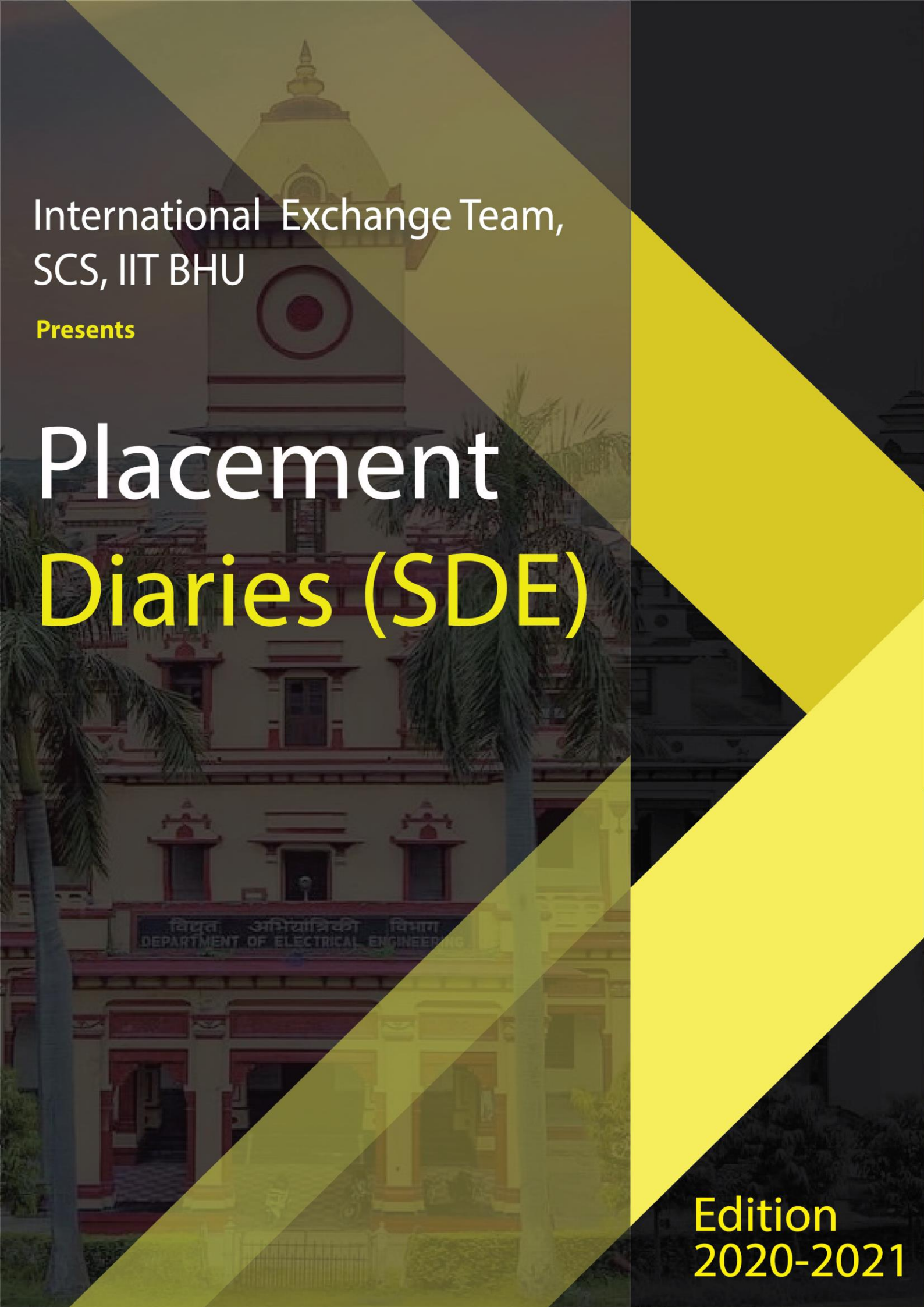

International Exchange Team,
SCS, IIT BHU

Presents

Placement Diaries (SDE)

Edition
2020-2021

Placement Diaries (SDE)

A guide to help you prepare for, and ace the placement process for Software Development profiles.

ACKNOWLEDGEMENT

We, the Student Counselling Services (International Exchange Team), IIT BHU, are elated to present to you the first edition of the Intern Diaries.
We thank the Training and Placement Cell, IIT BHU without whom this would not be possible. We also thank the faculty heads members of the Student Counselling Service, and the student helm of SCS 2020-21 who trusted us with this responsibility.
This is an effort from our side to encourage and help you all in your intern preparation. In these tough times of COVID, we all need to muster up courage and move forward with confidence to achieve greater heights. Let this dairy be a tool to uphold the values and prestige of our institution.

DISCLAIMER

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Alphonso SDE

Student 1:-
Coding Test:
9 MCQs/Integer types + 8 Subjective type + 3 Coding questions
MCQ questions related to DBMS, Networks, OS, OOPS.
Subjective question related to semaphores. Three functions were given, and the candidates had to ensure that they ran in a fixed sequence.
1 Unix coding question
Interview Rounds:
Round 1 (Technical):
The interviewer asked regular open ended questions about critical sections, deadlocks, deadlock prevention. The interviewer asked about the intern project. Then they asked what was the difference between Multicasting and Broadcast.
Round 2 (Technical):
Ques 1: Find the number of binary search subtrees in a given tree. A DFS based solution worked.

Ques 2: Given a NxN matrix with 0s and 1s. Find the number of 1s in the biggest X. i.e. an X with the largest number of 1s.
1 0 1 0
1 1 1 1
1 0 1 0
0 1 0 1
Here the bold 1 on position (2,2) has the biggest X with 6 1s.
Round 3 (HR):
The interviewer started off by asking, "Tell me about yourself!" This was a basic HR interview and the interviewer asked questions related to internships, thesis and about the company culture.

Student 2:-
Interview Rounds:
Round 1:
The first question: find medians of [a_1, a_i] of an array. The second question was to find the number of valid BSTs in a given binary tree. The third question: Given a set of good pairs, and a condition that if (a,b) & (c,b) are good pairs, then (a,c) is also a good pair. Print all the good pairs. Note: The last question can be done with DSU.
Round 2 (Technical):
The interview started with some basic questions such as what is stack/queue, common operations of stacks/queues, some applications of stacks/queues, data structure used in recursion. They asked some factual and conceptual questions from OS- What is a thread and process and the difference between them, interprocess communication and their types, inter-thread communication, thread synchronization and mutexes. They then headed on to the resume and since the candidate had projects related to web development, they asked about some HTTP concepts and some API related questions. They asked some challenging questions about design decisions- designing an OTP system and designing a resumable download feature. The candidate was supposed to explain how they'd design rather than the code. They explained and discussed the data structure to be used, how to handle heavy requests (in OTP), how to generalize the feature to all types of files (in download) among some other questions.
Round 3 (HR):
The interviewer asked simple informal questions regarding personal hobbies and family background, etc. The interviewer asked the candidate to ask questions about the company.

Amazon

Student 1:-Company Details: The online test was conducted on mettle and questions are simple, only challenging thing was the platform itself.

Kind of Resume Required: They just go through the resume but in the interview there is no single question based on the resume.

Personal Interviews:

Round 1 - The first interviewer introduced himself then asked the student to introduce themselves. Then he asked them the following question and told them to write a code on paper
Q1. In a binary tree find max of A-B where A is ancestors of B.
Q2. Find depth of binary tree
Q3. Level order travel of binary tree
Q4. Given two strings S and P. Find smallest substring of S which contain all character of P
Round 2
1 hour discussion on 1 problem. Different way to solve that particular problem. Different time complexity approach for insert, deletions and searching. (The student did not know a problem but the interviewer helped them solve that problem).
Round 3
2 question
Q1. Kadane's algorithm
Q2. Simple array question
Selected for round 4
Round 4 For evaluation of CS fundamental knowledge
2 Coding question 1. DFS in grid
2. Delete binary tree And write code for the same
Then she asked the student a computer fundamental question based on OS, threading , and processor. This concluded the interviews.
Student 2

Online Test Experience:This was an online round of 150 minutes on AMCAT with a time limit for each section. It had 5 sections.

Section 1 (Debugging - 20 mins): There were 7 debugging questions. All questions were asked from the following link:

https://www.evernote.com/client/snv?noteGuid=d0047552-4cff-4c29-b305-b8aa2d33f364&noteKey=636f07d57c2eb3ea&var=b&sn=https%3A%2F%2Fwww.evernote.com%2Fshard%2Fs683%2Fsh%2Fd0047552-4cff-4c29-b305-b8aa2d33f364%2F636f07d57c2eb3ea&exp=ENB3907&title=Amazon%2BOA1%2BDebugging
Section 2 (Coding - 70 mins):
It consisted of 2 questions and they were pretty easy. STL was not allowed. I got these questions:
1. Critical connections in a network
2. Deep Copy a linked list with next and a random pointer
Section 3 (Personality test - 20 mins): Select what type of scenario is more like you. We were given a scale with two options on either side and the scale divided into five parts. We were required to place the marker at the position which was more likely in our case.
Section 4 (Logical reasoning - 35 mins): There were 24 questions. This might have been the real tie breaker because most people were able to solve the coding questions.
Section 5 (End survey - No timer): Few questions asking about our feedback.

Interview Experience:
The entire interview process was virtual considering the Covid-19 pandemic.
1. First Round (Technical - 45 mins): It was a technical round. It was conducted on Amazon Chime. The round consisted of only coding questions and resume discussion. Then he proceeded with the resume and asked them to brief him about my internship project.
Then they moved to the coding part.
You are given a number. If it is even I can divide it by 2, add 1 or subtract 1. If it is odd, I can add or subtract 1 from it. Find the number of steps required to reduce the number to 1. The student started with BFS. The interviewer asked about the complexity and asked them to reduce it. Finally, the student was able to come up with a DP with a memoization approach.

2. Second round (Technical - 45 mins): It consisted of resume discussion, questions on operating systems and was followed by a coding question based on the same concept. Then questions were asked about paging and segmentation. He then asked me to implement Least frequently used cache. The student was asked to write the complete code. They had a very good discussion on time and space complexities. He pointed out my errors and ensured that they correct everything and use only the data structures that are required.

3. Third round (Technical + HR - 45 mins): The interviewer was a team manager and asked all sorts of questions. He began with my introduction and discussion of the projects. He then gave a coding question.

The question was - You have a hard disk. It is partitioned into memory blocks of different fixed sizes and is represented by the base address of that memory block. The user requests for memory of a particular size. You need to use the best fit memory allocation algorithm for allocating memory blocks. When a memory block gets allocated to a particular user, it cannot be further allocated to someone else until it is released by that particular user. You need to implement the getmemory() function which takes as parameters the memory size and returns the address of the memory block that has been allocated. If no such allocation is possible, it returns NULL.

The student started with brute force and then moved on to implementing it using Binary search trees. The student was asked to write proper code for the optimized approach. It was just a variation of inorder successor in BST.

He then moved to the HR questions - Why Amazon, strengths etc.

AppDynamics

Student 1:

Online Written Test:Conducted on Hackerrank.

Pattern:MCQs: Mostly based on Aptitude, Data Structures and Algorithms, SQL, Probability

Coding Questions: 3 coding questions. Moderate difficulty questions were asked.

Time management is crucial for such tests with coding questions as well as MCQs.

For coding, you may practice from Leetcode and InterviewBit.

Interview: The interview experience was really good. The team conducted 4 rounds of interviews. 3 technical and 1 HR Round, each of around 20-30 minutes of duration.

First Round:

Interviewer began by asking what the student was doing in general in college. Then 2 questions were asked. The complete code was required.

First, Find any one local maxima in an array. Interviewer made some clarifications about corner elements being local maxima if greater than their one adjacent element. Student made some clarifications like if it was guaranteed that at least one local maximum existed (YES). Student told a linear time algorithm. Interviewer asked to optimize it. Interviewer hadn't initially told that the array didn't consist of duplicates. So the student was stuck for nearly 5 minutes, drawing figures and cases arising and couldn't proceed. However, when the student told the interviewer everything going on in the mind, case analysis and what was drawn on the paper, they made it clear that the array did not consist of duplicate elements. Thus, the student was able to answer and code a logarithmic time algorithm. One other easy question- Sorting an already sorted array of integers based on their absolute values starting from the brute force approach. Student gave a linear time algorithm.

Second Round:

The interviewer opened the IntelliJ IDEA IDE and showed one feature. It was roughly searching our term in the project class names efficiently. The search was not straightforward. For instance, RequestClass should also give RequestAndResponseClass and similar searches. Student was asked how to implement it efficiently. Student couldn't answer but told them about indexing and that trie could have been used given some constraints.

Another question was asked.

You are given a browser and two queries. Queries are at runtime. The first type, give the most recent N distinct links visited after the latest opening of the browser (at any moment in time with any varying N). The second type, give the number of times a particular link is visited. A complete code was required. Library was allowed, but DLL and its functions had to be coded from scratch.

Interviewer seemed impressed and told about the company for the next 5-10 minutes.

Third Round:

It was an easy one. The interviewer said they were impressed by the last two rounds and said they'll be asking only two questions. However, they asked only one based on finding the Critical Path of a DAG (only approach). Rest 10 minutes, interviewer was speaking about AppD.

Final round: HR

Tell me about some event where you've got negative feedback about yourself. What did you learn? How can you improve your communication skills. Some more discussion. Then they asked, "Are you comfortable with working in Bangalore." Casual discussion for 5-10 minutes again.

Takeaways:

1. Take HR round seriously.

2. Don't always be competitive. Study collaboratively in a group and discuss questions and ideas.

3. Be confident and patient. You need not qualify all the companies. Just keep trying and give your best till the end.

4. And, remember, Placements are not the end.

Apple

Written Test: There were 2 Coding questions, a few MCQs based on OS and DS and lastly, SQL questions.

Interview Rounds:

Round 1:
The interviewer asked to explain a few ML algorithms. After that, they asked a DSA question. It was a two-pointer question. Later the candidate was asked a few Logical Reasoning Questions.

Round 2:
There were two interviewers in this round. Firstly, there were questions from the Resume, about previous projects and also internship. Then they asked a few HR questions. The interviewer gave a problem statement and asked the candidate to solve this problem using ML approach and discuss each step of the approach in detail and the reasoning behind it. Next, they asked a few questions on OOPs and also some real-life examples for each. Finally, the candidate was given a DSA question. For each answer, there were follow-up questions and the candidate was expected to have thorough knowledge of the topics.

Round 3 (HR):
The interviewer asked some questions related to the company and the candidates' experiences. Lastly, they asked if the candidate had come questions for them.

BNY Mellon

Online Test:

It was 90 minutes long on hackerrank. There were 4 coding questions

Q1) https://www.geeksforgeeks.org/maximum-consecutive-repeating-character-string/ (50 pts) Q2) https://medium.com/codingwithalex/slowest-key-hackerrank-problem-solution-in-pythona002ef802bff (75 pts)
Q3) https://www.geeksforgeeks.org/josephus-problem-set-1-a-on-solution/ (100 pts)
Q4) Social Media Connections. soln: https://pastebin.com/L3Hxp5sc (75 pts)

Interview Rounds:

Round-1 (Technical):

It was conducted on Hackerrank codepair. The interviewer first asked for an introduction and then directly jumped to questions.
1) The first question was related to trees, the candidate was asked to find the pairs with given sum in a BST.
2) It was to find the number of substrings with count of every character as k.
3) Then the interviewer asked the candidate to write a SQL query to find the name of the employee with kth highest salary.
4) Finally the candidate was asked virtual memory, paging from OS ; Template/Generic class from OOPS C++ ; DBMS question on normalisation.

Round-2 (Technical + HR):

First question: https://www.hackerrank.com/challenges/manasa-loves-maths/problem. The interviewer then went through the resume, and discussed in detail on one of the DBMS projects. Later the interviewers asked questions related to networking. Then they went on to DBMS and OS questions. Later the interviewer also asked some HR questions like, “How do you keep yourselves motivated?”, “How do you stay updated with latest tech?”, “What is the last computer science article that you read?”, “What is the latest knowledge that you gained and want to implement?”

Bounce

The procedure of Bounce started with an online test.

Platform: HackerEarth

Number of questions: 2

Time allotted: 1 hr.

One was an implementation based problem while the other one was graph-based. Implementation problem required some thinking while the graph problem could be solved easily using DFS.

Student's score: Full score in the graph problem. 8 of the 12 test cases passed in the implementation problem. Reason: used 'int' in place of 'long long'. So, be careful.

Interviews: There were three rounds of interviews. 2 Technical and 1 HR.

First Round: The interviewer was the tech-lead of Bounce. They exchanged pleasantries and the interviewer gave the student a laptop, opened leetcode and gave a couple of questions to solve. The questions were:

https://leetcode.com/problems/add-two-numbers-ii/description/

https://leetcode.com/problems/longest-palindromic-substring/

While coding, the student was asked to introduce themself. Random questions about the student's coding journey were asked. Not getting distracted was the key here and the student could code and talk simultaneously. Also, being quick with writing code helped as it led to finishing these questions pretty quickly. After writing the code, the student was repeatedly asked to improve the time complexity of the code and was satisfied only when the code was more efficient than 90% of the users (It's a leetcode term. In case you don't get it, check out leetcode.).

The coding platform where the student code was asked. It was Codeforces. Interviewer looked at the profile and was pretty impressed (student was an 'expert'). Then a few standard graph and DP problems were asked. The student was able to answer them. Interviewer asked about the student's internship.

Second Round: The student was called for the second round shortly after the first round got over. This round started with 'Tell me something about yourself'. Interviewer went through the resume and grilled about the projects and internships. While going through the project, the interviewer thought of a case where the student's model would give undesired results. Student accepted the suggestions and suggested some changes that might cover up for that very condition. (Note: It's pretty okay if your work isn't perfect. They're mostly looking for smart honest people. Go ahead and accept your mistakes and thank them for the suggestion.)

A few implementation problems were asked. Asked if the student knew what splitwise was. Student replied positively. Was asked what the app actually did. Student replied with, "It minimizes the number of transactions within a group." Interviewer asked to write a code on how it works. Student was taken by surprise. Asked for a couple of minutes to think and then explained the thought process. Interviewer was pretty supportive and was happy with the

approach, gave pen and paper to write code. This is how the code looked like: https://ide.geeksforgeeks.org/lLi53ZfwuK

Third Round:

As soon as the second round got over, student was called for the HR interview. The first question was, why was the student venturing out of their XYZ branch. Student told about their core internships and how student wanted different things. Was asked what the student was looking forward in a company. Student replied with a set priority order. Student had earlier mentioned ‘work-life balance’. Was asked what it actually meant for the student. Student moulded it in a way that would suit the startup culture.

“What do you know about Bounce?”

Student had used Bounce for transportation purposes during their internship. So told the things that made it unique and some improvements that the student had observed in Bounce over a couple of months.

Points to be taken care of:

1. Never lie in your resume. Life will be tough if they find out.

2. Don't worry if your projects are basic. Just be thorough with your projects and internships. Also,

prepare for, 'why this step?' at each step.

3. Your coding skill is the main thing they're looking up to. Improve it as much as you can.

4. Solve questions from interviewbit and inter IIT placement doc. Questions do repeat.

5. Regularly appear for codeforces and hackerrank contests.

6. Work on your communication skills if it's not up to the mark.

Cisco

Profile: SDE
Online Test:
It was conducted on Hackerrank and consisted of 25 MCQs and 2 coding questions with a time limit of 1 hour.
Link to the questions:
https://docs.google.com/document/u/1/d/e/2PACX-1vRrEqBNm5jh7DCc_6Jl4ZbDmvZvnQqEC8_kfc2r8ULikjz6GH4A5sKBjedEoFoCLvhWvzsI9aKRxuYc/pub#id.p3vtegg4vl10

Student-1:

Round-1:
The interviewer asked the candidate to introduce themselves before beginning the interview.

Q: Do you know Computer Networks?
A: The candidate answered that he didn't know about it but had knowledge about cryptography. The interviewer then started to discuss topics from cryptography like Public and Private Key Encryption, Third Party Authentication, Pseudorandom Number Generators etc.

Q: Do you know about Binary Search?
A: The candidate replied with a yes. The interviewer then asked questions on how it works, time complexity and whether it can be used for unsorted array or not.

Q: Do you know about Operating Systems?
A: The candidate answered that they had studied it on their own and would try to answer as much as they know.

The interviewer talked about 2 terms that the candidate had not heard of, so the interviewer moved on to topics that the candidate said they knew like CPU Scheduling, Memory Management etc. There was a lengthy discussion on Deadlocks. The interviewer was impressed by the discussion on Deadlocks.

Round-2:
It was a coding round. All the questions were from GeeksForGeeks or other coding platforms.

Q: What were you asked in the previous round?
A: Cryptography, Binary Search and OS.

Q: https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/
Q: https://www.geeksforgeeks.org/sort-an-array-of-0s-1s-and-2s/
Q: https://www.geeksforgeeks.org/level-order-tree-traversal/
Q: https://www.geeksforgeeks.org/level-order-traversal-in-spiral-form/
Q: How does a CPU handle sorting with a limited RAM and a hard disk that can have larger amount of data?
A: The candidate answered a priority-queue based approach which impressed the interviewer.

Round-3:
This was like an extension of the previous round with some managerial questions. The candidate' resume was discussed extensively.

Q: Do you like working alone or in a team?
Q: What do you know about Cisco?

The interviewer also talked about pre-placement talk and Cisco ThingQbator program.

Round-4: HR

Q: What are your hobbies?
Q: Why did you choose our company?
A: The candidate answered that they had read about the company's history and the technology that it's been working on and its Corporate Social Responsibility(CSR) activities etc.

Discussion about college life like fests and clubs also happened.

Verdict: Selected

Tips:
1) Choose your profile early. Last semester switches will not be possible to do.
2) Have good friends who can sail you through your lows.
3) Give mock interviews to anyone and be serious.
4) Do interview preparation side by side and do all the questions of FB placement doc. Questions tend to repeat.
5) Don't take a particular company too seriously.
6) Technical knowledge, communication skills, presence of mind and CGPA all matter a lot. One needs to learn how and how much to serve in the interviewer's plate.

Confluent

Requirements: OS concepts.

Written Test:

There were 3 coding questions with a time limit of 1 hour. One of the question was a Travelling Salesman Problem.

Student-1:
In the written round, the candidate was able to solve 2 of the questions and in the third was able to pass 7/13 test cases.

Round-1: Technical Interview

The interviewer gave the candidate a sheet with a problem on it. It was of moderate difficulty and the candidate solved it using DP+bit-masking approach.

The interviewer then asked the candidate to write the code of Serialising and Deserialising a Binary Search Tree.

Round-2: HR/Casual Discussion:

It was 10-15 minutes long. The interviewer asked general HR questions and asked the candidate to give feedback of the previous interviewer. The interviewer ended the round by asking the candidate if they had any questions to ask.

Round-3:

The interviewer asked questions related to the candidate''s internship experience. Then the interviewer asked a design question.

Q: Design the working of a barbershop with 3 barbers working parallelly.
A: The candidate gave a solution using Semaphores but the interviewer was not satisfied.

Q: What is atomicity?
Q: Implement LRU Cache.
Q: Implement TTL.

The interviewer also discussed on TSL solutions and OS concepts.

Tips:

1) Interviews are more like discussion rather than rapid-fire rounds. Therefore, one must be able to properly explain their approach to the interviewer rather than implying finishing the code.
2) Don’t lie on your resume.
3) Answer every query with confidence.

Directi

Requirements: Basic CS knowledge, CP experience, Algorithms.
Coding Round:
This round was conducted on InterviewBit and consisted of 3 questions (difficulty: Codeforces Div-2 C-D) with a time limit of 90 minutes.
Link to questions:
https://drive.google.com/file/d/1po3hPwX0NUm84dIwsAfCn002YImR6nO1/view?usp=sharing
Interview-1: Algorithm
The interviewer gave the candidate 1 questions to be solved within 45 minutes. The candidate had to explain the approach and write a clean code on paper.
Q: You are given a tree with weighted edges which can also be negative. You have to find a path with minimum "Absolute" total path sum. This means From all paths in the tree, min(|Total path sum|)= Answer. But there is a twist. You can invert at most "k" edge weights("+" -> "-" or "-" -> "+").
The interviewer wanted an optimal solution but never mentioned the exact complexity.
Interview-2: Algorithm
Q:
Given a directed graph representing a tournament where each edge represents a "match" between the two nodes.
u –> v represents u wins and v loses.
You are given a player "x".
Find the number of ways in which you can schedule the tournament such that x survives at the end of the tournament.
A tournament is said to end when there are no matches left.
Once someone loses, he is knocked out of the tournament and all the matches that he had with others go in favour of others automatically.
Example: Input:
4
12
23
42
Find number of ways in which "3" survives at the end of tournament.. note that by definition, there can be more than one survivors of the tournament.
Output:
2
Explanation: (4v2, 1v2)

A: The interviewer told the candidate to solve this problem for a small number of players. The candidate then gave a solution for N<= 20 using bit masking and backtracking.
Interview-3: HR+CSE Basics

The interviewer started by general HR questions, followed by questions on projects and achievements mentioned in the resume. This was followed by basic questions on CSE subjects: Networking, OS, DBMS, Systems.

Verdict: Selected

Tips:

1) For a company like this, one needs to have a good CP background. It will improve your thought process.

Dream 11

Requirements: DS, Algorithms
Online Round:
It was conducted on Hackerrank and consisted of 3 coding questions with a time limit of 90 minutes.
There were multiple sets for the round.
Link:
https://docs.google.com/document/d/e/2PACX-1vRrEqBNm5jh7DCc_6JI4ZbDmvZvnQqEC8_kfc2r8ULikjz6GH4A5sKBjedEoFoCLvhWvzsI9aKRxuYc/pub
https://www.facebook.com/groups/1540488506008368/permalink/2441849622538914/
Student-1:
Round-1:
Q: Tell me about yourself.
Q: Explain your internship project. What What challenges did you face during that time?
Q: Find the nth node from the end of the linked list.
Q: Merge 2 sorted linked lists.

The interviewer only asked for pseudo-code. The interviewer asked for a optimised solution if it was possible.
Round-2:
Q: https://www.geeksforgeeks.org/diagonal-traversal-of-binary-tree/
Q: Knapsack problem
A: The candidate answered the question with a recursion approach and then the DP solution for an optimisation.
Q: https://www.geeksforgeeks.org/puzzle-7-find-the-jar-with-contaminated-pills/
Q: https://www.geeksforgeeks.org/puzzle-12-maximize-probability-of-white-ball/
Round-3: HR
Q: Tell me about yourself.
Q: Give an example of a challenge you faced in the last 6 months either technical or behavioural.
Q: Tell me something you failed at and now feel ashamed about it.
Q: Why choose software and not core?
Q: What decision would you change if you could rewind your life?
Q: Why did you choose IIT BHU over other IITs?
Q: What does success mean to you?
Q: Why choose Dream 11?

The interviewer asked a few questions about the company and basically checked the soft skills and confidence of the candidate.

Verdict: Selected.

Tips:

1) For the online coding round, refer to the questions asked in other colleges for the same company and also previous year questions. GeekforGeeks and CodeForces are useful.
2) Stick to your answer and don't change it according to the question, especially in the HR round.
3) Do have some knowledge about the company as interviewers are likely to ask questions or expect questions from you about the company to see your level of interest.

eightfold.ai

Student 1:
There were 2 technical interviews and 1 HR interview.

Round-1:
The interviewer gave the candidate a sheet with problems on it.

Q: What are stack and heap memory?
Q: How are internally STL functions like the map, vector etc implemented?

Other questions covered topics like linked list and valid sub-string count using the stack data structure.

Round-2:

Q: Implement the Lowest Common Ancestor of the Binary Search Tree
A: The candidate gave a solution of O(n) complexity but was asked to optimise it further to log(n) complexity.

Q: Given the addresses of two folders, you are required to find the common elements of all the directories present in the given directories.
A: The candidate gave an approach based on the storing of strings on trie data structure and then putting into queue the folders in the directories and then running while it is empty.

Round-3: HR
Q: Why did you choose non-core with such a good pointer?
Q: Why did you choose an IIT even though you had a good NIT rank that could have fetched a CSE seat?
Q: What are your future plans?
Q: Why don’t you go for the startups?
Q: What do you know about the company?
Q: How are you interested by the company’s work?

Envestnet Yodlee

Online Test Experience- Test duration was 90 minutes. Test consisted of a single coding question, some questions related to OS fundamentals.

Interview Round:

Round 1 (Technical):
Firstly, the interviewer asked for an introduction followed by some questions such as: Find whether a singly Linked List is palindrome or not, BFS traversal of a tree, Detect a Loop in linked list. At last the interviewer asked one more coding question which used the concept of Disjoint set union(Kruskal's minimum spanning tree algorithm).

Round 2 (Technical):
The interviewer asked about the team project mentioned in the candidates resume. The candidate inquired about issues such as “How did you divide your work?”, “Who lead the project?”, “How did you overcome any differences of opinions?”.

Round 3 (HR): The interview started with a general introduction followed by a brief discussion on the internship project and curricular activities as mentioned in the candidates’ resume. The candidate was asked to explain the responsibilities they had as the coordinator of an organization they were a part of.

Exawizard

Profile - AI Engineer (Computer Vision)

Verdict – Selected

Placement Process Coding round-> Technical Interview x2 -> HR Interview

Selection for interview process:

Both your resume and coding round skills are equally weighted for interview selection. Even if you are a skilled coder with no Computer Vision/ML skills, you won't get through.

Kinds of resume required:

Initial coding round is just for checking your DSA fundamentals. A high priority is placed on you ML skills particularly Deep Learning and Computer Vision skills. You must have good projects on Deep Learning and it's application to Computer Vision tasks.

Coding Test:

There was one medium level question on Dijkstra algorithm and another one on Trie data structure. Can expect a medium - moderately tough level coding round.

Interview Experience

Three rounds:

Round 1: (Coding + ML Subjective Test) + Technical Interview

45 minutes (15 minutes coding + 30 minutes technical discussion)

Student had to bring his own laptop, but he didn’t. The interviewer was from Japan and he gave his own laptop which had Japanese Keyboard (though with small English letters inscribed but some keys were swapped). Coding + ML subjective round had to be finished in 15 minutes.

The test had one question on recursion (not complex) and subjective questions like : What is Back-propagation, Gradient Descent, What will happen if you pass the image through a high pass filter. There were around 5-8 questions.

After this, they shifted to project discussion where the interviewer was particularly interested in an Activity Recognition project of the student. Details of the project were asked: how student approached the task, why certain CNN network, how did student create his own dataset, techniques explored to remove dataset bias and other conceptual questions on the project. According to the student, it was fun and this round went really great.

Round 2: HR Interview

He was from Japan and was the head of the HR department. Student was asked about his ML experience and his internship in Australia. The interviewer talked a lot about Exawizards and it's Japan office and other company related information like: the kind of work they do, what kind of people they recruit etc. Basic HR questions were asked. Tell me about yourself, What are your 3 great weaknesses and strengths and why do you think so. Also asked to rank them and explain the reason behind the order. Asked about a project the student did

with his friend to check teamwork skills and also many other questions to know about his personality. According to the student, the round went really smoothly.

Round 3: Technical Round

This round came as a surprise to the student. He was called after they completed the interviews of other students and it was more of a getting to know each other round. Student was asked about his college and ML experiences, his research intern he did the previous summer in Australia and other details on some projects that were missed earlier. The interviewer showed him as an engineer what they actually build, their projects. They discussed their projects for quite a bit and future ideas etc. It was a really nice experience.

General:

They want passionate people having good skills in ML specially deep learning and Computer Vision knowledge. The specific skills they require are : ability to read research papers on ML and CV and implement it on the fly, you must be adept to training/customizing your own neural network, ability to conceptually tackle a challenge from scratch. You should have good ML skills and projects.

Far Eye

Online Test:
There were 2 coding questions. The platform was Hackerrank.
Interview Rounds:

Round 1:
First question was to write 4 functions inside a class with all the input and output specifications given. The second question was a backtracking question, and the candidate was asked to complete the function with an integer as argument.
https://leetcode.com/problems/generateparentheses/.

Round 2:
In this round, the interviewer went through the resume and asked about the internships completed by the candidate. Then the interviewer asked for an approach to find the peak element in a rotated sorted array. (https://leetcode.com/problems/search-in-rotated-sorted-array/)
The candidate was asked to make sure that the code works for the corner cases and was given enough time to check the code.

Fiserv

Online test: The online round consisted of 2 simple coding questions with function implementation.
There were different sets of coding questions made out of a total of 3-5 questions.
Some of the questions were:
1)https://www.geeksforgeeks.org/program-to-delete-all-even-nodes-from-a-singly-linked-list/
2)https://www.geeksforgeeks.org/rearrange-array-maximum-minimum-form/
3)https://www.geeksforgeeks.org/minimum-number-of-parentheses-to-be-added-to-make-it-valid/

Interview Round:

Round 1:
The round began with an introduction of the candidate. Next, the interviewer asked questions from various topics:
Algo:
https://www.geeksforgeeks.org/design-and-implement-special-stack-data-structure/
https://www.geeksforgeeks.org/design-a-stack-that-supports-getmin-in-o1-time-and-o1-extra-space/

Algo Theory:
Ques: "Which one is the best sorting algorithm?".
“How would you sort 100TBs of data?” https://www.geeksforgeeks.org/external-sorting/

Project: Then, the interviewer asked the candidate to briefly explain their projects.

OOPS: Abstraction, encapsulation, polymorphism (both), composition vs inheritance, with their meaning, use cases and correspondence to real life objects. Then the interviewer asked the Diamond problem (https://www.tutorialspoint.com/what-is-diamond-problem-in-case-of-multiple-inheritance-in-java)

SDLC: The interviewer gave some situations: "If some function of the service provided by company fails suddenly, what will you do?"

Round 2: The round began with, "Tell me about your journey of these 3+ years in the college". -

Intern & Projects: The interviewer asked questions on the candidates’ summer internship and projects.

Culture & Values: The interviewer gave a situation problem, which can be faced during the work in company.

Gameskraft

There was no written test.

Interview Rounds:

Round 1:
The questions asked in this round were:
1. “Tell me about yourself.”(including the candidates’ professional experience).
2. 2 coding questions:
i). Problem on queue.
ii). https://www.geeksforgeeks.org/count-bst-nodes-that-are-in-a-given-range/

Round 2:
1. Explain function overloading, function overriding, and operator overloading by making classes and writing code snippets.
2. What is an array & linked list, why do we need a linked list & real-time application of a linked list over arrays?
3. https://www.geeksforgeeks.org/word-ladder-length-of-shortest-chain-to-reach-a-target-word/ 4. “Do you have any questions for me?”

Round 3:
1. “Tell me about yourself.”(including the candidates’ professional experience).
2. Technologies/software that the candidate worked on during their internships.
3. https://www.geeksforgeeks.org/detect-loop-in-a-linked-list/
4. Explain the above code step by step.
5. “What is the time & space complexity of the code?”

Goldman Sachs

Written Test Experience:
The test was conducted on Hackerrank platform.
The test had 5 sections with time limits for each section.
Section switching was allowed

Section 1: Two coding questions 30 mins
Section 2: MCQs on Quantitative Aptitude 8 MCQs and duration is 25 mins
Section 3: MCQs on CS Subjective topics 7 MCQs and duration is 20 mins
Section 4: One Advanced coding question 45 mins
Section 5: Two situation based questions 15 mins.

Coding Section:
Question 1- Bachata Dance Pair two dancers such that the height difference is no more than 2 inches. People with the same heights will be considered on a first-come, first-serve basis. It was a simple sorting and implementation based question.

Question 2 - A BFS based question Find no of servers that would fail based on the dependencies given, if the given server fails. Record the failing time of the last server as well. An implementation of BFS
Advanced Coding Section:
A long question which in short was asking to implement AVL sort.

CS fundamentals: Questions based on scheduling, OS, disk, etc.
Interview Experience:

Student 1
Three Rounds - 30 + 45 + 45 mins
All the rounds happened on zoom call and a Hackerrank code pad.

Round 1:

The interview started with an introduction. Then they discussed the resume, specifically, the internships. The discussion went on for 15 mins. The interviewer asked questions on APIs. Interviewer then asked a variation of LRU Cache. Approach and code was required.
Round 2:
Interviewer asked the student why they chose the field of software development, being from chemical Engineering, about project, and what made it interesting.

After discussing for around 10 mins, Interviewer asked them a coding question on implementing a queue using two stacks. The student did it with two approaches.

Round 3:

Some questions on resume. Then, they gave a debugging problem with around 6-7 minor errors. The bugs were quite tricky to find, also helped student at the end with the line no. of one of the errors that they couldn't find. Further, asked a question on max sum path, a dp on tree question. The student explained and wrote the code for it.
Student 2
Interview Experience: There were 3 Rounds: 45 min + 45 min+ 30 min

Round 1: The interviewer looked at the Resume and asked them about Linear Regression. He asked them to explain it mathematically as well and theoretically. Then he jumped into a DSA question. He asked them a variation of Binary search. Once they explained the

approach and covered all the corner cases, he asked them to code the question and also run it on a case.

Round 2: In this round he directly jumped into DSA questions. He asked me 3 questions. The first one was a variation of Topological Sorting, and the next two were Coin Exchange Problem's both variations.

Lastly he asked them, if they had a question for him.

Round 3: He asked what kind of challenges they faced in their internship. Then, he asked them, if I am interested in SDE and why I am interested in the field. Next he asked them about LRU Cache. He didn't ask them to code it. But he wanted them to explain to him, which Data Structures, they would use and why.

Student 3

Round 1: Just after the formal introduction the interviewer jumped onto the coding part. He gave them a code to debug on Hackerrank codepair. He asked them to identify the errors in that code and correct it or either write the programme from scratch. The student identified 3-4 errors, but still the code was not giving the correct output.

After that the interviewer asked them to look at a particular line and then they saw one error in that line too. After correcting that, the code worked fine. Then he asked them a coding problem to search an element in a sorted and rotated array which they were able to code. They then discussed the time complexity of that problem. Then he told them how a day for an analyst at Goldman Sachs goes. This round went on for 50 mins.

Round 2:

The interviewer asked the student why they wanted to pursue their career in the software field despite the fact that they were from the chemical branch. He then jumped onto the technical part. He then asked them to implement a queue using two stacks. The student was able to code it correctly. He further asked them to improve the time complexity of the code.

Then he asked them if they had any questions for him. Then he shared his own experience of working at Goldman Sachs and the work from home policy of the company. This round went on for 45 mins.

Round 3:

The interviewer asked the student to give a brief introduction. He asked them why they didn coding in Java as most of my friends do that in C++. He then asked them about their internship experience. Then after 15 mins, he jumped onto the technical part. He asked them to find the vertical sum in a binary tree.

He wanted them to write the whole programme and not just the function for that. This round went on for 40 mins.

Student 4

Round 1:

The interviewer asked the student three questions on probability and statistics:

A straightforward probability question.
The non-mathematical intuition behind the formula nCr=n−1Cr+n−1Cr−1
If you make two cuts in a stick, what is the probability that the three sub sticks thus formed will form a triangle?

The student answered what came to their mind. The interviewer asked if they had any doubts.

Round 2:

Usually, companies started asking DSA questions, even if they came for an ML profile. That was nowhere the case with GS. In this round, the student was asked around 50 fundamental to medium questions on Machine Learning. They were able to answer almost all of them.

The interviewer helped them, too, if they got stuck somewhere. The questions comprised discussing the design of all standard ML algorithms, their intuition, basic statistics, easy puzzles, and some case-specific thinking for ML algorithms. Having a firm grip on ML was essential to get through this.

Round 3:

The interviewer introduced himself and then asked the student to tell him about themselves. They told him about their projects. Their UG project(based around stocks and statistics) took his significant attention. He asked them about statistical testing techniques(p-value, f-test, t-test, ANOVA, etc.).

Then he asked them how to find if a coin is biased(without flipping the coin an infinite number of times). The student told them about using a t-test to accomplish it.

Next, he asked me some excellent Machine Learning questions. He asked them to write the categorical cross-entropy on a page and show him through a webcam. Then he asked what will happen if we remove the logarithm in it, what if we put tanh activation in place of the logarithm etc.

He then asked about the probability of selecting 2 points on a rod, such that the distance between them is less than (length of rod/2). He then asked some more probability, statistics, and ML questions, almost all of which the student was able to answer. The round ended with him asking them if I had some doubts.
General Tips:

Be confident about your resume
Communication skills can give you an edge
Be strong at DSA
Stay calm during the interview
Prepare questions for the interviewer

Google

Process:

· 1: online test (2 questions)

· 4: Coding interview round

· 1: googleyness round

The student received an email invitation to a session to for preparation for interview. Material was provided to prepare for interview (had links to site like leetcode).

3 Technical rounds:

1st Coding

Q1: A single processor system has some process scheduled, with some startTime and Duration. given a new process can we schedule it without removing some pre-scheduled process.

Student shared BS based approach

Interviewer asked student to implement it. On implementing, student asked to use lower bound instead of actually implementing BS. Student was asked to fix some bugs in the code, write space and time complexity.

Q2. After that Student asked a follow up saying that now the computer has 4 processors, how will we check if a new process can be scheduled to any of the processors?

Student shared an approach involving coordinate compressing the start and end time, then making an array and initializing it with 0, then for each process doing arr[start]++,

arr[end+1]-- where start and end are the compressed representation of original values. Then build a segment tree to find the range. And finally to find the smallest interval containing our process from the compressed coordinates using Binary Search ,then find the range max in that range. If it is 4 then we can't schedule the process else we can.

Wasn't asked to code. Space and time complexity was asked.

2nd: Coding

Student was asked to describe thesis project.

Q1: Find no. of ways to make 'K' non-empty set from 'N' unique objects.

Gave some sample like 1, 1 -> 1; 3, 2 -> 1; 4, 2 -> 2.

Seeing the samples it was pretty clear that the objects are not unique. Student pointed that out and asked the interview that is this problem equivalent to the no. of ways we can fill N identical balls into K identical bags such that each has atleast one ball?

To which interviewer replied yes(interviewer was not thorough with the problem). Student asked about the range of N to which he replied 1 < N <= 1e6, K <= N

Student dropped the idea of any DP based solution and started focusing on solving it using PnC. But the interviewer told to come up with a recurrence solution. Student failed to find the correct recurrence relation.

The solution was: https://www.quora.com/How-many-ways-can-9-identical-balls-be-placed-in-three-identical-boxes

Q2: There's a directed graph find the shortest cycle from a source node

Student told a dfs based solution using the standard cycle finding algorithm and storing length of cycle whenever we encounter one and returning the min value. Time and space complexity was asked. Student was asked to improve the complexity. Student startes drawing a blank. Interviewer suggested him to use BFS. Student wrote it and the time complexity for that as well.

The student was then asked to code the solution and to return the nodes of the shortest cycle starting from the source. Student coded the BFS and kept parent array to retrieve the nodes of the cycle when he found it.

Student was asked if he/she had any questions .

3rd: Coding

Q1: Given a 2D matrix, The cost to move to an adjacent cell (4 direction, up, left, down, right) is defined as the absolute difference between the values in the cell. A path's cost is defined as the maximum cost of any step taken to traverse that path. Given a cost find if we can move from top-left to bottom-right in cost less or equal to that.

Student told and implemented a BFS based solution. Time and space complexity was asked.

Q2: Follow up to the first question, find the least cost to go from top left to bottom right.

Student said that if we plot a graph of cost vs is_possible in the last problem, it would be like step funtion's graph and the inflection point would be our answer. And we can find the inflection point using Binary Search. Interviewer agreed.

Student coded the solution using the function in the previous question as the check function. Interviewer asked the student to do the TC, Space analysis..

Q3: Given an API getTower(int n, int m) -> {int, int} that returns a location in a field of NxM dimensions. Initially the field is empty, we have to call the api several times and set towers at the given locations, two towers are connected if they are adjacent to each other (4 directions). Find the no. of times we call this api before the left side of the field is connected to the right side.

Ex:

Not connected

##T

#TT

T##

Connected

#TT

TT#

##T

Student shared a DSU based approach where for each representative of the set we can also keep a pair of booleans denoting whether they are connected with left/right. Whenever a set is connected to both sides we can return the count of towers. Student coded and the interviewer was satisfied with the solution.

Interviewer asked the student to ask questions if any.

4th: Coding

Student was asked to find the no. of subarrays in an array to which Student replied (n+1)C(2) where n is the size of the array. the full question:

Q1. Given an array find the no. of pairs of non-overlapping subarrays having elements greater the K.

With a little thinking, student proposed an O(n) solution. The solution involved breaking array into continuous chunks of arrays that contain elements greater than K. and then finding cross_pairs (the no. of pairs where the two sub arrays are from different chunks) this is trivial. and finding same_pairs (the no. of pairs where the two sub arrays are from the same chunk). This required an O(n) pass and at each juncture 'i', add to the sum the no. of subarrays ending at i -> (i+1) and all subarrays that can be formed with the remaining elements in the chunk (for size n) (n - i)C(2). Student coded the solution, dry ran it. There were no bugs.

Space and time complexity were asked.

Was asked if the student had any questions.

5th: Googleyness (20-25 minutes)

Inteviewer asked the student to give introduction and to tell something that was not on resume.

Was asked to describe a situation where the student had a difference of opinion with someone and how can it be resolved . Student was given a situation where a colleague wants to try a solution which the student has already tried and failed at. What would he do?

Student 2

Written test:

The online test was conducted on hackerearth and had 2 questions of medium and hard difficulty level. Everyone had different sets of questions.

Interview Experience: 3 technical rounds and 1 googliness round.

Round 1:

Q: A caterpillar is present at the root node of a tree at t=0 sec. After each second, the caterpillar jumps to one of its child nodes with equal probability. The student had to find the probability of presence of the caterpillar at each of the leaf nodes at t=infinite seconds.

The student gave the dfs based approach and coded it as well. Then as a follow up question, student was asked to solve the same question for a directed acyclic graph. Student gave the topological sorting based approach and the interviewer seemed quite convinced and asked the student to code the solution. They also had some discussion on the time complexity of both the approaches and the student had to write the recurrence relation and also the worst complexity test case.

The round finally ended with some hr questions.

Round 2:

The interviewer introduced himself and started with the questions

Q: Implement the non pre-emptive shortest job first scheduling algorithm for a single processor system.

Student gave the priority queue based approach and was asked to code it. As a follow up question, interviewer asked the same for a multiple processor system. Student explained the approach and the interviewer seemed convinced as well but student was unable to code it properly because of lack of time.

Round 3:

The interviewer started by asking an easy string question. Then main question:

Q: There is an incoming stream of strings and you have to print all the strings that came in for the first time or last came 10 sec prior to the present time.

Student gave the map based approach. Interviewer then asked to optimize this solution. Student then gave the trie and the hashing based approach, but interviewer was convinced by none. The student finally came up with the priority queue based approach. Interviewer was then convinced with this approach and asked to code it. Then after a few hr questions, interviewer asked the student to ask questions .(Never say No)

Round 4:

This was a short hr round of 20 min.

1. Describe a situation where you have had to work with people with different opinions.

2. Describe a situation when you had to work with a strict deadline.

3. What problems did you face during your internship and how did you cope with them.

4. Where do you see yourself in 5 years.

Tips:

1. Be thorough with your resume.

2. Maintain a good cpi.

3. Do give mocks before your actual interviews. It helps a lot in improving your communication skills.

4. Do some research about the company and always be prepared with a follow up question for the interviewer.

Student 3

Interview Experience:A total of 3 technical rounds of 45 minutes each. Every round had two questions, one basic problem and the main problem which were to be solved, explained and coded on the laptop. No specific HR round was conducted.

1st Round:A problem of moderate difficulty level was asked. The student started solving it using a priority queue, but during the discussion got confused and started thinking about the DP solution too. The student explained the DP solution , meanwhile realised that the priority queue was the better solution. After the student solved correctly, the interviewer was satisfied and told that he liked that the student was able to solve it in time.

The interviewer started to discuss his previous projects and previous internship. Then they discussed the work they do in Google. Student also asked some HR kind of questions which focused on decision making and leadership at the workplace.

2nd Round: The interviewer asked a graph problem. It was given in probabilities so he converted it into a simple graph with vertices and edges and then started to apply the pathfinding algorithm on it, student used logarithm function on the probability graph and then could easily solve all the parts given in the problem.

3rd Round

A dictionary related question was asked. It was a good and a little difficult problem. The student solved it using the Trie data structure. The interviewer asked him to code and implement the data structure from scratch. After solving, this interviewer also discussed the projects and some HR kind of questions.

Interviews are just a kind of discussion so don’t get too nervous. Keep explaining whatever you are thinking. Even if you aren’t getting to the solution or you get confused in the middle, don’t get tense or panic. Take a deep breath and try to think fresh and you will definitely be able to do better. It’s a plus point if you have some good projects and internships. Be fully prepared to explain and answer any queries related to your resume. Be calm and confident.

Harness.ai

Coding Round:
Hackerrank | 60min | 10 MCQs and 2 coding questions MCQs: CS theory, OS, DBMS
Coding: 1.) One question based on job scheduling https://www.geeksforgeeks.org/weighted-job-scheduling/
2.) Reach the End in Time: Image Link: https://imgur.com/a/qQBKbI4
Approach: Simple BFS will pass all the test cases

Interview Rounds:

Round 1:
The interviewer asked the following questions:
Ques 1: https://www.geeksforgeeks.org/reverse-a-list-in-groups-of-given-size/
Ques 2: Related to Binary Tree.

Round 2:
A question related to DP was asked: https://www.geeksforgeeks.org/0-1-knapsackproblem-dp-10/ The interviewer wanted a thorough explanation of the problem and why DP works better than the brute force method.

Round 3:
The interviewer first asked: "Tell me about yourself". After that they gave the topic of "Microservices" and asked the candidate to read about it in 5 mins and explain it. The interviewer also asked how this topic was related to the company for which the candidate had done an internship. At the end the interviewer asked the question "Why should we hire you?"

IBM

Requirements: Operating Systems.

Online Round:

The online round consists of a set of 5 interactive games to be played. It involves speed in calculation and a little bit of other algorithm concepts (including graph algorithms).

There's also a personality assessment test involving scenarios and response.

Those who score above a certain cut-off in the games are selected for the interview.

Student-1:

Round-1:

The interview involved a discussion on autonomous driving vehicles at length and the challenges it's facing. Any trending topic in the tech sector is being taken about.

There were no coding questions in this interview but core CS concepts were asked disguised as general questions and the interviewers expected the candidate to solve them using algorithms. Topics covered included Multi-Level Feedback Queue from OS.

The interviewers then asked questions on the projects mentioned in the candidate's CV. At the end, they asked the candidate if they had any questions.

Round-2: HR
The round lasted for about 10 mins and the interviewer asked general HR questions and at the end asked the candidate if they had any questions.

Tips:
1) Carry a good mouse and mouse pad for the test.
2) Be fast in calculations and other work for the online round.
3) Read a little about the company and it's recent acquisitions, inventions etc
4) Be thorough with your projects. The interviewers ask deep questions that you probably hadn't even thought about before.
5) There are 3 interviewers in the technical round as opposed to mostly 1 in other interviews. It is important to address each of them while answering the questions.

Innoplexus (DS):

Round 1:
The interview started with the question, “Tell me about yourself”. After this, the interviewer asked the candidate to explain their projects briefly. The explanation covered the models used, differences between them, evaluation metrics, precision, recall, ROC-AUC, regularization
techniques etc. One question was asked, “What is the activation function used in a multiclass classification algorithm?”

Round 2:
The interviewer started by asking the candidate to explain their previous internship wherein they had used unsupervised learning algorithms to find customer segments of the market. The interviewer focused on the problem-solving approach and asked questions about the working of models used, the mathematics behind the models, techniques used for finding the number of clusters in KMeans and hierarchical clustering algorithms, silhouette coefficient, metrics involved and many such questions which require thorough understanding of the field.

The interviewer asked about the insights and results attained after data modelling. After that, the candidate was asked about the random forest model, and it’s working, Gini impurity and entropy, advantages and disadvantages etc.

Instabase

Interview Rounds:

Round 1:
The interviewer asked about the candidates' intern project, thesis project and general hobbies. The flow of the interview was a coding question followed by some scopes of improvement, followed by answering some of the questions for the interviewer. The candidate was asked to write code for a class implementing LRU cache.The interviewer asked to make some modifications, such as implementing TTL for the cache. The interviewer also asked the candidate to implement LFU cache, but due to shortage of time the candidate only explained their approach. Finally, the interviewer asked if the candidate had any questions.

Round 2:
The interviewer started by showing a document containing some text, some heading and footer etc. Then gave 2 arrays, one with strings and another with their respective coordinates (Point p1,p2,p3,p4); where p1,p2,p3,p4 were 4 points of the rectangle covering the text in the image. (Point has a tuple {x,y}) The candidate was asked to print the output in such a way that it would vaguely resemble formatting in the image of the document. (from the topic OCR)

Tips:
Coding: Practice Leetcode, which would be sufficient in itself. Try virtual contests which will keep you fresh. Doing only leetcode will be a bit problematic for Constructive/Advanced Algorithmic questions which are rare, but were asked in a couple of companies.
Try practising some questions on codeforces for that. One can choose to avoid contests altogether and strengthen your weaknesses by doing topic based questions. Because generally straight-forward questions related to DS/A are asked.

Technical Interview: Study your subjects smartly and practice memorising and explaining the concepts. Try to study everything that makes you confident in yourself. Rest is just luck. Also, be careful what you write in your resume and be prepared to talk about any of the projects or technologies.

HR Interview: It is preferable to write the common HR questions and their answers in a word file beforehand, and discuss with fellow students if what one is writing is appropriate for an interview. One doesn't need to memorize it, but there should be a flow in the answer.

Intel (Software)

Student 1

Kind of resume required: Projects in the field of embedded systems/computer architecture puts you at an advantage. Mention your interests inclined with the company's perspective.

Written test experience:There were a total of 3 sections : Coding, Aptitude and core CS

Coding section : There was only one coding question. Enough practice at geeksforgeeks/interviewbit/leetcode/hackerearth will suffice.

Core CS : It contained questions related to OOPS, operating systems, computer architecture, C language, etc. Level of questions : gate level

Interview experience: There were a total of 2 rounds : technical and HR.

Technical round : It was sort of a rapid fire round. No questions related to competitive programming were asked. They were very interested in the projects and interests mentioned in the resume. Some of the questions (which were not related to the resume) were :

1. What is an embedded system?

2. Implement a function pointer in C

3. Some OOPS questions like dynamic polymorphism, etc.

4. Cache

5. Pipelining

6. Sensor interfacing (communication protocol, ADC, etc.)

7. Paging/segmentation in OS

8. Microcode (Implemented in a CISC architecture)

9. Interrupt I/O

The rest of the questions were directly related to the resume. Your resume will stand out among the other candidates. Some of the questions based on the student’s resume were:

1. Explain the working of optical encoders, the algorithm which you implemented and how to determine the odometry of the robot

2. Memory hierarchy design (requirement and tradeoffs)

3. Most of the projects were implemented on Arduino. So they asked some questions directly specific to the Arduino microcontroller.

Please make sure you don't lie on your resume. They will discuss a lot based on your resume.

HR round : Very chill. Make sure you prepare for common HR questions, though they are simple but think about the answers beforehand. They will definitely ask you why you want to

work at Intel, where do you see yourself in 5 years, etc. Gather some knowledge about the company. HR is all about your communication skills and your ability to remain calm. Be polite and relaxed, that's all. Be positive if you made it to the HR round. You have a very good chance of getting selected. Projects related to embedded systems/ computer architecture will put you at an advantage. But even if you lack these, they will ask questions related to competitive programming and your resume. In other words, they just want to know your technical skills and proficiency.

Be optimistic. The final semester will be the most stressful. But in the end, everything will work out .

Student 2

Intel (Hardware)

Kind of resume required: Projects related to the company's work and having some coding experience is always an advantage.

Written test experience: There were a total of 3 sections : Coding(MCQ), Aptitude and core CS.

Coding: Try to cover all questions on C and C++ available on Geeksforgeeks.

Aptitude section : pariksha.com , Aptipedia (If possible try to solve previous year apti portion seriously it helps!

Core CS : mentioned in previous posts(Do study sql coding …though not for intel but it helps in many other companies).

Interview experience: There were a total of 3 rounds : 2 technical and HR.

Technical:

Round 1: Since the student was not from an electronics background, the interviewer directly started off by asking which coding language student was comfortable in. Basic conceptual questions on oops, pointers, file handling, etc. were asked.

A problem statement was given: A number n was given and was asked to find the pairs having a difference to any user desired number (simple but then they asked for an efficient approach (interviewbit array section helped here)).

Note: smile and confidence is the key for this round.

Round 2: The interviewer was friendly and asked to chill on seeing a nervous student. Some questions on the student’s educational background were asked. Questions on projects and internships were asked. After a brief discussion, the candidate was asked some questions on digital design and to write Verilog code. While writing answers, try to be clean. It shows how clear you are in your solution or approach.

The student tried keeping the interviewer involved in the answers. Then they asked about the static analysis part (very important for electronics companies. Please be through with it). Interviewer devoted maximum time to it.

At last, the interviewer explained how it's like to work in intel as a tech (student was feeling excited, at the same time kept themself composed).

A puzzle question was asked in the end. Student was unable to solve it. (Student was unable to solve it. Interviewer told the approach)

Round 1 and 2 duration was around 1hr 30 min.

HR round- Keep preparing standard questions. It helps. Standard questions were asked. Staying positive is the key and showing the willingness for the company might get one selected.

Word of caution: Take proper sleep before interviews. Lastly, smile and be confident (no matter what happens).

Student 3

Intel (Hardware), Resume Shortlisting and/or Online Test, Technical Interview (2 Rounds) and HR Interview.

Written Test Experience: There were 3 sections: 1) General Aptitude, 2) MCQs on C Programming and 3) Technical. The contents of technical section comprise of Digital Electronics, Analog Electronics (mostly on MOSFET, RC circuits), EDC etc.**Interview Experience**: There were generally two technical rounds, and then HR round

Round 1: The interviewer went through the resume and asked the following questions:

1. Internship mentioned in the resume, and what did you learn there?

2. One of the extracurriculars on the resume

3. Student's technical interests, to which the student replied ASIC Design

4. Detailed ASIC Design Flow

5. Explain Physical Design Flow? Also the interviewer was asking questions on every step, like What is [step] and why it is done.

6. What is STA and where can we use it?

7. Explain Setup time, Hold time. What happens if the setup or hold criteria are not met?

8. Explain what is a metastable state?

9. Suppose you have 2 chips, one is having Setup violation, and the other having Hold violation. You absolutely have to buy one of these, which one should you buy?

Then the interviewer asked if the student had a preferred work domain, to which you should generally not give a preference. The student replied that though they had mode experience in one domain, they were quite flexible and ready to learn any profile offered.Interviewer asked if the student would be interested in working in the VLSI Backend domain. The candidate convinced them that they were genuinely interested in it. They asked if the student had any questions. Student asked more about the profile and what the interviewer liked most about Intel.

HR round: It was more of a briefing about the company, the work culture etc. The HR explained everything in detail, and asked the student to elaborate on their preferences w.r.t. profiles, preferred job location and technical skills you possess related to the job etc.

iRage Capital (SDE)

Coding Round: Link to contest: https://www.hackerrank.com/contests/iragecapital-sde-challenge-2020/challenges

The two questions asked were:

Problem 1 : Lucky Sequence 1
Find the largest number smaller than or equal to n and digits in non-decreasing order. (https://www.geeksforgeeks.org/largest-number-smaller-equal-n-digits-non-decreasing-order/)

Problem 2: Patterns And Colors

Problem Statement - Given a N * N grid with colors in each of the cells, modify the minimum number of colors so that after modification no 2 cells having the same color are in the same row/column.

Prerequisites - Flow, Graph Matchings

Solution: For each color form a graph of the cells that have that color. Add edges b/w cells that are in the same row/column. For finding max un-modified cells, find the MIS of the graph. Each edge denotes that if one vertex is in the IS(independent set) then the other cannot be in it. For a general graph finding the size of the MIS is an NP-Complete problem. But, the graph formed here has a special property, it is a Bipartite Graph.

And for the special graph -

MinimumVertexCover = MaximumMatching MaximumIndependentSet = nodes - MinimumVertexCover

(link to solution: https://docs.google.com/document/d/1ydiimiVuEZyrajuXWup2Z5FDtWvrVkxZGbrgtHIl4QA/edit?usp=sharing)

Jaguar Landrover (SDE)

Online Coding Round:
There were two sections - Aptitude and Coding.

Aptitude:
Duration: 40 minutes
There were 20 questions of varying difficulty. Difficulty changed depending on answers being right or wrong. If the current answer is correct, the next question will be of increased difficulty, else difficulty decreases.
Questions were mostly based on sequences and series, probability, modular arithmetic, etc. Some of them were based on some famous puzzles.

Coding:
Duration: 70 minutes
1. Josephus problem (https://www.geeksforgeeks.org/josephus-problem-set-1-a-on-solution/)
2. https://www.hackerrank.com/challenges/jeanies-route/problem

Interview Rounds:

Round 1 (Technical + HR):
There were 4 interviewers.
The first question was "Tell me about yourself". Next, technical questions started, which were mostly related to OOPS and basics of C, C++. They were based on Polymorphism, dynamic memory allocation, memory leaks, garbage removal, and few basic concepts. Next the interviewer asked to elaborate the internship experience of the candidate. Since the candidate had projects in web development, the interviewer asked why they preferred Nodejs to Django. They asked to check if a given binary tree is a binary search tree. (https://www.geeksforgeeks.org/a-program-to-check-if-a-binary-tree-is-bst-or-not/). They were quite satisfied with my approach.

Next the HR started with their questions, first they asked "Why JLR?". Then they asked a few situation based questions like "What would you do if you have to choose between a job at a well established MNC with not so good work and a startup where the work is interesting?". The interviewer also pointed out a few points mentioned in the SOP submitted by the candidate and asked a few questions on them. The HR asked two more questions: One was guesstimate based. It was to determine how many Jaguar cars must be ideally produced every year in India to make maximum profits. There was no other data given. The answer was to be guessed with some calculations. The other question was a puzzle (https://www.geeksforgeeks.org/puzzle-29-car-wheel-puzzle/).

JP Morgan

Written Round:

The coding round was conducted on the Hackerrank platform. There were two questions. The first question asked us to implement TF-IDF for a collection of sentences. There was no need for space and time optimization, your code just had to cover all possible boundary cases.

The second question was on dynamic programming.

Interview Rounds:

The student was asked 2-3 questions on DSA. Other than that, the student was asked a little about their projects which I was able to explain properly. The student maintained constant interaction.

The second interviewer focused solely on the candidate's resume. They asked about the candidate's projects and then inquired about the differences between a CNN and an RNN and how one would choose an architecture for a problem.

Then, the interviewer gave them an NLP problem statement and asked the candidate to come up with a basic unsupervised model for it. Finally, the interviewer asked the candidate a few questions on Git and AWS.

The third round was the HR round. Most of what they ask will be the standard HR questions you can find anywhere.

Mastercard (AI)

Coding Test:
1 coding question on linear DP and MCQs based on aptitude, data science and core CS subjects.

Interview Rounds:

Round 1:
Questions asked were based on the projects mentioned in the resume.The interviewers asked in depth questions regarding the internships, projects and other such experiences. The focus was on deep learning based projects.

Round 2:
Some of the questions that were asked in this round:
i) Physical significance of determinants, eigen vectors.
ii) Mathematical formula of distribution functions that were a part of the course on Probability and Statistics like Poisson distribution.
iii) Difference between list and tuple in python.

Round 3:
This round lasted for about 30 min and for the most part the interviewer explained in detail what work they do, teams that come under Mastercard AI and what skills they expect from the freshers they are hiring. The interviewer also asked how the company would align with the career goals of the candidate.

Round 4 (HR): General HR questions on “Why would you like to join Mastercard?”, “How have you spend your time after lockdown?”, “What challenges did you face during lockdown?”, “What life lessons have you learned due to the Corona outbreak and lockdowns?”.

Mathworks

Student 1:

Profile: Associate Engineer – Engineering Development Group (EDG) programme

Recruitment Process: The process spanned over 6 stages including online test, technical and HR interviews.

Stage 1: This involved shortlisting candidates based on their willingness applications on placement portal and resume.

Stage 2: Online Test:The shortlisted candidates have to appear for online test (2hr 30min) in either of following two profiles:

1. Computer Science (coding background)

2. Embedded Control, VLSI, Signal Processing

The student appeared for CS profile; the test had following sections:

1. Aptitude / Probability (6 Q)

2. OOP concepts (10 Q)

3. C language (8 Q)

4. C++ (8 Q)

5. Java (8 Q)

6. Python (bonus section – 8 Q)

7. Coding: this section had following two questions

- https://lh3.googleusercontent.com/0oJqIM_aYNhQG9FOzC_Uno-dm3QJ6rKlijV_7wpQkDG9QXeu4pWtSxaEdUZ1B0XW0vkk3I1f7RtiqV2Dol7MDesgzfA01SrjlBPoMYuUxdZVBJ-B2pN_-DTweST4MnshCxzvTrfb (medium)

- https://leetcode.com/discuss/interview-question/356477 (easy)

One has to code the above questions in two different languages in any of C/C++/Java. If both the Solutions are typed in the same language, they will be rejected even if both are correct. Note: Of sections 3,4 and 5, one has to attempt any two.

Keep yourself informed about extended shortlists released by companies so that you don't end up losing the opportunity.

Stage 3: This was supposed to be a PI but due to lack of time last remaining candidates were taken to GD. The topic of GD was 'automated code generation' (for/against) on which student had no idea about even remotely, but could come up with quite a few relevant points. Spontaneity and confidence in your answers is crucial.

Stage 4: Technical Interview

Since the student knew C, C++ and python, the interviewer handed him sheets containing algorithmic and conceptual questions from each of the above languages and another sheet that had questions on OOPs (it's a must). Most of the questions were mainly MCQs and output based. A few questions he asked were:

- https://leetcode.com/problems/trapping-rain-water/
- https://www.geeksforgeeks.org/next-greater-element/
- https://www.geeksforgeeks.org/length-longest-consecutive-1s-binary-representation/
- Difference between strings in C++ and Python (Immutability).
- Virtual Functions and Runtime Polymorphism.

Stage 5: Technical-cum-HR Interview:-The interviewer was a lady over zoom call connecting directly from the Main office. She had gone through ML & AI projects mentioned in the resume. She inquired about his projects, CPI and asked some typical HR questions and whether he had any other job offers (Answers to such questions are to be made up spontaneously and thoughtfully).

Stage 6: Final Interview

The interviewer was of senior manager level post. He introduced the student to EDG programme (for entry-level people) at MathWorks and asked questions such as:

· why MathWorks?

· how you came to know about MathWorks?

· Name a few MathWorks products. (MATLAB and Simulink)

· Have you worked on MATLAB?

· why switch to software from xyz branch? - Made up answers again (Don't say you were never interested).

· What is your location preference?

Noteworthy Tips

· Be thorough and confident of skills and projects you have put in your resume. Companies often scrutinize resumes and they don't like It when you are being dishonest.

· However, you don't need to be absolutely honest or casual about questions not concerning your skills (and projects).

· Being upfront, spontaneous and confident adds heavily to your advantage.

· Also be thoughtful and conscious of your answers and present them in a sensible manner.

· Stay in touch with branch TPRs. They are very helpful.

· You don't need to know MATLAB programming to get placed at MathWorks

Microsoft

Profile: SDE

Online Round:

The round was conducted on Mettl and consisted of 3 coding problems with a time limit of 90 mins. The problem sets were different for each candidate. Some of the questions are:
Q: Need to find LIS in given string. As string(characters will be lowercase Latin characters) was given was able to solve in O(n) time complexity.

Q: Question reduced to given a binary tree and two nodes A and B, need to find distance of each node A and B from LCA of A and B.

Q: A matrix pattern printing problem. Simple implementation problem. Return an array consisting of elements of top section obtained by drawing two diagonals on converted matrix including only those elements which are in the given matrix.
e.g.1

given matrix: 12

34

56

78

convert it into: 1200

3400

5600

7800

return array: 124

e.g.2

given matrix: 1234

5678 convert it into: 1234

5678

0000

0000

return array: 123467

Q: Nth term of pattern: 6 8 9 66 68 69 86 88 89 96 98 99 666 668 669 686 688 689... Best Solution in log3(N).

Q: There are vacant seats in each row in a stadium. The price of a seat is equal to the number of seats vacant in that row. N people are standing in a queue. The owner wants to maximise his profit by selling expensive seats firstly. Find the maximum profit earned by the owner.

Hint: Priority Queue.

Student-1:

Round-1: The interviewer asked for a brief introduction and then jumped directly to coding questions.

Q: The first question was ‘Merge Intervals’.

Q: The second question was based on compressing the string to multiple layers.
A: The candidate came up with a brute force solution with some basic optimisations.
Q: How does the autofill function in paint works?
A: The candidate gave an approach of BFS and visited matrix. The interviewer then went into the details as to how one will decide the boundaries and how one can undo it without losing the shape identity.
Round-2: The interviewer asked for a brief introduction and then proceeded to ask the candidate to explain their projects related to Data Structures. The interviewer didn’t seem interested in the first project so the candidate explained another one. After that, the interviewer asked the candidate a simple string expansion question without using any other string. The candidate solved it in the first attempt which impressed the interviewer.
There was no HR round. 20 students were selected.
Student-2:
Round-1:
Q: Find square root of given positive integer N with precision of 3 decimal places.
A: The candidate solved it using Binary Search over answer and implemented it on IDE.

Q: Design a structure/class which can store 100 digits of decimal numbers and supports operations addition and subtraction.
A: The candidate discussed an approach by using array and linked list data structure. The candidate further went on to discuss how to handle different cases i.e. when given numbers are positive-positive, positive-negative, negative-positive and negative-negative. The interviewer was impressed. The candidate was not required to code.
Round-2: The round started with discussion on the candidate’s previous internship experience followed by questions.
Q: What is thread synchronisation?
Q: Solve producer-consumer problem using both mutexes and semaphores.
Q: https://www.geeksforgeeks.org/check-for-majority-element-in-a-sorted-array/
There was no HR round.
Student-3:
Round-1:
Q: Given a very large binary tree. Check for each tree from a list of small trees that whether it is present in that large tree i.e. whether it is sub-tree of that large given tree.
Hint: Hashing

Q: Given an array and a value. Find the smallest size window whose sum equals the given value,i.e. find the smallest sized sub-array whose sum equals the given value.
Expected time complexity: O(N).

Round-2:

Q: Name a data structure with the explanation which is best for displaying a rectangular screen of 3D video game which has a whole 3D space. e.g. user display in GTA game.

Q: Given an array containing integers. Find the maximum product by excluding an element.

There was no HR round.

MICROSOFT

Profile: Machine Learning

Written Round: There were 50-60 ML/DS based MCQs. The questions covered a wide variety of topics like Norms, Probability and Statistics, Linear Algebra/Matrices, Dimensionality Reduction Techniques, ML Models (SVMs, Decision Tree, Ensemble Models like Random Forest and XGBoost, Linear and Logistic Regression, Neural Networks), Regularisation, Gradient Descent, and Convergence, High Bias and Variance, and Evaluation Metrics. The level of the paper was quite high. Only 4 students were shortlisted for the interview round.

Student-1:

Interview:

The interviewer asked the candidate to explain the projects and internship experience mentioned in the resume. After the candidate was done explaining, the interviewer cross questioned on some of the projects. There was a discussion on how accuracy levels could be improved for some of the projects. The interviewer asked the candidate to come up with some other evaluation metrics for a project. RNN was also covered as it was mentioned by the candidate on their resume. The interviewer gave a hypothetical RNN architecture and a problem statement, and asked the candidate how one could overcome certain limitations of the architecture in the given context.

A few questions from stacks were also asked. The DS and Algorithms aspect of the interview was basic.

Tips:

1) In day 1 slot 0 try to focus at max 3 companies. Do not go for the 4th company's interview as far as possible. You can only give 7 interviews in a single slot. So giving 2-3 interviews in each company improves your chances.
2) Stay honest and think aloud in the interviews. Do not hesitate to ask questions to the interviewer.
3) When the interviewers ask if you have any questions for them, do not reply with a NO. Ask anything related to the company, job profile etc.
4) Practice regularly on any coding website like Codeforces.
5) Resumes must not contain any stuff in which you may get stuck when asked about during an interview.

MindTickle

Online Test Platform:
HackerRank
Time: 90 mins
There are four coding questions.
Interview Process Platform:
Zoom
There were four rounds of the interview, out of which two are purely Technical, the third one is the Technical + Behavioral round, and the last one is the HR round.

Round 1: (45 mins) Technical

1)The first one was to find the maximum path sum in a binary tree.
https://www.geeksforgeeks.org/find-maximum-path-sum-in-a-binary-tree/
(You can find the solution here) .The student came up with a recursive solution the same as the diameter of the binary tree problem. The interviewer was satisfied with my approach.

2) The second one was to find the nth non-negative number missing in a sorted array. The student was further asked what the time complexity is. Initially, the student answered with the approach, which took O(length of the array) time, then they told him that this could be reduced by using binary search.

Round 2: (45 mins) Technical

there were two coding questions.

1) Given N points on a 2D plane as a pair of (x, y) co-ordinates, find the maximum number of points that lie on the same line.
https://www.geeksforgeeks.org/count-maximum-points-on-same-line/

Firstly, the student confirmed the maximum value of the number of points. The interviewer said that it could be up to 1000. The student told an optimized approach using the map data structure. The interviewer asked if they were comfortable with OS and DBMS. And then asked about consistency and indexes in a table.

Round 3: (45 mins) Technical + Behavioral

Following are some of the questions which were asked during this round.

1) Tell me about yourself.
2) First biggest achievement.
3) Second biggest achievement.
4) Tell me about your family
5) What challenges have you faced in your four years of college?
Afterwards, the interviewer dove into the resume and asked about their internship and projects.
Round 4: (15 min) HR round
He asked them whether they knew about the company or not, whether they saw the company's reviews on Glassdoor or not, to which they answered "No". For the last 10 mins he told them about the company, what it does, the impact they are making etc.

MTX SDE

Written Test:
It was a 90 minutes test conducted on Hacker-Earth Platform. The test consisted of 3 medium level coding questions and 72 MCQs based on Aptitude and CS fundamentals (OS, DBMS, OOPS, Networking and some language specific questions).

Interview Rounds:

Round 1:
Platform: Google Meet
Duration: 1hr

There was a panel of three interviewers. One of them started with some questions on OOPS and DBMS.
Some of them include:
1.Describe Class and Object in minimum words.
2.Difference between C & C++. Which C++ feature is most fascinating to you when compared with C?
3.A question on Relational DBMS.

Around 4-5 questions were asked related to DSA and the candidate was asked to share the pseudo-code and time complexity of their approach. Some of these questions were:
1.Given an array of elements, check if we can form a set with sum as (arraysum/2)? The interviewers asked about the time complexity of the solutions and also the recurrence relations of the codes.

2. There is a string of characters.Check if it is possible to rearrange the characters such that no two adjacent characters are the same. And, if possible, rearrange the string. After a long discussion over the approach and data structure to be used, the candidate proposed a priority-queue based approach.
The candidate was also asked about the shortest path algorithms and their time complexities.

Round 2:

There was a panel of two interviewers. The interview started with: “Tell me about yourself and how was your previous round?” One of the interviewers discussed the projects done by the candidate. Various questions on OS were asked based on CPU scheduling algorithms, Preemption, Non-Preemption, Deadlocks etc. Amongst the various questions on DSA, one was to explain topological sort and the various methods to implement it.
The interviewer then shared a link to the code editor and asked a question: There are two predefined functions to store and get the string values (set(key)=string and get(key)). However, we can store at max 1MB. Implement newset and newget functions to set and get such a string with space occupancy of more than 1MB. Key value is provided.
Round 3 (HR):
The interviewer discussed the candidates’ CV in detail and discussed all the projects, the innovations added in them by the candidate, their skills etc. Some HR questions were also asked in the end.

Round 4:
The CEO of the company took this interview. They talked about the company and asked general questions regarding the candidate.

Myntra

Student 1:

Online Test: There were a total of 6 questions (3 MCQ and 3 coding) to be solved in 90 minutes. Out of three coding questions two were of moderate difficulty and third was tough, based on suffix array. The student passed partial test-cases in all three questions and got selected for the interview.

Interview Experience:

It consisted of three rounds. Two technical rounds and one technical + HR round.

First Round-Technical (45 min):

6-7 coding questions based on two pointers, array, binary trees, linked list. All the questions were easy-moderate and standard problems of gfg. The student was asked to write the complete code on paper for every question.

Second Round-Technical (40 min):

This was also a coding round where questions on DP (variation of subset sum), array (rain water trapping), suggesting a data structure given some operation's complexity were asked. Again the student was asked to write code for every question. The questions were standard problems and of moderate level.

Third Round- Technical (20 min):

This round was supposed to be a technical +HR round but due to shortage of time, the interviewer asked only technical questions. He started with a puzzle (moderate level). Then he asked one coding question (an easy one). And for the last one he gave a plot and asked the algorithm which can be used, the answer was the topological sorting. He further asked the student to write code for it. He seemed impressed with the code.

Advice: All the interviewers were more focused towards the coding skill. So try to have a good practice of writing codes on paper.

Student 2

Online Test: There were a total of 6 questions (3 coding and 3 MCQ) and had to be solved in 90 mins. All the three questions were not specific on any concept but a general application of DP graphs etc. The student passed 12/15 cases for one question and 7/15 for the other and did not solve the third one.

Interview Experience:

It consisted of three rounds in total of which two were technical and one was HR.

First Round-Technical (30-45 min):

Around 5 coding questions were asked, like reverse order of words in a given sentence, merging linked lists, two pointers etc. These are easily found on gfg. Student was asked to write the complete code on paper and was asked to explain the code with an example. The time complexity was also asked.

Second Round-Technical (45-60 min):

This was also a coding round. The interviewer asked if the student had any idea about supply chains and few other technologies. Student had no idea. Also asked if the student has worked on linux. After that, coding questions were asked. They were more of the standard type from gfg like, rain water trapping, stocks buy and sell etc. Around 7-8 such questions were asked. The student was asked to write the complete code on paper for every question. Student explained all the questions along with the code by taking a bit of time rather than immediately writing code. This made a good impression. Student was asked which other companies interviewed them and why they weren't selected.

Third Round-HR (20 min): This was a complete HR round. The interviewer introduced themselves, about their place, education, previous companies etc. The student was asked to introduce themselves. Asked how the previous two rounds were and if there were any doubts. Student asked about the work culture and different roles and the interviewer clearly explained them for about 5-10 minutes. Then they had some general discussions.

Nutanix

Requirements: Parallel Programming, multithreading, Algorithms, system design.
Coding Round:
The round was conducted on Hackerrank and consisted of 2 questions of challenging difficulty with a time limit of 90 minutes.
Link to the questions:
https://drive.google.com/drive/folders/1n2HDwHJEgF7wxr8byaf8Trfdm_E29g47?usp=sharing
29 out of 140 students were shortlisted for the next round.
Debugging Round:
It was a pen and paper test, where the candidates were given 2 printed questions which were codes and were asked to debug them.
Both the codes were related to concurrency and were written in C++. Parallel programming is required for debugging them.
Q: Implementation of Readers'-Writers' problem.
Q: Implementation of LRU Cache using threads.
One has to know how to create threads, deadlocks, mutexes etc.
15 students were selected for the next round.
Student-1:
Interview-1: Algorithms
There was only one question initially, but the interviewer kept increasing the difficulty of the questions.

Q: You have a tree with a root at 1. Every node has some value written on it. There is a single query, you are given some "x", you need to find a node closest to the root, hang its value >=x.

Change-1:
Now among all equidistant nodes satisfying the above, you need to find the one which had the minimum |Ni-X|

Change-2:

Now you have to solve for 'q' number of queries instead of just one query.

Change-3:

Now there are updates queries, like "Update, Node Number, New Value". How will the solution change?

Change-4:

Till now there were offline queries. Now queries are online and in the form of a stream. How will the complexity change?

Interview-2: Systems The interviewer wanted to test the candidate's systems design and basic computer science knowledge.

Q: Design the basic architecture of a movie ticket booking system like BOOKMYSHOW.
Q: What is Sharding?
Q: What is Consistent Hashing?

The candidate was as discreet as possible with the answers and the interviewer was satisfied with the answers. There was no HR round.

Verdict: Not Selected

Oracle

Online Test:

The online test of Oracle was particularly different from all other companies. The test consisted of MCQ questions only.

There were three sections in the test and each section had subsections. The sections in the test:

- 1) Aptitude
- 2) Coding
- 3) Computer Science
- Subsections were divided like, the section of Computer Science had subsections like OS,DBMS,OOPs etc. Some questions in the section of coding were like one needed to choose the correct code given in the options which gave the output given in the question, another was based on conditional statements flow chart. This might seem a bit easy but the constraint given was that one couldn't go to the previous question and also the time given is very tight for such lengthy questions.
  Student-1:
  Round-1:
- There were 2 panelists and the candidate was asked to introduce themselves followed by a discussion about their internship project. The interviewers then jumped straight away into OS.
- Q: Name all the types of Scheduling Algorithms.
- Q: What are the cons of RR Scheduling Algorithm?
- Q: Find the smallest possible number missing from an unsorted array.
- A: The candidate solved it using a naive approach and the interviewer increased the range of numbers in the array and asked the candidate to solve for O(n) time and O(1) space complexity.
- Q: What are heaps? How do they work?
- Q: Explain the internal working of hash-maps.
- Q: What are collisions? How to handle collisions?
- The interviewers then asked a simple questions on BT and the candidate was asked to code on coderpad after which the interviewers tried to confuse the candidate in the code by cross questioning to which the candidate answered with confidence. The interviewers gave one last puzzle for the candidate to solve. The interviewers then ended by asking the candidate if they had any questions.
  Round-2: HR
- This round was short and lasted only 10 minutes. The interviewer had gotten feedback of the candidate’s previous interviews and asked the candidate if they had any questions. The candidate asked the same questions as they did in the previous round. The round was expected to have some technical questions but somehow the round was shortened.
  Verdict: Selected.

Student-2:

Round-1:

- The interviewer asked the candidate to introduce themselves and proceeded to discussions about the projects mentioned in the resume. The interviewer then asked basic questions on DS, Algorithms, and the internal working of hash-maps. The candidate was asked to write the code on paper.

Round-2:

- Q: Print the least path sum from root to leaves in a binary tree.
- Q: How to find the least distance between similar elements in an array?
- Q: Implement a doubly linked list using a single pointer/reference(XOR Linked List)
- Q: What is the number of hourglasses in a matrix?
- The interviewer asked for the code for all the above problems. The interviewer was only interested in knowing the solution that they knew. It was not fruitful to discuss the approach to solutions in this round.

Round-3:

- The interviewer asked about the data structures that the candidate had recently used in some problem or thought about. Based on that, a design problem was given and the candidate was asked about its use cases. The candidate was asked to write the code on paper. This was followed by discussion on tree data structures and why we generally use recursion in traversing tree data structures.
- The interviewer was satisfied with the discussions but had noticed that the candidate had a low SPI in one of the semesters as such the candidate was not selected for the HR round.

Verdict: Not selected

Tips:

- 1)Learn all the puzzles in GeeksForGeeks as they are asked by many companies.
- 2) Don’t ignore OOPS and OS.
- 3) Give mock interviews.
- 4) Always try to prepare with some peers.
- 5) Maintain a good CPI.
- 6) Never lose hope. Placements can be intimidating but always talk to friends and family. Believe in your preparation.

Paypal

Online Test
Date: 3rd November, 2020
Platform: Hackerrank
Time: 1:30 hr

Questions:
1. https://leetcode.com/problems/count-vowels-permutation/
2. https://www.geeksforgeeks.org/check-large-number-divisible-8-not/

A slight variation of this question.

Interview Experience (Virtual):

Date: 2nd December, Slot 2
Platform: Microsoft Teams

Total 3 rounds were taken, 2 Technical and 1 HR

Round 1:
Duration: 45 minutes

The interview started with “Tell me about yourself?” Majorly all the interviews start with his question and it gives you an opportunity to give a glimpse of your background and goals and your interest in the profile. The duration should be kept to 45 seconds at the most and can be ended in a way that can drive the interview in the direction that you like.

After that he asked me about my favorite topics in DSA and they replied with the standard Vectors/Arrays, Linked List, Stacks and Queues. He then started asking me the basic questions related to the working of Linked List and Vectors, the internal working of Vectors and fired up 3-4 follow up questions on the same.

He then opened up a Google Sheet and asked them the question:

https://leetcode.com/problems/binary-tree-zigzag-level-order-traversal/

The student gave him a solution using Queue traversal and he was satisfied. After that he ended the interview with” Do you have any questions for me?” The student asked him about the role and he answered, explaining about the roles and the technology stack they worked on.

Round 2:
Duration: 45 minutes

The interview started with “Tell me about yourself?” The student once again gave him the same answer that they had prepared. He then opened up Codepair and asked me if the student was comfortable with Graphs.
He then asked

https://www.geeksforgeeks.org/detect-cycle-in-a-graph/

The interviewer was very friendly and kept giving hints and tried to understand every step the student took to prevent me from making any mistakes. He tried a bunch of test cases and was eventually satisfied by the validity of the solution. He then moved onto my resume.

The student had mentioned a Machine Learning project and he asked me the basic questions related to the model prepared and the impact that it created. They had also mentioned a Business Development internship done at a startup and we had a healthy discussion on that as well.

He then ended the interview with “Do you have any questions for me?” The student asked him the same question that they had asked the previous interviewer. After he explained me thoroughly about the role and teams, he once again asked me if they had any other questions. This time they asked him about the effect of COVID-19 on the company and he was quite happy to answer my question.

Round 3:
Duration: 25 minutes

The interview started with “Tell me about yourself?” This time the interviewer asked them about other details that they had not mentioned like my schooling, family members etc. He then looked at their resume and saw two ML projects that they had mentioned. He was also amazed on seeing the Business Development internship that I had mentioned and asked them about it.

He then concluded that they had not done any technical stuff in my internship. Realizing this, I shifted his attention towards the other internship that they had done which was technical in nature. He asked a couple of questions and was satisfied with the answers. He then asked them about why they were interested in Software Development since they were from Biomedical engineering.

Being from a Non-CSE background, they were prepared for this question and they explained to him about their motivation, the challenges in the field and why they were straying away from it. He was impressed by the reasoning and concluded the interview with “Do you have any questions for me?”
The student once again asked about the role and the interviewer explained it. Then the student talked about PayPal entering the cryptocurrency market and the interview concluded

Paytm

Online test:

This round consisted of 3 coding questions but there were different sets of questions so everyone got different sets of questions. The student got the set consisting of one simple question based on calculation of expression containing bitwise or, xor and and as operators.

The second question was based on trees and the third question was also simple. I solved two completely and got shortlisted for next rounds.

Technical Interview

1: This round was started with brief introduction. Then he asked them about the knight problem link. Then also asked them to comment on time complexity and the student answered at once. After that, he asked them to reverse stack recursively link and write the code and also tell space and time complexity of your approach.

Later on, he asked some questions on linked lists and trees.

Technical Interview 2:

This round was also started with brief introduction. After that, he asked me some oops concepts like polymorphism, types of polymorphisms, Abstraction, inheritance etc. The student answered correctly. Then, he asked me questions on memory management from operating system like how you can search a word in 16 GB file but maximum capacity of RAM is 4 GB, how you can merge two sorted files of 8 GB each in 4 GB RAM.

The student thought for a few minutes and then talked about indexing, compressing and chunking techniques. Finally, he asked some questions on data structure and algorithms.

PhonePe

Profile: SDE

Requirements:

Online Test:

The test was conducted on DoSelect and consisted of 4 questions with a time limit of 90 minutes.

Q: https://leetcode.com/problems/smallest-string-with-swap/
Q: https://leetcode.com/problems/cherry-pickup/

The third question was a sliding window and lower bound problem. The fourth questions was about heavy-light merging.

Student-1:

Round-1:

The round was focused only on Data Structures and Algorithms.

Q: Delete a node from a linked list where a head point is not given. (Solve for O(n) and O(1) time complexity)
Q: https://www.codechef.com/LTIME36/problems/ASTRING
Q: https://leetcode.com/problems/trapping-rain-water-ii/

Round-2:

The interviewer asked the candidate about their hobbies, sports and club work they had in the college. This was followed by the interviewer asking for an explanation of exploratory project of the candidate. This was followed by a DS/Algorithm question:

Q: Given a matrix of size M x N, there are large number of queries to find sub-matrix sums. You need to preprocess such that one can answer each query in O(1) time, also you cannot use extra space.

Q: Implement autosuggest and autocorrect features.

The interviewer ended the round by asking the candidate if they had any questions for them.

Tips:
1) Keep letting the interviewer know what approach you are thinking at each point of time. Do not remain silent for too long.
2) Write about things that you are confident about in your resume. Never lie on your resume.
3) Do your projects sincerely.
4) Be confident and attentive in the interviews while answering.

Qualcomm

Profile: Hardware Engineer

Requirements: Digital electronics, Verilog, thorough in programming concepts in C/C++, computer architecture.

Student-1:

Selection process included a written exam, 2 technical interviews and an HR interview.

Interview:

Round-1:

Fundamental questions related to sequential elements like D-Flip Flops but with added synchronous and asynchronous constraints along with verilog code were asked. Static Time Analysis was also covered by the interviewer.

Q: Draw a state machine diagram for a sequence detector and then its verilog code.
Q: Draw timing diagrams(using an example) for setup and hold constraints.
Q: Explain the changes that will happen in the diagram upon adding combinational or clock delays.(related to previous question)
Q: What kind of profile would you prefer to work in the company?

Round-2:

The questions in this round were focused on basic digital electronics like parity generator, decoder/encoder etc. The interviewer then asked the candidate to explain the project mentioned in their resume. This was followed by a few questions based on computer architecture like Cache mapping, TLB and virtual memory. The candidate was then asked to write a pseudo code for a function that eliminates repeating characters in a string. The interviewer was keen on seeing one's approach towards the solving of the problem.

Round-3: HR

Q: What are your career goals and why Qualcomm? What are your expectations from hardware profile?
Q: What do you know about the company and it's ongoing work?
Q: Rate Qualcomm on a scale of 1-10. Also rate the current interviewer's skill in their role as an interviewer.
Q: Will you be comfortable working in Bangalore or any location?
Q: Any questions for the interviewer or about the company?

Rupeek

Student 1

A pen paper test on the day of interview followed by 3 rounds of interviews.

Pen Paper written test taken by interviewers:

There were around 4 sets. The question given to the student was rotten tomatoes. The approximate time provided was 10-12 minutes. Here is the question: https://www.geeksforgeeks.org/minimum-time-required-so-that-all-oranges-become-rotten/

Pseudo codes were not acceptable, had to write full code.

Advice: Try to write the code as clean as possible, without any scribbling or complex code which can make the code difficult for the interviewer to understand.

There were 3 rounds of interviews:

Round 1:

In this round standard problems on arrays, graphs and sorting were asked.

This round went for about 50-55 minutes.

The following questions were asked by the interviewer in this round.

1. https://www.geeksforgeeks.org/kth-largest-element-in-a-stream/
2. https://www.geeksforgeeks.org/topological-sorting/
3. https://www.geeksforgeeks.org/heap-sort/
4. https://www.techiedelight.com/check-given-graph-strongly-connected-not/

Another easy question on arrays were asked. Student answered all problems with their full codes (The interviewer said that you can write either full code or pseudo code that's up to you).Student couldn't recall topological sorting properly, but told whatever the student remembered. Interviewer helped a bit and was satisfied eventually.

Advice: Don't give up if you don't know the exact answer to any problem, try to tell the interviewer as much as you can recall. It is the approach and the effort which matters to them, not the perfect answer. Tell them the brute force approach first then the optimised solution. But almost for each solution, you need to know the correct space and time complexity as they ask for it.

Round 2: In this round standard problems were not asked, instead problems were aimed to check the basic concepts of coding. Student could not find these problems on the internet.

The first problem was: There is a DNS server which converts the physical address of a website to a logical one. For example an url is converted to something like 192.168.1.1 . The question was how does this server work? Basically had to tell the algo behind this. Student asked a few questions to make the problem clearer and told them the approach.

For example, the interviewer told that two websites with almost same urls should not have much difference in their logical address. Student proposed a solution using hashing just like we do in Rabin-Karp algorithm. Interviewer then started digging deeper into the solution and started pointing out the corner cases where it would fail or where the time complexity would get too high. This problem took almost 35 minutes and eventually the interviewer was satisfied with the student's answer. Here code was not required, only the approach and pseudo code mattered to the interviewer.

The second problem was:

Consider a social network just like linkedin. Identify whether 2 people are each other's 1st connection (directly linked) or 2nd connection (Both of them have a common friend). Take all the assumptions needed and write the full code.

Student immediately wrote the code taking adjacency matrix and explained the code. The interviewer was satisfied.

Final and 3rd round: This round was based on the resume and some HR questions. It started with a standard "Tell me about yourself" question. This is a crucial place where you can drive the interviewer the way you want to. Student walked them through the interests and hobbies, as well as the things student had done in college. The interviewer asked about internships and projects. Not only the technicalities but also the various challenges faced in a behavioural and technical way. Student was the co-convenor of a fest. Interviewer asked about it and the challenges faced and what new the student did that year. Asked about family background, hobbies, and future plans.

Basically, this round was a mix of internship, projects and HR questions. What matters in this round is the confidence and the soft skills you have.

Interviewer asked if the student had any questions. Student asked about the tech stack used at the company, the work that can be expected on joining. The round went for about 35 minutes.

Tips:

1. Give a good time for building and preparing your resume. Consult with your seniors and batch-mates while you are making it. Every word, indentation etc matters.

2. A good CPI always makes an impact.

3. Be confident and try to make the interviews interactive so that the interviewer doesn't gets lost in his work.

4. Prepare for interviews by giving mock interviews to your friends (Confident and fluent english makes an impact.)

5. For the online coding round of any company just refer to the questions asked in other colleges for the same company and also the previous year questions. (Placement Doc on FB page). They might repeat in the test.

Concluding it all, Placements are a very cool and tiresome experience. Don't just lose confidence in yourself and it will provide you great results.

SAP Labs

Profile: IBSO

Requirements: OS, DBMS., OOPS.

Online Test: (For both IBSO and Associate Developer Profiles)

This round was conducted on Hackerrank and consisted of 2 coding questions with a time limit of 1 hour.

Q: https://leetcode.com/problems/maximum-profit-in-job-scheduling/
Q: https://imgur.com/a/XZMykFU

Time taken to solve did not matter on Hackerrank. Applying brute force solution doesn't help one to get shortlisted for the interview rounds, it must be used as a last resort.

11 students were shortlisted for IBSO profile in the first list.
Student-1:

Round-1:
It was a technical round and was conducted on Hackerrank Codepair. The interviewer could see the candidate and their work while they were typing live.

The interviewer first asked the candidate to introduce themselves and proceeded with the resume and asked to explain their internship project. After this, the interviewer moved onto the candidate's B.Tech project which was primarily Android development with backend deployed on cloud. The interviewer was asking questions about the project like:

Q: Why were you using a No-SQL Database?
Q: Why did you separate backend?
Q: Why did you not make database connection directly from the Android application?
Q: How were you authenticating HTTP requests?

After this the interviewer moved to the coding part.

Q: Count the number of alphabets and number of digits in a string.
Q: What is the KMP algorithm for Pattern searching?

This was followed by some questions on OS.

Q: What is paging?
Q: What is the difference between processing and thread?

Next was the DBMS past, which was the most important topic for SAP Lab interviews. The interviewer started by asking about indexing.

Q: Compare dense and sparse indexes.
Q: What are the different types of joins?
Q: Define inner join.
Q: Given two tables, write a query for inner join.
A: The candidate informed the interviewer that they were not able to recall the exact syntax for inner join. The interviewer help the candidate with it.

Q: What are the ACID properties of DBMS?

After this a few questions from OOPS were asked.

Q: What are Abstraction and Encapsulation? How would you explain it to a 7th grade student?
Q: What are abstract classes?
Q: What are pure virtual functions?

The interviewer then asked the candidate to design a lift management system. The candidate asked relevant questions about the requirements from the system and presented a high-level overview of the design.

Q: What are your future goals?
Q: Why should SAP hire you?
Q: Do you have any questions?

Round-2:

This round was a mix of technical and HR. Two senior members from SAP Labs were conducting this interview. This round was mainly a test of the candidate's communication skills and how they would handle different situations.

Q: Why did everyone have an AI based resume in the college?
A; We have a good culture froAI in our college and thus we get proper guidance. Hence, it was easy to find help whenever one needed it.

Q: Would you find it difficult to switch to a different language that you didn't know such as Java?

The interviewers then proceeded to ask about the projects mentioned in the candidate's resume
Q: Explain your B.Tech project and your contribution in it.
Q: How were you authenticating the users?
A: Using a Firebase authenticator.
Q: Why were you not using Twilio?
Q: What if you had built the entire application and put into production, and then came to know that Twilio would have been far better, would you leave the project or will you improve it?

Q: If you received an offer form SAP Labs, would you like attending client meetings?
A: The candidate reacted affirmatively. Then the interviewer proceeded with a scenario.

Q: What if you are facing a client who wants you to complete a project that was supposed to be completed in 2 months in a week? You have tried to convince them but they are adamant. Will you agree or not?

The other interviewer then started asking questions.

Q: How were things in your hometown?
Q: What do you like more, being at home or in college?
Q: Why are you willing to join SAP Labs?
Q: What keeps you motivated to come to work?
Q: What would some professor in your department appreciate the most about you? What would they want you to improve on?

Q: What are your 5 year goals?
Q: What are your long term goals?
Q: What would you do when you get to work on a completely alien technology?
Q: What are your greatest achievements?
Q: Why did you not accept your PPO?

Q: Do you have any questions for us?
A: The candidate asked questions to both the interviewers about their work, experiences, their views on the organisation and if they had any valuable advice.

Round-3: HR

Q: Introduce yourself.
Q: What do you know about SAP Labs and what it does?
Q: Where did you come to know about SAP Labs?
Q: What was your experience with the interview rounds at SAP Labs? How would you rate them against other companies?
Q: What are your strengths and weaknesses according to your friends?
Q: How was your internship experience? Why did you not accept the PPO even though you had a fantastic experience?
Q: What is your dream company?
Q: Where do you see yourself in 5 years?
Q: Do you have any plans for higher education?
Q: Would you accept the offer if SAP extends it to you?
Q: Are you comfortable with relocation?
Q; Do you have any questions to ask?
A: The candidate asked the interviewer about their experience at SAP and what they love about the company?

At the end, 3 people were selected for IBSO profile.

SAP Labs

Profile: Associate Developer
Student-1:

Round-1:

The interviewer asked the candidate to introduce themselves and then proceeded to ask a number of basic coding questions for which the candidate had to write the code and explain the logic.
Q: Merge-sort.
Q: Mirror Tree
Q: Variations of Knapsack, Rod-Cutting.
Q: Word Break.

A few more basic questions were asked that can be founding InterviewBit and GFG. This round was like a rapid fire round.

Round-2:

The interviewer asked questions about the candidate's B.Tech project. A ton of questions related to OOPS, C and C++ were covered. The interviewer also wanted to ask questions from DBMS but the candidate didn't know about it. The round ended with 2 questions related to Deadlock and Process Synchronisation

Round-3: Managerial

Q: Do you know System Design?
A: The candidate replied no.

Q: How would try to design something similar to friend suggestion system on Facebook?
A: The candidate tried their best to explain their approach. The interviewers asked the candidate to try to put a section of that in code.

The interviewer was keen on the approach part rather than the code.

Round=4: HR
The round was short and felt more like a genuine chat than an interview round.
Q: Why do you want to join SAP and not other companies for which you were shortlisted for interview?

Verdict: Selected
Tips:
1) One should have at least 2 good development based projects in their resume and be well versed with the resume in and out.
2) For the online round, try to come up with an optimised solution, Brute force solution might not help.
3) During the interviews, stay calm and speak with confidence. Communication is the key, especially for the IBSO profile.
4) Never reveal you weaknesses even when being asked. Disguise your strengths as your weakness.
5) Always ask questions at the end of the interview and show that you are interested in the company.

Societe Generale

Student 1

Written Test Experience:
Test Platform – HirePro
Test Pattern –
1. Aptitude: 10 questions
2. Simple English: 4 questions
3. CS MCQ type: 19 questions
4. Coding questions: 3 questions (moderately easy)

Question: To find the number of triangles possible given N points as (x,y) in two arrays, one containing x and another having y coordinates.

Interview Experience:

Round 1: (1hr) It was a technical round; was started by asking student – "Tell me about yourself", try to keep it a bit technical and mention your co-curricular here. Then the interviewer jumped to the projects and internships and started grilling them. Further,they asked to sell my project and negotiate the price.

(Keep this prepared too - The purpose and real-life application of your project)

Then we went straight to OOPs and its concepts, the use of OOP nowadays and its paradigm,about situations where we use Inheritance over Composition and Aggregation over Association and vice versa,the difference between Encapsulation and Abstraction.
(NOTE: SocGen usually focuses a lot on OOPs)

After this, interviewer asked about the time complexity of all the sorting algorithms. The student told him, then he asked them which one is the best? Student aswered Merge Sort as it is stable, with worst, best, and average time complexity all being O(nlogn).

Further ,asked if this could be made better? Like with best-case complexity to be O(N) and worst O(nlogn). The student had studied about TimSort, and they said yes, they asked to implement TimSort, and were satisfied.

The student asked about the role, the work, their clients, the work-life, and the training period details, this went on for another 15minutes.

Round 2: (1hr) HR round. The interview started with their introduction, along with a discussion about their internships and projects. Interviewer asked about the future of AI and its application in banking industries, then all those common HR questions -your weakness, strengths, personality, challenges faced if any, and a situation where a person in your team goes behind your back or doesn't agree to your plan – how will you deal with it?

Why Societe Generale?
Why software from Chemical Engineering?
What are your future aspirations and goals?

The interviewer seemed quite happy with their responses and asked me if I had any questions for him.

Round 3:(10 mins) This round took place at 1:15 AM !! It was the final telephonic round as told by the TPR; here interviewer asked about my location preferences and family background details, whether they are from Government sectors or not.
Student 2

Written Test: Platform – HirePro (Very strict, Webcam and Audio Proctoring, AI based warning system on inappropriate eye movements)

Test Pattern –

1. Aptitude: 10 questions
2. Simple English: 4 questions (2 Comprehensions having 2 questions each)
3. CS MCQ type: 19 questions (including SQL, SDLC, Java-Python Coding Outputs)
4. Coding questions: 3 questions (LeetCode Easy-Medium Level)

i. To find the number of triangles formed by a given set of coordinates + minimum number of lines passing through three points (I can not recall exactly).
ii. Total number of prime factors of all numbers in the given range [L, R].
iii. It was based around the factors of a number.
Interview Experience:
Round 1: (15mins)

The interviewer started with 'Tell me about yourself'. Always take this question as 'WHY YOU ARE INTERESTED IN THIS PROFILE?'. Then they asked about OOPS ,pointers, how to declare an object of a class without the 'new' keyword and pointer ,pointer arithmetic. Asked me around 8-10 questions from OOPs, Logical Regression, Decision Tree Classifier (my project), and a moderate coding question (without any library, sorting etc).
Round 2: (1hr):They had a discussion about AI in banking. Tips:
1. Always give examples to support your statement. Do not just spill out a mixture of fancy words to impress the interviewer.
2. Research a lot about SocGen. Read JD. And subtly push the qualities mentioned in JD in your answers.
Round 3 (45 min): It was again a skype call. And the first question he asked was– “How do you feel sitting in front of a webcam, well suited, that too at 1:25AM?”. The student asked a lot of questions about the company, investment banking etc.

Student 3

Interview Experience: Round 01: Duration - 45-50 minutes

Mostly like all other interviews, the interviewer asked them - Tell me something about yourself? Now, this question will not ensure your selection, but if not answered well will not leave a good impression. Moreover, it gives you a chance to shape your interview direction, which might help start a chain effect of follow-up questions and an easy flow to the conversation.

The student had a couple of foreign internships, so they prepared it beforehand to draw their attention . They explained to the interviewer every aspect of the project.
While explaining, he repeatedly asked them questions related to ML, SQL as their projects were based on that. -

Then the questions were more or less related to File Searching/Pointer.

First, the student answered him with the brute force approach, then they gave an optimized solution but still they were consuming O(N) space, then asked to optimize Space Complexity also. The student gave an answer.

Now,the interviewer asked them about one of their projects that was based on Deep Learning. He asked them whether they could run the code in Google Colab and present it.

Next question was to design a social-app like Whatsapp?

The student thought for a while about all the cases and presented an approach. Interviewer was satisfied In the end, he asked, Do you have any questions? The student asked him a couple of questions.
Round 02: Duration - 30-40 minutes

The interviewer asked them whether i had my dinner, how am I feeling, and some other casual stuff and told the student to take this as a normal conversation and not as an interview.

Again, He asked: Tell me about yourself?

The interviewer asked about the internships.. Questions SOC-GEN HQ, experience and all. He asked them about how they were able to get those and how they got the scholarship, the whole process, and all.
Then , asked questions related to Machine Learning and Deep Learning. After this, they gave a Problem Statement and asked them the type of model they would choose and why?

Then asked HR Questions?

Why, Soc-Gen?
Why in Software Development and not Biomedical Engineering
Why not Further Studies
Where you see yourself etc

In the end, he asked, Do you have any questions ?

Round 03: Duration - 10 minutes

This was a telephonic interview. Asked about goals, Location preference, Family background ,to explain one project and concluded the interview.

Sprinklr

Profile: Data Science
Written Test:

The written test was taken on Hacker-Earth. The test consisted of 2 coding questions of 100 marks each of moderate difficulty. The time duration was 1 hour.

Interview:
Student-1:
Round-1:
The round was completely based on machine Learning. The interviewer was testing knowledge behind the algorithms and the math involved. Only applied knowledge of algorithms is insufficient. The interviewers asked the candidate to write code for ML algorithms, but the candidate replied that they were out of practice, hence they couldn't code the algorithm. The candidate was asked to explain the math behind Gradient Descent, Back-prop, SVM, PCA and Logistic Regression. A few more technical questions were asked such as:

Q: How does one handle co-related variables in a dataset?
Q: How does one decide which variables to keep and which ones to remove?
Q: How to handle undercutting and overfitting?
Q: What is bias? What is variance? How are they related to undercutting and overfitting?
Q: How can one judge if high-accuracy of a model is good or bad?
A: The candidate answered interns of Confusion Matrix.
Q:How to handle a dataset if positive examples are very low in number compared to negative examples?
Q: When should Regularisation be used? In which cases does Regularisation not help?

The interviewer also asked some questions related to ensemble models as the candidate had mentioned it in their resume. The interviewer discussed Bagging, Boosting and Boot-strapping. This was followed by questions related to XGboost and the difference between it and Gradientboost. The interviewer wanted to ask more questions, but due to the time limit of 45 mins, the interviewer ended it.
Round-2:
Only 3 students were shortlisted for the second round. The interviewer asked the candidate to give feedback about the previous interview. The candidate also told the interviewer that they were not able to write codes for the ML algorithm due to not being in practice and was comfortable in Data Structures/Algorithms. So the interviewer asked the candidate to code for a few question.

Q: https://www.geeksforgeeks.org/trie-insert-and-search/amp/
Q: https://leetcode.com/problems/best-time-to-buy-and-sell-stock/description/
Q: https://leetcode.com/problems/best-time-to-buy-and-sell-stock-iii/description/
Q: https://leetcode.com/problems/best-time-to-buy-and-sell-stock-iv/description/
Q: https://www.geeksforgeeks.org/median-of-stream-of-integers-running-integers/amp/
Pseudo code was not accepted, the interviewer was looking for a full working code with test cases.

Verdict: Selected

Sprinklr

Profile: Product Engineer

Online Assessment:

It consisted of 3 coding questions of varying difficulty and 10 MCQs. The questions were related to simple greedy, DFS based and digit DP based ones. 17 students were shortlisted for the interviews.

Interviews:

Student-1:

Round-1 :
Q: Given an array increasing - decreasing - increasing and so on, how to sort the complete array?
A: By merging k-sorted arrays.
Q: Find the left view and bottom view of a binary tree in a single traversal of the tree.

Round-2:
Q: Given a string s, find the number of ways to split the string such that each split part has a unique starting character.
Q: https://www.geeksforgeeks.org/find-number-pairs-xy-yx/
Q: Design Chess.
Q: https://leetcode.com/problems/largest-rectangle-in-histogram/

Round-3:
Q: Find if the given tree is a mirror tree or not
Q: Variation of Knapsack.
Q: Design a URL shortening service.

Some probability questions and questions related to DBMS like Indexing and B-tree were also asked.

Round-4: HR
Q: Why did you choose Sprinklr?
Q: What are your strengths and weaknesses?

Student-2:

Round-1:
Q: Find the Median of 2 unsorted arrays.
Q: https://www.geeksforgeeks.org/median-two-sorted-arrays-different-sizes-ologminn-m/

Round-2:
Q: https://leetcode.com/problems/burst-balloons/
Q: Implement a stack using array.
Q: https://www.geeksforgeeks.org/implement-two-stacks-in-an-array/?ref=rp
Q: https://www.geeksforgeeks.org/efficiently-implement-k-stacks-single-array/

Both the rounds required the candidate to write fully working optimal code.

Round-3: HR
Q: What are your strengths and weaknesses?
Q: What is your vision in life?
Q: Why have you chosen Sprinklr?
Q: What were the names of the previous interviewers?

Finally, 2 candidates were selected.

Tips:
1) Ask the interviewer for hints if you get stuck while solving a problem.
2) Drive your interview carefully.
3) Mention 1-2 projects related to DL/NLP in your resume if appearing for DS profile.
4) Read articles related to ML from Medium, Analytics Vidya etc.
5) Never lie on your resume. Write only what you are confident about.
6) Be regular with competitive coding for racing online assessments. Give virtual or live contests to increase speed.
7) Practice OOPs design. Use resources like https://www.youtube.com/channel/UCvEbA5RN5YLeOwYLXwC-jhg
8) Revise theoretical subjects from: https://www.studytonight.com/
9) Some more resources:
https://docs.google.com/document/d/1-FkzjjpIhNRVsCT0JfnJJw3_pgyI74NIWjiSdewXiPo/edit?usp=sharing

https://docs.google.com/document/d/1Oj_uC9-DDHEgk79Zgrd9zb3ztBsnKk-5bpAxsonZoHo/edit?usp=sharing

Standard Chartered

Student 1:

There were 3 rounds:

First round: The student was asked a lot of questions including interests, one about the project the student did and a programming question (find anagram of a word). Was asked to design Uber. It was round packed with questions, but having a good command in the respective areas would help you sail smoothly through it. It went for around 40 minutes.

Second Round: Interviewer started by asking how the student would add value to the company, why the student was good for them. They asked about another project the student had done. Explained it in detail. Was asked why this project was chosen. Asked how the student's work during the internship helped that firm. Asked about the kind of role the student wanted. Student said developer. They had a good interesting discussion about how we need to understand the market and not just develop. It went around 40-45 minutes.

Third Round: It was the HR round. Student was asked to tell about their family. The motive behind it probably to check whether the student will stay in their firm or not. Student gave positive answers. Student had studied German. Interviewer asked why German. Then they went on discussing Germany's history, World Wars (I and II). The states and the cause of its rise, the list goes on. It went on for the next 40 minutes. The round lasted for 46-48 minutes.

Personal advice: Know your resume really well. Acquire good communication and presentation skills by the time you will get to the interview. Be cool and nail it.

Thoughspot

Written Test:
Round 1:
There were 4 questions(1-60 points, 2-75 points and 1-90 points) in the test.

Round 2:
It was a 50min test on Hackerrank with only one question of implementing Big Data Library.

Interview Rounds:

Round 1:
First question asked by the interviewer was Merge Intervals. Next question was to update the nodes of a binary tree with the number of ancestors greater than the node value. The solution needed was using an AVL tree to store the ancestors using that it comes down to the worst time of O(nlogn). Next, the candidate was given a set of words and had to find the pairs which formed a palindrome on concatenation. This can be solved using a Trie data structure. The interview lasted for around 1 hr.

Uber

Company Details:

The online test was conducted in the month of November and the interview was scheduled on 1st of December.

Kind of Resume Required: There is no need for a specific type of resume for Uber. Your resume should have all the basic information in it. They don't look at your resume much.

Online Test Experience:
The online test was a tough one.
The simplest question was a Codeforces B to C level question.
The second one was a simple, yet a lengthy question. It was more mathematical than the first question.
The third one was the toughest one which required you to have a really good grasp on your P&C skills.

Overall the test was heavily oriented towards math. The student got one question correct and was shortlisted for the interviews.

Personal Interviews:
The interview consisted of 3 rounds of personal interviews.

The first round was a coding round where the interviewer asked me programming problems and the student was supposed to code them out in the Hackerrank Codepair environment. The questions were of medium difficulty level and all of them required a greedy approach to be used.

The second round was a problem solving round. It was more of a discussion round where we explored the different dimensions involved to resolve inconsistency in the database during a flash sale on an e-commerce portal like Amazon. The interviewer was very friendly and we had a really great discussion.

The third round was again a coding round but in this round, we discussed only one problem as it was a difficult one. More than the solution, the interviewer was keen on judging the thought process. The student wasn't able to code out the solution because of the time constraint but they did explain their algorithm.

Vedantu

Online Test:

The test was conducted on HackerEarth. There were a total of 2 Coding questions to be solved in 60 minutes.

Interview Rounds:

Round 1:
The interviewer started with “Tell me about yourself”. Then the interviewer asked about the candidates’ intern experience. The interviewer asked to code a binary search. Then they asked, “What if the array given is very large and you cannot determine its size?”
Ans: Start taking the last element at index one initially multiply the endpoint with two until you get the bigger element and do a binary search.

Next question, given an array num of integers, you need to return an array count where each index in this array will give the number of integers in nums array smaller than the corresponding integer in nums array towards its right

e.g. nums: 5,1,0,6
count: 2,1,0,0
Constraints: size of array(n) - 0 to 10000
each integer in array(m) - 0 to 10^5

Ans: First, the candidate explained the brute force approach with complexity (T: O(n^2), S: O(1)), then they explained the approach where they’d store frequency of all integers for all elements in the array (T: O(n*m), S: O(n*m)), then they explained Fenwick tree approach (T: O(n*log(m)), S: O(m)), but the interviewer asked to decrease the space complexity. After getting a hint, the candidate gave the merge sort algorithm solution where frequency was stored using hashing (T: O(n*log(n)), S: O(n)).

Round 2 (HR):
The structure of the interview was as follows:

1. “Tell me about yourself.”
2. Asked about the internship in depth.
3. Then they discussed projects and some technical questions were asked.
4. Then some HR questions followed.

VMWare

Student 1:

Students were shortlisted either through the online test or resume. The student was shortlisted through the latter. There were 3 rounds of interviews, conducted through virtual mode through Zoom. Breakout rooms were created with the respective interviewers for each round.

Round 1: Technical (40 minutes)

-Tell me about yourself? Told them 3-4 lines about the college experience and what got student interested in the role.

-Why switch from xyz branch? Told that student did some projects in non-core that led to the switch. The interviewers were interested in the student's B. Tech Project and the conversation branched out to it.

-What did you do in the project? The project consisted of android app development, polynomial

regression, and a bit of cloud computing. Student did the best to explain the entire project, took around 25 to 30 minutes. The interviewers knew about app development and polynomial regression and cross-questioned multiple times. Student answered every question correctly. They were quite impressed, and luckily, didn't ask difficult questions in the subsequent coding section

-What are you strong in? Data structures and algorithm (was asked me to present the screen and open an IDE of student's choice. The coding questions began)

-Convert an array into a BST. answered correctly.

-What is inorder traversal? answered correctly.

-Print the BST in inorder: got confused. The interviewer provided some hints, but the student was unable to do it.

They moved on to other questions

-How would you implement inheritance in Python? Make a class shape and a class rectangle that inherits from it. answered correctly

-Difference between class variables and instance variables. answered correctly

- Do you have any Qs for us? What is the need for virtual machines in servers?

Round 2: Techno-management (~50 minutes)

The student had some internet issues in this round and did most of the interview over a phone call. The interviewer was cool about it.

- Tell me about yourself: Gave the same answer

- You have a server that's operating at its maximum capacity and printing "Hello World" 1000 times in a second. How would you print "Hello World" 1 million times in a second? A 'master' server could allocate resources to various 'slave' servers. Made a simple flowchart to aid the explanation (not sure if this is the correct answer).

- What's the difference between multiprocessing and multithreading? answered correctly.

- Are there pointers in Python? answered correctly

- What's the difference between call by value and call by reference? (asked to explain through code). answered correctly

- What's the difference between supervised and unsupervised learning? Answered correctly, gave examples for both.

- What do you know about VMware? Told about virtual machines and cloud computing (had read the company's Wikipedia page before the interviews)

- Do you know the names of any services that VMware provides? Told them ESXi. Was very impressed.

- Have you used Linux? What are some of the flavours of Linux? Student had used it a bit, but don't use it regularly. Told Ubuntu and Mint for the latter.

- What is the etymology of the word Ubuntu? The word comes from some African tribe. Student didn't remember the whole story. Interviewer told the whole story.

- Do you have any questions? What technologies do freshers work on at VMware?

Round 3: HR (~10 minutes)

The round consisted of simple questions to gauge the personality of the candidate.

- Tell me about yourself

- Tell me about your family

- What are your career aspirations?

- What challenges have you faced in your four years of college?

- Do you have any questions? post- covid, employees may not be inclined to work in offices, how is VMware dealing with this?

Tips

- Do some research about the company you're interviewing for .
- Repeat the question back to the interviewer to make sure you're on the same page.
- Keep talking so that the interviewer knows what you're thinking.
- Always ask something when given the chance.

Student 2

Rounds

1. Online Test

2. Interviews

Online Test

The test was of 90 minutes duration on hackerrank. It had 3 coding questions which were of easy to moderate difficulty level.

1. Very similar to the activity selection problem.

2. A question based on merging intervals(greedy).

3. A question based on sorting the array which had values from 1 to n.

Interviews

Round 1: The interviewer began by asking about the student's projects. Student explained it. Then the interviewer gave problems:

1. An operation on an array was defined as rotating the array from index 0 to index i. You are required to find the number of operations to sort the array.

2. Implement stack using a single queue.

3. Ad-hoc question based on priority queue.

4. A question based on strings and hashmaps.

5. A simple question based on binary trees

Asked if the student was comfortable with the concepts of operating systems. Student said, not much. Interviewer proceeded to ask questions on core java. Asked about JVM, representation of objects, byte streams, how we convert objects to byte streams and vice versa. The round lasted for about 45 minutes.

Round 2- The interviewer scanned through the resume and was interested in one of the projects which was based on parallel computing. Asked basic questions on processes and threads. Interviewer asked questions from Operating systems for which the student told he was not comfortable with the concepts of OS. Interviewer told that they were done with this round. It lasted for about 15-20 minutes.

After that, the student was worried of being disqualified. But there was one more round in which one of the interviewers asked about the online test held on hackerrank and in detail about each and every problem. Then asked why the student was uncomfortable with OS. They said there will be one more round and based on that, they will decide whether to proceed to HR round or not.

Round 3- The interviewer seemed quite serious. Asked how the IntelliSense was implemented in the IDEs in which we code. Student told that we could use a trie and was asked to implement it. Then questions on OS were again asked which the student couldn't answer. The round got over within 20 minutes.

The student was not called for the HR round after that.

Takeaways- They really focused on concepts from operating systems.

Wells Fargo

Written Exam:
There were some aptitude questions, English Proficiency questions, data interpretation questions, and two coding questions.

For the student, one coding question asked was of Graph, and the other was from Dynamic Programming.

Interview 1:

There were three interviewers. It was a very casual setting. The interviewer asked the student to introduce themselves. Then some questions followed: Given three stocks(A, B, and C). A and B had very low mean and moved with very low variance last year, while C had high mean and variance. C crashed this year, while A and B held their behavior. Using a predictive model, predict the value of stocks for the next year. The student did a very healthy discussion on how it isn't very worthy of predicting something like that. You need to have substantial experience with Time Series to handle such questions.

After the answers convinced him, he asked me to share my screen and write an ARIMA model. The student wrote the rolling ARIMA and normal ARIMA and explained how both work and the intuition behind them. The interviewer then asked if such statistical time series prediction models can be used in Algorithmic Trading.

The student had a good experience working with all this, so they discussed the answers with him. The second interviewer asked them a simple SQL question. The interviewer asked me how difficult questions they have solved in SQL, to which they told him about my almost gold badge ratings in SQL in hackerrank.

The third interviewer asked them a coding question. The student asked him for time to think of an optimum solution. He asked them to code the brute force approach, which they did. There were some discussions of the way I had declared variables.

HR Round:

The HR was keeping a note of all the interviews being taken. He asked if they explored Mechanical Engineering before studying Machine Learning. He said maybe since everyone was walking the same path, so they blindly followed them.

After some time, the student realized he was checking if they got nervous with his questions. He then asked about their views on the Bihar Elections, on which they had some healthy discussions. There were some more discussions after which he asked if they had any doubts.

Zilingo

Profile : Software Developer

Rounds:

1.Online Coding Round
2.Interviews

Coding Round:
Duration : 90 minutes

Questions :

1.Some basic question (Greedy)
2.Knapsack
3.https://leetcode.com/problems/cherry-pickup/
4.https://www.hackerrank.com/challenges/possible-path/problem

Interview Round:
4 Rounds
Round 1: The interviewer straight away began with OOPS questions.The questions were very standard ones based on classic diamond (multiple inheritance) ,overloading,overriding,Virtual functions,abstract classes and so on.Then he asked the student standard GFG/IB questions.

Then the following questions were asked:

1.Print highest value in each level of a n-ary tree.
2.Different Views of a tree
3.Merge Sort on linked list.
4.Place all ODD and even elements together in a linked list.
5.Inorder traversal without recursion/without recursion without stack
6.Construct a tree from pre order/post order and in order traversal.
7.Reverse a queue using recursion.
8.Stack based questions(standard).

Duration 40 minutes.

Round 2: Standard questions were asked. They expected the complete functions and not the Pseudo Code.The interviewer asked the student to explain the code for all the questions.
Duration: 60+ minutes.

Round 3:
HR round
The HR asked the student to tell me something interesting about them not in their CV. Some discussion about my hobby. Duration 10-12 minutes.
Round 4:
Managerial
The manager just asked a bit about them,where they were from etc. No coding/HR questions were asked. It was more of a discussion.

Thank you!