. Its not just about solving the problem its about solving it quickly, so practice as much as you can.
2. Its not just about solving the problem its how you approach the problem\xc2\xa0 that is also very important. So think out loud . Let the interviewer know how you are approaching the problem. It will also help the interviewer in giving you hints.
3. Always keep a lookout on the ambiguity in the problem statement and keep asking questions on that . The ambiguities are deliberately introduced in the question to check if you can find the ambiguity and ask clarification questions.
4. Take the hints . Interviewers are always helpful and they will give you precise useful hints if you get stuck. It is important to catch the hint as fast as possible and proceed with the solution . if you are not able to catch the hint it is a big red flag.
5. Never say that you cannot do it . Even if there is problem that you have not solved before or seems that you cant solve it, keep attacking the problem from different angles, interviewer will give you hints . But if you would say that you cant solve the problem it is a big red flag and you might end up getting rejected.

A big thanks to geeksforgeeks one stop shop for all interview preparation :).

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Amazon Interview Experience (On Campus for SDE-1)

- Difficulty Level : \n[Medium](#)
- Last Updated : \n26 Jul, 2019

Amazon visited JIIT Noida for on-campus process in 2019.

Round 1\nc2\xa0(Online Coding Round- 90 minutes on HackerEarth):

This round consisted of 2 coding questions and 20 MCQs. The difficulty level of the coding questions was easy, and the MCQs tested the knowledge of CS Fundamentals (OS, DBMS, CN, OOPS etc).

The coding questions were:

1. [Given an integer N. You have infinite number of 3, 5 and 10 denomination coins. Print the no of ways you can form a sum of N by using the coin denominations. Soln: Standard DP coin-change problem.](#)
2. Given profits of a company for N days and Q queries. Each query contains two integers L and R. For each query, print the number of days on which the profit is greater than or equal to L and less than or equal to R. Soln: Sort the profits, and for each query, use binary search to find the upper-bound for R and lower-bound for L. Time Complexity: $O(n\log n + Q\log n)$

Some of the MCQs which I can remember:

1. Time complexity for $T(n) = 4T(n/2) + n^2$ (options : $O(n^2)$, $O(n\log n)$ etc)
2. \nc2\x0Given: Prefix expression. Which of the following is the corresponding postfix expression.
3. Calculate the number of page faults that will occur, Given: OS uses FIFO for page replacement, no of pages per frame given. And system uses x pages in a specific order, and then some y pages in reverse order.
4. Purpose of Ping in networking.
5. Some questions on SQL commands (add column to a table etc)
6. In OOP, which of the following is used to achieve runtime polymorphism. Options: Friend function, operator overloading, function overloading etc)
7. If a machine sorts x entries in y seconds, how many entries will it sort in z seconds. Given: bubble sort is used for sorting.
8. Postorder traversal of tree given, which of the following is in-order.
9. Questions on deadlocks, semaphores etc
10. No of nodes in a complete binary tree with N leaves.
11. Although the questions were easy, the cutoff was very high. Out of ~400 students, 30 were able to clear this round.

Round 2\nc2\xa0(Face to face Interview- 1 hour):

The interviewer was very friendly and started with \xe2\x80\x9ctell me about your projects\xe2\x80\x9d. It sounded like a formality, I gave a very brief answer and then he started with the questions.

Q1: [Print all triplets in an array that sum to a given number k](#). The catch here was that ALL such triplets have to be printed. For e.g. if the given array is {1, 1, 1, 1, 2, 0} and k = 3, the output should be: {(1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 2, 0), (1, 2, 0), (1, 2, 0), (1, 2, 0)}

I started thinking and was explaining my thought process to the interviewer as I was thinking. First, I talked about sorting the given array, then for each element A[i] in the array, I found all pairs that sum

to $k - A[i]$. For finding the pairs, I fixed one pointer at $A[i+1]$ and one at $A[n-1]$ (if n is the size of the array). I had to modify the solution such that all possible pairs get printed, and the interviewer himself gave 2-3 hints for that.

Time Complexity: $O(n \log n + n^2) = O(n^2)$

Extra Space: $O(1)$

Then he asked me to code the solution, which I did, and after performing a dry run, submitted the solution. The interviewer told me to re-check my code. I analyzed it, a case was missing, which I added and then he was convinced.

\xc2\xa0

Q2: Given an array in which for all i , $A[i+1] =$ either $A[i] + 1$, or $A[i] \times 2$ 1. In such an array, find a number k .

Ans: It can be done in $O(n)$ using linear search. But it can be optimized by performing jumps. For example if $k = 10$ and the first element is 5, we can jump 4 elements because the 4th element can be at max 9. And so on \xe2\x80\x96

Then the interviewer modified the question. Now, $A[i+1] =$ in the range $\{A[i] \times 2, A[i]+t\}$.

Ans: size of the jump will be modified.

Then he asked me to code the solution which I did.

\xc2\xa0

It took me approximately 30 minutes per question, and I reached at the solutions gradually with the help of hints from the interviewer. It might sound counter-intuitive, but the interviewer giving hints is a positive signal (as long as you are able to catch those hints and arrive at the solution he wants you to arrive at).

Round 3\xc2\xa0(Face to face Interview- 45 minutes):

Question: Implement the algorithm of split-wise app (Algorithm, not system design). Given transactions in the format: A->B 45, meaning A owes Rs.45 to B. Reduce the transactions to a minimum.

I started by drawing a graph of the transactions, and I figured that if we detect all cycles in the graph, then we can reduce one transaction per cycle. The interviewer asked me to code it, which I started doing. Then he stopped me in between and told me to come up with a different solution. He gave me a hint to think about how much net amount does each person owe/is owed. Using that hint, I was able to come up with a greedy solution: form two sets of people, those who owe some net amount and those who are owed. Then from those who owe, select one and give to one from those who are owed. But I was not sure about the order in which elements from the two sets had to be chosen. He hinted that I choose the ones with the largest values. I tried to prove it mathematically, and then proceeded with the solution. Then I used max-heaps to extract elements from both the sets.

Time Complexity: $O(n \log n)$

Extra Space: $O(n)$

Then he asked me to code the solution. In the solution, I had used heapify and percolate-up as functions for heap, he made me code them as well.

Round 4 (Face to face Interview- 1 hour):

Question: [Given a BST, find the kth largest element. Size of the BST not given.](#)

Ans: Using reverse-inorder traversal. Kept counter to keep track of no of elements visited.

Then the rest of the interview was based only on projects and my internship. I was also asked some subjective questions like, what was the most challenging project you worked on and why? which technology do you like the most etc.

The interviewer asked in-depth questions about my projects, but since I had mentioned only simple projects which I had made myself, I answered all questions confidently.

\xc2\x0

Round 5 (Face to face Interview- 1 hour):

There were two interviewers in this round. In this round they asked a lot of theoretical questions of CS Fundamentals. I am not good with theoretical subjects, and was only able to answer the questions partially.

Some of the questions were: Discuss semaphores and how do they work, what is critical section, what is race condition, what is the difference between a thread and a process, what is scheduling, discuss some scheduling algorithms, explain the working of round robin scheduling. What are atom properties of transactions, discuss normalization, 1NF, 2NF, etc, What is a DNS server, can two DNS servers communicate with each other, What happens when we type a web URL etc.

In one question, I was given a code segment in JAVA and asked whether critical section will be violated or not.

I don't know how much knowledge of Fundamentals is expected by Amazon, but I got through by answering only some of these questions. I was able to confidently answer some questions. For some questions, I gave partial answers, as much as I could recall. For some questions, like working of round robin, atom properties etc, I was not able to answer at all.

The round had not went well till this point, but as the interviewers were very friendly, I requested them to ask me some question on DS/Algo. Then they asked me to check if two BSTs are the same (i.e. have the exact same elements, the structures might differ).

Soln: Store in-order traversals of both trees in arrays and check if the two arrays are the same.

Time complexity: $O(m+n)$, Space Complexity: $O(m+n)$

The interviewer told me to optimize the space, and gave a hint to think about some other way to perform in-order traversal. Then I performed the inorder traversals using stack instead of recursion. I kept two stacks, and kept removing the same elements from both stacks, when they appeared in both. And this stack will have at max $O(\log n)$ elements (or $O(\text{height})$ elements), so space complexity is reduced. Then I was asked to code the solution which I did.

\xc2\x0

Suggestions:

- Start with a brute-force solution and then keep optimizing it for as long as you can. You need to reach the optimized solution eventually, and it's perfectly fine if you start with a very simple solution and optimize it gradually.
- Try to prove every part of your logic mathematically, don't make wild guesses. If you form any hypothesis, don't proceed with it without proving it.

- Clarify the questions from the interviewer, ask him the output for some random test cases to be sure you have understood the question properly.
- Practice writing code on paper. It is very different from writing it on your computer, since you cannot edit much on paper.
- Always state the time and space complexity of your solution.
- Perform dry runs before submitting your code to the interviewer.

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Amazon Pune Pool Campus Interview

- Difficulty Level : \n[Medium](#)
- Last Updated : \n15 Jul, 2019

Amazon pool campus placement drive was conducted in March 2019. There were total five rounds, first round being an online coding round was held on Hackerearth followed by three technical interviews and one bar raiser cum technical round.

Online Round

There were 2 coding problems and 10 MCQs related to Operating System and DBMS.

Technical Interview 1

Problem 1

[You are given two integers n, k, and an array a of size n. Find out the frequency of k in the array a.](#)

Solution

My first solution was to hash the frequency of the entire array in array h and then print h[k]. The time and space complexity are both O(n) in this case. The interviewer asked me to improve the space complexity.

In my next solution, I just took an integer variable count and incremented it every time k occurred while traversing the array a. This space complexity reduced to O(1) and time complexity still O(n).

He told me that if the array is sorted and now I have to reduce the time complexity as well. I could simply use lower_bound() and upper_bound() functions in C++ to find the first and last occurrence of k in array a. Now the space complexity is O(1) and time complexity is O(log(n)). He told me to write the code.

Instead of using upper_bound() and lower_bound() directly I thought it would be better to implement them. So, I wrote two binary search codes, one for lower_bound() and other for upper_bound(). He was satisfied and moved on to next question.

Problem 2

Create a binary search tree from a sorted linked.

Solution

My first solution was an obvious skewed tree. He was impressed and told that it is indeed very easy and simple solution but now he wants a height balanced tree. This the [solution](#). He told me to write the entire code which I did somewhat correctly with his help.

Technical Interview 2

My second round was conducted by a very pretty and intelligent young lady. She helped me a lot, by

giving suggestions and ideas to improve my solution.

Problem 1

You are given a binary tree and two integers k and d. Print all the nodes at a distance of d from k.

Solution

My first solution was to find the distance of every node from node k using LCA and then print only those nodes whose distance is d. This is my [idea](#). The time complexity of my solution was $O(n \log(n))$. She wanted it in $O(n)$. She helped me build all the logic and finally I was told to write the code.

Problem 2

You are given an array a which consists of only 0, 1 and 2. You have to sort the array.

Solution

My first solution was to hash the frequency of the array in one traversal and then fill 0s, followed by 1 and then 2s in second traversal. She was satisfied but wanted it in single traversal. This is the [solution](#). I was told to write the code.

Technical Interview 3

This was more of a general discussion on various fields of computer science rather than problem solving round.

Problem 1

You have two files a.txt and b.txt having two numbers with upto billion digits. You have to calculate the sum of two numbers.

Solution

My solution was to first move the file pointer of the both files at the end and then start adding the digits and carry and consequently moving backwards and store the result into a new file. Finally create another file and save the reversed contents of previous result file. He was satisfied but then restricted the backward traversal. I told that we can use recursion to return the carry. He asked if any data structure can be used for this problem. I replied with linked list, because large amount of continuous memory cannot be allocated but linked list does not use continuous memory.

Problem 2

You are given a grid of alphabets. You have to print the coordinates of all the starting points from where word \xe2\x80\x9cAMAZON\xe2\x80\x9d can be formed. You can move up, down, left and right.

Solution

I gave a solution using DFS and DP. It was difficult to explain but I tried my best. I guess he was expecting a more simpler [solution](#) but he was satisfied. He told me to write the code my idea.

Technical cum Bar Raiser Round

I was told give brief description about myself and my projects. He asked my role in the project. After which he gave two problems to solve.

Problem 1

You are given a binary tree and a node k. Find out if the left sub tree of k is a mirror image of right sub tree or not.

Solution

The idea was a modification of [this](#).

Problem 2

You are given a character array. You have to return a character array in which each alphabet x is present min(frequency(x), position of x in alphabetical ordering)).

Solution

This was a simple implementation problem. I was told to write the code properly with class.

Finally, total of 9 people were selected. Out of which 6 were from **Army Institute of Technology Pune**. I was fortunate enough to be one of them.

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Amazon Interview Experience (Pool campus- March 2019) Pune

- Difficulty Level :[Medium](#)
- Last Updated :[15 Jul, 2019](#)

Recently, Amazon held a Pool Campus drive at Pune in which students from various colleges in the city had appeared.

Job Profile: Software Development Engineer (SDE-1)

Round 1: (Online coding test on Hackerearth):

First, there was an online coding test hosted on Hackerearth consisting of 2 easy coding questions and 5 mcqs (easy).

Around 300 people were shortlisted for the final interviews.

There were a total of 4 face to face technical interview rounds. All the rounds were elimination rounds.

Technical Interview (Round 1):

It started with a detailed discussion about my projects.

Then straight away jumped to problems.

Problem 1:

You are building a website in which users have to enter usernames. If username exists append a number in the following way and return the new username.

Example:

If first input is \xe2\x80\x9cabc\xe2\x80\x9d, \xe2\x80\x9cabc\xe2\x80\x9d itself should be returned as it isn\xe2\x80\x99t already existing

If the next input is again \xe2\x80\x9cabc\xe2\x80\x9d, the string \xe2\x80\x9cabc0\xe2\x80\x9d has to be returned similarly you\xe2\x80\x99ve to append numbers in an increasing manner as mentioned, if username already exists.

More examples,

If next input was \xe2\x80\x9cabcd\xe2\x80\x9d, \xe2\x80\x9cabcd\xe2\x80\x9d itself should be returned

Followed by \xe2\x80\x9cabc\xe2\x80\x9d, output should be \xe2\x80\x9cabc1\xe2\x80\x9d (Because \xe2\x80\x9cab\xe2\x80\x9d and \xe2\x80\x9cab0\xe2\x80\x9d, both were taken)

And so on..

So given any input string give the output username.

Solution:

I suggested that it can be done using the Trie data structure. I was then asked to write the code on paper.

Problem 2:

Given an array of N integers find the sum of all numbers whose number of set bits is at least two.
Expected time complexity: O(N) strictly

Solution:

Problem reduces down to finding the sum of numbers that are not an exact power of 2. Now to check if any number is an exact Power of 2 in constant time, bitwise operations can be used. For any number N, it is a perfect power of 2, if $(N \& (N-1))$ equals to 0.

I qualified and was called for the next round.

Technical Interview (Round 2):

This was also a DSA round.

Problem 1:

This was the problem asked. <https://www.geeksforgeeks.org/vertical-sum-in-binary-tree-set-space-optimized/>

Problem 2:

[Alien Dictionary](#)

Fully space optimized and time optimized codes were expected.
Cleared the round.

Technical Interview (Round 3):

Again, another DSA round. Here are the problems.

Problem 1:

[LIS of array](#)

Problem 2:

[Find number of Triplets with given sum](#)

Technical Interview + Hiring Manager (Round 4):

This was a technical plus hiring manager round.

The round started with a detailed discussion about my projects followed by 2 DSA questions:

1. Code to check if a given linked list of characters is a palindrome or not ([Link](#))
2. Given the cost of stocks on each day and you can buy and sell exactly one stock you have to maximize the profit. ([Link](#))

Later, I was asked questions like:

Why Amazon, why should we hire you, will you be able to relocate, etc and also a small discussion about the [Ashwin-Butler Incident](#) as it turned out that the interviewer was also a cricket follower \xf0\x9f\x99\x82

Overall, I would like to say that the interviewers were really friendly and always provided hints when needed. It was more like a discussion rather than an \xe2\x80\x98interview\xe2\x80\x99.
Don\xe2\x80\x99t hesitate in asking hints, they\xe2\x80\x99re always there to help. All the best.

Finally, got the offer after a week. \xf0\x9f\x99\x82

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Amazon Interview Experience | Software Development Engineer II

- Difficulty Level :\nHard
- Last Updated :\n15 Jul, 2019

Interviewed for Amazon SDE \xe2\x80\x93 II with total experience of 1.5 years.

Round 1 (Telephonic Screening):\xc2\xa0

Q1. Given a number \xe2\x80\x98n\xe2\x80\x99 find the total number of binary string of length \xe2\x80\x98n\xe2\x80\x99 such that there should be at least one pair of consecutive 1s in a string. Example: for n = 5, 10011, 11101, 11111 are valid and 10101, 10001 are invalid.

Q2. Design classes for the problem, there can be \xe2\x80\x98m\xe2\x80\x99 states and for each state there can be \xe2\x80\x98n\xe2\x80\x99 political parties. Currently the counting of votes is happening, define functions for following operations (expected complexity O(1)):

1. updating the total votes for a party in a state
2. get leading party for a state at current time

Onsite Rounds:\xc2\xa0After 3 weeks of telephonic screening.

Round 2 (Algo and DS):

Q1. All nodes at distance K from a given node in a Binary tree. <https://www.geeksforgeeks.org/print-nodes-distance-k-given-node-binary-tree>.

Q2. Given k sorted arrays, you need to select one element from each array such that the difference of maximum element and minimum element of the selected elements is minimum. Example for k = 3
1 13 27 30

16 20 29

2 3 14 18 19 22 25 28

ans: 2\xc2\xa0selected elements (27, 29, 28)

Most optimal solution plus neat code on paper was expected for both problems. I took half an hour each for both the problem. The interview went well.

Round 3 (LLD):\xc2\xa0

Design Chess, make neat class diagram for each entity, explain relation between the entities, explain how the complete follow will take place i.e. which class/function will take the input, how that input is processed and what values will be returned.

Interviewer dug deep in some classes and asked to write complete function definitions for some functions.

The interviewer was very interactive, gave hints wherever he wanted to dig deep. At the end I created pretty good design. This round also went well.

Round 4 (HM):\xc2\x80

There were two interviewer both of them were of manager rank, one of them asked me the question and the other shadowed the interview.

He started with a lot of behavioural questions:

1. One time I took an initiative in my team.
2. An idea i had which improved customer experience
3. An idea disapproved by the team
4. How is code review done and many more\xe2\x80\x86

Go through the amazon leadership principle, they are very obsessed about them and try to ask to question around them only, do have an experience prepared for some of the crucial ones like customer obsession, dive deep, earn trust, have backbone; disagree and commit from your previous projects.

Then he asked to design HLD of library system, what should be the DB structure, which type of DB should be used (NoSQL or SQL) and why?

I answered all the questions with great confidence (do remember to answer behavioural question with confidence, your body language matters the most in HM rounds). This round also went pretty well.

Round 5 (HLD and LLD):

Design Railway Booking System, both HLD and LLD is expected in this round. What should be the different components in the system, do we need micro services, how these will interact? what should be the DB structure and classes in the system. I really got confused in this round and went way off road. After a lot of struggle I managed few classes and a DB structure but it was not end to end. This round was bad.

Round 6 (Bar Raiser):

He again started with a lot of behavioural questions, most of them were on customer obsession.

HLD for Instagram, What should be DB structure, kind of Database should be used, sharding policy and some other design related questions.

He also asked an Algo question:

Given a list known ratios, find ratios for the query list.

Input:

Given ratios:

A B 0.3 (means A/B = 0.3)

B C 0.2

D A 2

Query List:

A C (Find A/C)

B D

Output:

0.6

1.67

\xc2\x0

After the bar raiser, the HR told me that response from my interviewers are good and thats it for the day. After 4 days i got a call from her, she congratulated me as I made it and **the offer was extended** to me. The overall experience was very good. The HR was very supportive and guided me time to time, telling me what to prepare, how to answer, which leadership principle to focus on for each round.

Tips:

- For SDE 2, Amazon don't focus on algo and DS much, just go through the standard question on G4G and that will be sufficient.
- Do prepare design well, both LLD and HLD is expected out of you. Educative.io is a very good source for it, its not free but its worth it.
- For LLD prepare list for standard questions which you can find easily in Amazon experiences and try to create solution first by your own then just search them online.
- Be very confident in HM round, if HM finds you fit for the role, he will fight for you even if all other are against you.
- Most important of all, Prepare the Leadership principle very well, keep a story ready for at least few of them.
- Last but not the least, believe in yourself anything is possible, almost everyone told me that they not gonna hire a 1.5 year experienced guy for SDE II, but they did, so trust yourself and go grab it.

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Amazon Internship Interview Experience

- Difficulty Level :\nEasy
- Last Updated :\n15 Jul, 2019

Round 1:Online Test

The coding round had two questions 1 was quite hard which was DP problem no one was able to solve it other was easy can be done applying simple sorting logic
Aptitude questions contained questions related to java SQL and basic c/c++ knowledge and programming

A total of around 150 students sat for the test out of which 19 were shortlisted

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The HR came and explained to us about the format and internship opportunity job description and location

There were two technical interviews and No HR interview

Round 2: Technical round

Given a sorted array in which each element is repeated twice and one element is repeated thrice find that element in O(log(n)). I gave O(n) solution.

Give a sorted array find all the pairs having given sum

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After this round I was rejected.

Thanks to geeksforgeeks team for putting such good content on website. I would advice to go through problems on website as it improves thinking and approach. It helped me a lot in every thing be it subjects, coding problems or practicing the questions.

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Interview Experience of Amazon |x80|x93 SDE2

- Difficulty Level :
[Medium](#)
- Last Updated :
15 Jul, 2019

Some time ago a recruiter by Amazon(Bangalore) contacted me, to schedule an interview for SDE-2 . This is the story of the hiring process.

First of all, the hiring process takes a long time. They are not slow, since the procedure is made of different phases:

1. Problem Solving Rounds
2. Manager Round
3. High Level Design
4. Low Level Design

I've been through all the 7 rounds at Amazon and it took me 4 visits(one month) to onsite for attending all the rounds, So one has to be patient with the Amazon's interview process. But sadly I got feedback saying Not Performing Well in LLD round and they will consider my profile soon again .

Problem Solving Round 1:

Time: 45min

Interviewer: SDE3 (Panel of 2)

Question1: You have given a numbers in a triangular fashion, you need to print maximum sum of a path from root .

Question2: Generate random number from 1 to 8 with 1/8 probability.

Problem Solving Round 2:

Time: 45min

Interviewer: SDE2

Question1: You have given a matrix of 0's and 1's where 0 represent Home and 1 represent Hospital, you need to return edge distance matrix with shortest distance of each houses to the nearest hospital.

Question2: You have given two vectors say $a_1x+a_2y+\dots$ and $b_1x+b_2y+\dots$. Find best way to store these vectors and return vector sum of given vectors.

Manager Round:

Time: 45min

Interviewer: Senior Manager of Alexa, India.

Question1) Tell me about a time when you had a conflict with your manager and how did you handle it .

Question2) Tell me about a time when you could not deliver a task in time.

Question3) Detail about current projects and challenges faced.

Question4) Design Facebook Timeline (Higher Level Design)

Question5) Tell me about a time when you faced a challenge

High Level Design \xe2\x80\x93 1:

Time: 60min

Interviewer: SDE2

Question1: This Question was from my project where I need to explain server side architecture of Bi-Directional Syncing framework.

Then, we discussed on How to Scale it for multi-million users.

Question2: Design Amazon Flash Sales System .

\xc2\x0 \xc2\x0 There is a Amazon Sale is going on for a day in India and USA using same inventory (shared b/w India and USA).

\xc2\xa0 How you will handle Transactions, concurrency etc .

Higher Level Design \xe2\x80\x93 2:

Time: 30min

Interviewer: SDE2

Question1: Design BookmyShow .

Low Level Design \xe2\x80\x93 1:

Time: 30min

Interviewer: SDE2

Question1: Design BookmyShow with all the classes and relations .

Adding up to above question, later interview asked How you can modify your code to take care of events booking along with movies.

\xc2\xa0

Low Level Design \xe2\x80\x93 2:

Time: 45min

Interviewer: Software development Manager, PrimeVideo and SDE3 (Panel of 2)

Question1: Design File Convertor like converting xml to Json, etc with all the classes and relations . There are some behavioural questions as well like Why you want to join Amazon, etc .

I feel that I was not able to perform well in the last round to gather requirements from Interviewer and got baffled in the final round.

A decorative horizontal line consisting of a series of black diagonal hatching.

I am sharing few resources which i have used while preparing for tech interviews for companies like Amazon or Google.

Problem Solving:

- 1) LeetCode Did Solve Top 150 questions of Google + 50 written Mock interviews .
 - 2) GeeksforGeeks To understand concepts behind LeetCode problems .

Low Level Design:

\xc2\xa01.Grokking Object Oriented Design Interview

\xc2\xa02. Head First Design patterns

High Level Design:

\xc2\xa01. Grokking System Design Interview

\xc2\x02.HighScalability Blog \xe2\x80\x93 All time favorites section

\xc2\x03.Youtube Channel by TechDummies-Narendra L

Pramp:

In-person Mock interviews \xe2\x80\x93 15

#####

I haven\xe2\x80\x99t been through head first design pattern book before the interview but currently going through it . So, I feel this book will definitely help you in developing thought process of Low Level Design.

Practice is the key, make sure you give 2-3 hrs of day time for interview preparation sincerely .

Note:\xc2\x03You can know more about me\xc2\x03www.xcodedoctor.com

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Amazon Interview Experience (Telephonic Interview)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n15 Jul, 2019

Question1: Introduce yourself

Question2: Can you tell me about any scenario where you have taken an initiative in your previous jobs to do something/ solve something that was not strictly required of you.

Question3: Coding on shared editor (no compilation of code required but no pseudocode)

There is a village with two kinds of people- villagers (represented by 0) and defenders (represented by 1). When enemy attacks the defenders stand in front as shown below:

```
110000\r\n100000\r\n111000\r\n110000\r\n
```

The enemy will attack in that row which is most vulnerable (i.e. has the least number of defenders). Write a program to find the row where the enemy will attack.

When I provided an $O(m \times n)$ solution I was asked to provide a better solution. And $O(m+n)$ solution is possible.

Practice [here](#)

Question4: Design a basic LRU cache using basic data structures.

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Amazon Interview Experience \xe2\x80\x93 Application Engineer

- Last Updated : \n15 Jul, 2019

Round 1 \xe2\x80\x93 Written Coding(C++ or Java or Python) and Scripting(Perl or Unix or Ruby)(1 hour)

Programming:

Given a number. Find next highest number with same set of digits

I/P \xe2\x80\x93 12345

O/P \xc2\xa012354

\xc2\xa0

Given an integer list. Output should be the product of next remaining digits

I/P \xe2\x80\x93 {1, 2, 3, 4, 5}

O/P \xe2\x80\x93 {120, 120, 60, 20, 5}

\xc2\xa0

Scripting:

Script to change owner of a file

Script to grep \xe2\x80\x9cAmazon\xe2\x80\x9d \xe2\x80\x9camazon\xe2\x80\x9d

\xe2\x80\x9cAMAZon\xe2\x80\x9d from a given text file

Script to list the processes running in a server

One more question based on cut command

\xc2\xa0

Round 2 \xe2\x80\x93 Face to face Programming(45 mins)

A program to spirally traverse a matrix

I/P:

1 \xc2\xa02 \xc2\xa03 \xc2\xa04

5 \xc2\xa06 \xc2\xa07 \xc2\xa08

9 10 11 12

13 14 15 16

O/P:

4, 3, 2, 1, 5, 9, 13, 14, 15, 16, 12, 8, 7, 6, 10, 11

Time complexity for the written program for above problem. Is there any better approach

\xc2\xa0

Print a given list in a matrix in x form. list length is assumed to be always odd

I/P:

1, 2, 3

O/P:
1 . 1
. 2 .
3 . 3

\xc2\x0

A few questions about the project currently working on

\xc2\x0

Round 3 \xe2\x80\x93 Face to face scripting(45 mins)

cut commands, grep commands, awk commands

How will you make sure that an application is running fine. What all will you do to make sure of that. Asked about all steps in details and asked to write exact commands for each.

\xc2\x0

Round 4 \xe2\x80\x93 Manager round (1 hour)

In full detail about the current working project and tasks which you do. Next 20-30 mins about the project work which you say

2 to 3 scenario based question on how to handle specific situations

According to you, what are the top 3 issues you face in irctc website and a detailed approach of how will you handle it

\xc2\x0

Round 5 \xe2\x80\x93 Hiring Manager(1 hour)

Again, in full depth about the project currently working on.

Few java logical problems

Scenario based questions

How did you handle a situation where you had communication issues with a customer

All answers will be asked in depth. Like what approach did you make technically. How did it resolve it. How did you measure the success. What are other possible approaches

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Amazon Internship Interview Experience

- Difficulty Level : \n[Medium](#)
- Last Updated : \n16 Dec, 2019

Aptitude and Coding Round

The coding round had two questions 1 was quite hard which was DP problem no one was able to solve it other was easy can be done applying simple sorting logic

Aptitude questions contained questions related to java SQL and basic c/c++ knowledge and programming

A total of around 150 students sat for the test out of which 19 were shortlisted

Interviews

The HR came and explained to us about the format and internship opportunity job description and location

There were two technical interviews and No HR interview

Interview 1

The Interviewer was very nice calm and composed he told me the basic of how the interview will be and asked for any doubts.

The first question was to [write a code for balancing brackets in an equation](#)

I was shocked to hear it but it was the one I asked him again whether its the right question and he said yes

I wrote the code checked he was overlooking it and grabbed the paper when he understood that I knew the logic and proper syntax

The second question was to find the longest increasing subarray

[Longest increasing subarray](#)

The solution was similar to this approach I went through my code and found a mistake corrected it and then gave it to him

The point checking your code/ answer the interviewer is not in a hurry, so take your time check and then submit it

The last question was quite tricky I had never seen it

It was based on group theory and dependencies

Lets say there \xe2\x80\x99s a relation A = {B, C, D}

B = {Z, X}

i.e. A is dependent on B C and D and consequently on Z and X

So relations of A are

A -> B, A-> C, A->D, A->Z, A->X

So the question was to find the dependencies of all the variables

I used an approach of Hash tables which was not full proof and efficient but the interviewer helped me work out a better solution which was not efficient but correct

And that was it for interview 1 I asked a few questions about the life in Amazon and then I left the room

9 students were shortlisted for the round 2

Interview 2

Interviewer welcomed asked me some general questions about myself it was kinda pseudo HR interview in the beginning. He asked me to tell about myself wrt to coding. I told about my encounters with coding my projects and research projects.

He asked me whether I\x99m good with Theory of Computation I said I\x99m not

confident sir

The same he asked me for JAVA and replied the same answer I was not happy with this but I had decided to tell the truth no matter

He then asked about OOP I said sir I can try and he asked about Virtual Memory

I was able to answer the question and explain the concept

The next question was to write a code to traverse a binary tree in alternate even level order traversal

If a tree has levels starting from 0, 1, 2, 3 and so on print the even levels

i.e. print 0th level, 2nd level and so on

<https://www.geeksforgeeks.org/print-all-the-levels-with-odd-and-even-number-of-nodes-in-it-set-2/>

I requested for some time and after 5 mins I thought about using zigzag level order traversal by using a proposed solution

We will traverse the tree in a zig zag manner and store the levels in hash table

And at the end we print even level entries.

He was satisfied with the answer and said instead of using two queues use only single queue

He helped me in devising a solution and we got an approach.

I was not asked to write the code for it.

And that's it the second interview was also done

After 18 hours TPO mailed and I was selected for the Amazon Internship for SDE 1 position along with 6 others from my college VJTI

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Amazon Interview Experience SDE1

- Difficulty Level : \n[Medium](#)
- Last Updated : \n14 Nov, 2019

Drives were conducted at Pune, Gurugram, Hyderabad and Bengaluru.

Round 1:\xc2\xd0 There was a mixed panel including some SDEs and HM. My first round was with the HM. It was a real-time scenario faced at Amazon. We had a discussion for about an hour which started with my resume and past experience and quickly moved onto the problem. The discussion was apparently to see how you respond to some issues that might arise and if you are quickly able to decide the trade-off for handling that situation and how correct can you be. The discussion had less technical part, more on problem-solving skills. So, for this round, just keep your cool and try to go into the problem as the interviewer describes and don't hurry on the interviewer, take genuine time and ask for hints. Such rounds are more discussions than interviews.

Round 2:\xc2\xd0 2 SDEs were there to conduct this round for me. This was more of a Data Structures and Algorithms round.

Q1. [Find the kth largest element in an array](#). A simple priority_queue(heap) question.

Q2. [Find the middle of a linked list](#).

Q3. I do not exactly remember the question, but I solved it using the algorithm for sum of k-max elements in an array, adding if the element is larger and subtracting if the element is smaller. It wasn't exactly that question but a good variation of that.

The interviewers were asking about different solutions, edge cases, optimisations in all of these questions, but they were simple questions.

Round 3:\xc2\xd0 In this round I was interviewed by a senior developer in the team. We had a short chat about my work experience and hobbies, then we jumped straight into questions.

Q1. You have to find cost for setting up electricity connection in a city where setting up electricity costs 1 unit and if the house is connected to any other house which already has an electricity connection, then there is no cost for that. The network of houses is given as a grid of 1s and 0s, where 1 represents a house and 0 represents no house and you can set up connections in all eight directions.

Can be solved simply using [DFS](#). The interviewer was very specific about the working on all edge cases and also the code written.

Q2.\xc2\xd0<https://www.geeksforgeeks.org/efficiently-implement-k-stacks-single-array/>

2nd question was where the interviewer only wanted to see my approach and no code. In all other rounds and questions based DS, Algo I had to write code on a paper. There were some variations from this article, but reading this will give you good understanding of the core concept he was looking for.

Round 4:\xc2\xd0 After round 2, elimination had started. And during the drive only 3 rounds were conducted and people shortlisted after all 3 rounds were then contacted for the final round which was through video conferencing. I was lucky enough to get shortlisted.

The interviewer was right on time and we started off with a little discussion about the hiring team and

their work. Then we moved onto my introduction and work-ex. After that I was asked a question on Boggle-Solver with direction option limited to up, down, right and left. I did it using trie and submitted the code.

Happy to share that after 2 weeks I got my offer.

Amazon interviews are more about keeping your head still and using your knowledge to understand the problem and return the solution. Also, don't think too hard about the interviewer and include him in the questions and hints required(genuine). They are here to help you get hired and not torture you. Just stick to your basic fundamentals that you have learned. And GeeksforGeeks is a great source of knowledge so use it to the fullest and never give up :P.

All the best!!!

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Amazon Interview | (On-Campus For Internship)

- Last Updated : \n15 Jul, 2019

It was a great experience with Amazon. The articles on GFG are really very helpful.

It consists of two rounds.

1) Online Coding Round

Online assessment: It consists of four sections:

* \xc2\xa0Code debugging section (**20 minutes**): 7 questions were asked in this section. (Simple code)

* \xc2\xa0Reasoning ability section (**35 minutes**): 24 questions were asked in this section and you will not be able to skip and return to problems.

* \xc2\xa0Coding section (**70 minutes**) : 2 Question:

1. **Find all pair in an unsorted array with sum less than k.** Initially, I tried to solve in order of O(n) but failed to do. There were no constraints, so I solve this question using brute force (without TLE).
2. **The second problem was a bit similar to [rat in the maze problem](#) but the destination can be anywhere.** There are multiple approaches to solve this problem. I used backtracking to solve this problem.

* \xc2\xa0Workstyle survey (**10 minutes**): Fill this seriously, who knows this also counts.

Totally 15 people got selected.

2)\xc2\xa0Technical interview:

There were 4 different interviews panels, I was among the first one whose name was called. We shook hands and exchanged greetings. The interviewer was doing something on his laptop. So, I asked some random question about him (I think that left a good impression).

He asked me to introduce myself. Then we talked about projects and my participation in GSoC (he wasn't aware of GSoC), open source and what was my job as GCI (Google Code-In) mentor, how I introduced open source to GCI students and all that stuff). He asked me about my participation in competitive programming contests. I told him, I am not a regular competitive programmer but participate occasionally.

Then he asked the first question, Check for [Symmetric Binary Tree](#). He first asked the approach. I told him about my approach using the queue data structure. Then he asked me to write code on paper. And he was continuously asking me, if you get stuck then ask me. He even offered me coffee (of course I rejected it). After writing code, he pointed about what is this node and I missed one corner test case too. So, then I defined the structure of the node and considered the corner test case. Again, he asked me to write a code of recursive method (this is too easy). We discussed the complexity of both methods. He also asked me about the different version of the GNU compilers and some in-built functions that are available for the queue data structure in STL and their complexity and implementations.

Then he asked a second question, [Next Greater Element](#). He explained this question wrong. So my new question became for each A[i] : output will be min(A[i+1] to A[n]) >= A[i].

For example:

Input: {13, 6, 7, 14, 9, 10}

Output: { 14, 7, 9, -1, 10, -1}

I took the time to solve this question. He gave me a hint but finally, I solved this problem using an ordered map (he gave a hint to do from stack data structure). He was a bit confused when I used the map but I explained it to him everything. Then he asked me to write code (did this without any error) and the internal working of the ordered map and difference between ordered and unordered map. We discuss the complexity of each function of both data structure.

He asked whether I have a question for him or not. I asked about the intern projects and in which team I will go if selected. We discussed work culture at Amazon. We also had 5 minutes discussion on delivery services and how to improve it.

Suggestions: Be confident in your approach and try to make conversation with the interviewer as they are sure to help you out. If you don't know anything then say no to them instead of bluffing. Practice code on the paper because they really need good code without any error (try to have a good indentation and define class if you are using). Put only those projects on the resume which you had done genuinely (at least don't get caught if you fake it) and make sure you know everything about your projects in great depth and details. For Amazon, the best way for practice is GeeksForGeeks Amazon internship experiences archive. It helped me a lot at the last moment. Also, be sure you can speak about all the things you have done. They may ask the purpose of your project, why this framework is used instead of other and even ask to write code.

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Amazon Interview Experience (Pool campus-2019)

- Difficulty Level : \n[Hard](#)
- Last Updated : \n15 Jul, 2019

This year Amazon has visited Chandigarh University for pool campus drive. Since there is no restriction on colleges, Nearly 2500-3000 students appeared for the test.

Package Offered: CTC: 28.75 Lakhs (Base: 13 LPA\nc2\xa0 + 1st Year Sign On Bonus: 3, 50, 000 + 2nd Year Sign On Bonus: 2, 25, 000 + Restricted Stock Units vested over 4 years: 10 Lakhs (5%+5%+40%+40%))

Job Profile: Software Development Engineer

Courses Eligible: B.Tech/M.Tech (CSE/IT/ECE/EEE/EE)

Round 1: Online Test on Hackerrank

The test consisted of 20 MCQ\xe2\x80\x99s and 2 coding questions. MCQ\xe2\x80\x99s were from various concepts related to Operating Systems, DBMS, DS & ALGO, Aptitude, Coding Output Questions.

Coding Questions:

1. [Longest Increasing Subsequence](#)
2. [Maximum sum such that no two elements are adjacent](#)

Nearly 150 candidates are shortlisted for the interview round. Nearly all the students who solved both the coding questions were shortlisted for the further round.

Round 2: Technical Interview(Total:4)

Since I don\xe2\x80\x99t remember questions asked round wise, I am sharing all the questions that I remember. These questions were asked in the interview with various students.

1. [Print Left View of a Binary Tree](#)
2. [Print Right View of a Binary Tree](#)
3. [How to check if the given tree is a BST or not?](#)
4. [Snake and Ladder Problem](#)
5. [Check whether the given tree is a perfect binary tree or not?\xc2\xxa0](#)
6. [Bridge Building \(DP\)](#)
7. [Median of Stream of Running Integers](#)
8. [Kadane Algorithm](#) (Also with slight modifications in it Like count number of elements which form maximum sum in the array. You can delete one number in the array, find maximum sum of contiguous array elements)
9. [Clone a Linked List](#)

10. [Stack from Queue](#)
11. [LRU Cache Implementation](#)
12. [Check if a tree is a mirror of itself](#)
13. [Given a Binary Tree, Count how many subtrees are possible which are BSTs](#)
14. [Detect loop in linked list](#)
15. [Find Closest Palindrome Number](#)
16. [Find smallest Palindrome nearby given number](#)
17. [Given a string, Is it possible to shuffle characters to make it a palindrome](#)
18. [Given a string, Is it possible to arrange characters such that no same chars are adjacent](#)
19. Given a BST, Find out the no. of pairs of nodes whose absolute difference is less than k without using extra space (I guess only the interviewer know the answer for this problem :-P) If someone found a solution for it please share it.

In total, you have to go through 4 technical interviews in order to get selected and the major skills that you must possess are Excellent Problem Solving and Coding skills. Some of the interviewers also asked questions from operating systems and SQL queries. In total 15 candidates were selected.

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Amazon Interview experience | Hyderabad (8 months experienced)

- Difficulty Level :\n[Easy](#)
- Last Updated :\n15 Jul, 2019

Amazon called for an interview for Hyderabad campus.

Round 1: It was telephonic round where I was asked to code on a shared document during the call. The interviewer was friendly and provided hints when struck in between.

Questions asked were:

- Find the longest contiguous sum in an array. ([Kadane's algorithms](#))
- [How will you find if there is a loop in linked list and extended to find its starting point](#) along with mathematical proofs.

Round 2: After one week they called for a face to face interview at their Hyderabad campus. There were two technical rounds. Questions asked in the first technical round here were:

- Given an array where adjacent elements in array differ by +1 or -1. Write a program to search a given number in the array. I answered with O(n) solution, he asked me to optimize further.
- [Given a number, write a program to find the square root of a number.](#) I provided with O(logn) solution.

Round 3: In continuation to the previous round they conducted next technical round consisting of two questions.

- [Find kth largest element in binary search tree with optimizations and other manipulation.](#)
- [Gives length of pipes in array. Find the minimum cost of joining these pipes to form a single pipe given the constraint that the cost of joining two pipes is equal to sum of lengths of both of them.](#)

Round 4: It was a HR round, where the project manager briefed about the team I would be joining if selected which went around 10 minutes and later moved on to behavioral questions.

It's better to be honest here as they will grill through every detail you speak. The round went for almost 1hr and consisted mostly of standard HR questions. There was also some discussion on my projects as well.

\xa0

Round 5: It was CS fundamental round mixed with few HR questions and 2 basic coding questions. They asked about Pointers, heap memory allocation, dangling pointers, paging from operating systems. There were few behavioral questions as well in between. The coding questions asked here were not difficult and looks like formality.

\xa0

Verdict: Selected.

I thank geeksforgeeks for providing a platform for all computer geeks and bring awareness about lot of things they have to know.

\xa0

Tips:

- Make a habit of putting code on the paper.
- Be thorough with DS and Algo.
- Make sure that you have knowledge of at least one subject other than DS and Algo for interviews.
- Practice a lot. It makes you comfortable during the interviews.

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Amazon Interview experience (Off-Campus 2019)

- Difficulty Level :[Medium](#)
- Last Updated :[15 Jul, 2019](#)

Hi all, Amazon conducted a pool drive in January 2019 in Gurugram. We were shared a link for the test hosted on HackerEarth. The pattern of the test was 20 MCQ\xe2\x80\x99s and 2 Programming Questions.

Online Test:

20 MCQ\xe2\x80\x99s based on OS, Network, COA, DBMS, OOPS.

Q1: Given a NxM Grid. The grid consists of only 3 integers(0, 1, 2)

- 0 denotes empty cell.
- 1 denotes a cell containing plant.
- 2 represents a cell where you are standing currently.

You can move to adjacent cells (Up, Down, Left, Right). Find the length of the shortest path to reach one of the boundaries without stepping on a plant.

Length of the path is the number of moves you make.

Q2: You are given some rules (<=26) an integer K. You can make several permutations of the rules while keeping the given rules fixed.

Write a program to find the Kth lexicographically smallest permutations of the rules.

Eg.

Input:

bcd (Rule)
xyz (Rule)
1 (K)

Output:

axyzbcdefghijklmnopqrstuvwxyz

Explanation:

Alphabets b, c, d have already been mapped to be represented x, y, z respectively. Now we need to find the lexicographically smallest (K=1) permutation of the alphabet. This is done if we assign each remaining alphabet to the earliest possible position in the permutation. Hence, the answer is xc2\xaxyzbcdefghijklmnopqrstuvwxyz.

I got the first question complete and the second question partial which was enough to qualify for the face to face interview.

Round 1:

Q1: [ZigZag Tree Traversal](#)

Q2:[Binary Tree to DLL](#)

I answered them both.

The interviewer first asked me to think of the approach and explain that approach to him. Once he was satisfied with the approach, He asked me to write production level code.

Round 2:

Q1: Given a list of IP addresses [192.12.23.45, 234.23.56.89, 192.168.1.1]. Remove duplicate IP's in the list.

Sol: I gave the first answer that store the IP addresses in a set while iterating and if IP is found in set, remove it.

However, Interviewer wasn't satisfied with the space complexity so he told me to reduce the space complexity.

I came up with a tries based solution where instead of storing an IP in set, I store it in Trie.(Space complexity is reduced as Node in Trie doesn't take up space unless allotted a value as well as instead of creating a new node for every IP, in Trie a node can be reused if even half of the IP is same).

Q2: [Maximum path sum](#)

(Without Space Complexity)

Solved the first question completely but took more time, so couldn't solve the second question on time.

Verdict: Rejected

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b'

Amazon Interview Experience Off Campus \xe2\x80\x93 Bengaluru

- Difficulty Level :\nEasy
- Last Updated :\n15 Jul, 2019

There was no test \xe2\x80\x93 directly interviews.

Round 1:

The interviewer was pretty cool, looked like a 20 yo guy.

Q1. [Convert a tree into its sumtree in place](#)

Q2. [Clone a linkedlist with random pointer](#)

Q3. [Given arrival, departure time of trains, find the number of platforms required so that no train have to wait for arriving at the platform](#)

Round 2:

Given a min heap find second largest element in it.

[Print a 2d matrix in spiral order](#)

After this round, the HR told me I didn't got through.

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b'

Amazon SDE 2 Experience (3 Years Experience)

- Difficulty Level :\n[Medium](#)
- Last Updated :\n12 Jul, 2019

I got interview call via LinkedIn.

Round 1: 1st round was coding round on some coding platform(I don\xe2\x80\x99t remember the name as it is not well known).

2 questions were there. They were very basic questions which requires little knowledge about how lists within list works. I solved them by brute force method and it worked fine.

After 1 month I got call for F2F rounds.

Round 2: F2F (only DS round 1 hour)

For all DS rounds Interviewer/s will first ask the approach and complexity of the solution and if it is not\xc2\xa0 a optimal solution they will ask to further optimize it. They might also suggest some alternative approaches\xc2\xa0and ask to compare your approach\xc2\xa0with their approach. Then they will ask you to write production quality code i.e. covering all corner cases, optimized loops, no code repetition etc (They take these points seriously\xc2\xa0:))

1. [Length of largest region in a matrix](#)
2. [Detect Cycle in undirected graph](#)

\xc2\xxa0

Round 3: F2F (DS + Design 1.5 hour)

1. Find first non repeating character from a stream of characters
[Find the first non-repeating character from a stream of characters](#)

2. Design tiny URL

Most of the discussion was on HLD. Different approaches and there advantages and disadvantages were asked.

Discussion was mainly around services involved, failures, recovery, and little bit about database (sql vs nosql).

Suggestion: In HLD discussions don\xe2\x80\x99t directly start with tech terms like kafka, zookeeper etc etc(It is good to know about these technologies). Start with block diagram and identify the micro-services of your system and how they are calling each other. If the interviewer asks you about technologies then you can tell.

\xc2\xxa0

Round 4: F2F (DS + Design 1 hour)

1. Given a partially filled Sudoku. Write a code to check if that partially filled Sudoku is valid or not.
2. Design all-in-one messenger system.

\xc2\xxa0

Round 5: F2F (Bar Raiser 1 hour)

Discussion\xc2\xxa0about current work and projects. Too many behavioral\xc2\xxa0questions it is good if you come prepared with.

1.\xc2\x80 Design food delivery app (HLD + Class diagram + Sequence Diagram)

\xc2\x80

Round 6: F2F (DS + Design 45-50 mins)

1. [Print matrix diagonally](#)
2. Design book my show (HLD and Only high level discussion)

Verdict: I got selected.

Suggestion for design rounds:

HLD: come up with high level and basic block diagram first then identify the micro-services of your system.

LLD: Identify the classes of the system. Try to put functions/responsibilities in correct class(interviewers checks that thoroughly). Try to design reusable classes i.e. it could be used by some other similar apps also. Then you should have good idea about the object flow i.e. which would be the main controller class and how the different classes calls each other.

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Introduction to Amazon Elastic Container Registry

- Last Updated : \n27 Feb, 2019

Amazon Web Services is a subsidiary of Amazon.com that provides on-demand cloud computing platforms to individuals, companies, and governments, on a paid subscription basis.

Cloud Computing:

Cloud computing is the on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the internet with pay-as-you-go pricing.

What Is Amazon Elastic Container Registry?

Amazon Elastic Container Registry (ECR) is a managed AWS Docker registry service. Amazon ECR is a secure and reliable AWS service. Just like any other cloud computing service, we can scale it up or scale it down based on our requirements. Amazon ECR uses AWS Identity and Access Management (IAM) to enable resource-based permissions for private Docker repositories. Through the Docker command line interface (CLI) we can push, pull, and manage images.

Components of Amazon ECR:

Amazon ECR has the following components:

- **Registry:**

Each AWS account has an access to Amazon ECR registry. In registry, we can create image repositories and we can also store its image.

- **Authorization Token:**

Before pushing and pulling of images, your Docker client must authenticate to Amazon ECR registries as an AWS user. The Amazon web services command line interface (CLI) has a command called *get-login* which provides the user with an authentication credential to be passed to docker.

- **Repository:**

The docker image is contained inside the Amazon ECR image repository.

- **Repository Policy:**

The repository policies enables the users to have control on the access to their repository and the image within it.

- **Image:**

The user can very easily push or pull the docker images to their repository. The user can use the image of the repository on their local system or it could be used in Amazon ECS task definitions.

List Of Available Commands:

- batch-check-layer-availability
- batch-delete-image
- batch-get-image
- complete-layer-upload
- create-repository
- delete-lifecycle-policy
- delete-repository
- delete-repository-policy
- describe-images
- describe-repositories
- get-authorization-token

- get-download-url-for-layer
- get-lifecycle-policy
- get-lifecycle-policy-preview
- get-login
- get-repository-policy
- initiate-layer-upload
- list-images
- list-tags-for-resource
- put-image
- put-lifecycle-policy
- set-repository-policy
- start-lifecycle-policy-preview
- tag-resource
- untag-resource
- upload-layer-part

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Amazon auto signup script

- Last Updated : \n21 Sep, 2021

Scripts are very powerful as they give us different features with which we can manipulate web apps and websites. Javascript being the most popular scripting language also has these features with which we can manipulate the contents of websites and web apps. In this article, we will make use of simple javascript code(script) which will allow us to fill the Amazon registration form without manually filling in the details. We will make use of JQuery which is a javascript library with which DOM(Document object model) manipulation becomes much easier.\xc2\xab0

Step 1:

Go to the link: [Amazon-Signup](#) and paste the javascript code given below in the Developer tools console window.

Note: To open javascript console in developer tools press *Ctrl+Shift+k* on windows or *Command+Option+K* on mac.
\\xc2\\xa0

How it works:

The code given below will automate the process of amazon signup once you put it inside the web console, with all the values like name, email being picked automatically from the code and then you can edit the phone number section manually and then the password similarly.

javascript

Explanation:

The above code is divided into four sections(1-4) with each doing different things.\xc2\xa0

Section 1:\xc2\xa0

The first section is about creating a DOM element which we name as `xe2x80x98scriptxe2x80x99` and then set the `xe2x80x98typexe2x80x99` and `xe2x80x98srcxe2x80x99` of this element using the DOM `setAttribute()` method which adds the specific attribute to an element, and gives it the specified value. This element is basically the script which we are trying to run (`jQuery code`) and in the last line of this section, we append this element into the DOM body `xc2xa0`.

Section 2:\xc2\xab0

The second code section contains two arrays `\xe2\x80\x98nameArr\xe2\x80\x99` and `\xe2\x80\x99emailArr\xe2\x80\x99` which contains several names and emails which we can iterate over and randomly choose values from. These randomly chosen magic takes place in code section 3, while the assigning to the DOM in code section 4.`\xc2\xa0`

Section 3:\xc2\xa0

In this section we are making use of Math.floor() and Math.random() methods provided by the Math Object in javascript. Math.random() method is used to return random numbers or elements from an array, notice we are multiplying it to the array length so that it covers the entire array. Then we make use of Math.floor() method which is to round off. Then we assign the values obtained to a variable which we will later pass to the DOM elements which will ultimately get inserted into the form.\xc2\xab0

Section 4:\xc2\xa0

In the last code section, we are basically assigning values to the DOM elements that we extract using the JQuery \xe2\x80\x98\\$.\xe2\x80\x99 sign which demands

a selector inside it and then it performs some action on it. Here we are just selecting and assigning values and then finally a setTimeout() method.\xc2\x80

Output:\xc2\x80

\xc2\x80

```
 Inspector Console Debugger { } Style Editor » ⌂ ... ×
Filter output Persist Logs
'Jeevan Rudraraju',
'Sawan Tasha',
'Kuberchand Raman Sadaram',
'Sugriva Ahsen',
'Deviprasad Muqtedar',
'Mulkraj Lokesh',
'Yashodhara Rasiah',
'Mukul Latian',
'Dushyanta Darsha',
'Mayank Agarwal',
'Priyabrata Manavendra Jai',
];
// list of emails
let emailArr = [
  'ishanimalavika1561@yourdomain.com',
  'gautambibekchinmay4851@yourdomain.com',
  'amshulaharku841651@yourdomain.com',
  'immukullatiyan@yourdomain.com',
  'vidyacharanhariramviram55686@yourdomain.com',
  'siddhikusagra948151@yourdomain.com',
  'lakshavenkateswaran6815531@yourdomain.com',
  'lalitamohanapujitasai651124@yourdomain.com',
  'vedivarahabhotla5451521@yourdomain.com',
  'janakiraviprabhashreeyash8415@yourdomain.com',
];
/*-- Code section 3 --*/
let ranName = nameArr[Math.floor(Math.random() * nameArr.length)];
let ranEmail = emailArr[Math.floor(Math.random() * emailArr.length)];
console.log('script ran');
/*-- Code section 4 --*/
$("#ap_customer_name").value = ranName;
$("#ap_email").value = ranEmail;
$("#ap_password").value = 'mypass';
$("#ap_phone_number").value = '805'; // Enter your own valid phone number
setTimeout(function () {
  $("#ap_phone_number").focus();
}, 8000);
script ran
debugger eval code:43:1
← 659
»
```

\xc2\x80

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,



Create Account

Your name

Priyabrata Manavendra Jai

Mobile number

IN +91 805

Email (optional)

lalitamohanapujitasai651124

Password

i Passwords must be at least 6 characters long.

We will send you a text to verify
Message and Data rates may apply

Continue

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