PU Chronicles
Summer Internships Edition
AY 20-21

For Internal Use Only

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PREFACE

Internships, for some, it's the one single thing that matters, for others it's just another piece of the college puzzle that shapes our future.
Without a doubt, it is a life-changing event or process in a student's college life.
Undoubtedly, one of the key factors that contribute to it is guidance from seniors.
We have decided to streamline the process a little, so you can focus more on the actual preparation than trying to get a hold of them.
We hope that you find these Chronicles helpful in the same.

Some general tips for internships:

- Think and decide well in advance if you even want to appear for the internship process.
- Prepare for internships. A lot of people regret their casual approach later on.
- Pick the companies you want to sit for (check eligibility, profile etc.) wisely. This does make a difference.
- Stay well informed always. Cooperate and keep in touch with the PU Team.
- Keep your motivation levels and energy high through all the ups and downs. Don't lose hope yet!
- Do not hesitate to contact seniors (alumni) for help, even the ones you do not know. Trust us, they do help!

A *word of caution*. Internships is an extremely volatile area and changes based on a number of factors such as market conditions, recruiter relationships and business constraints. Please read through the document with the awareness that the trend for a certain year may not be the trend for the next year. For instance, a stream that did not do well in a particular year may well be the best placed in the following year. The rounds and processes conducted by a company in the previous semester may very well differ this semester.

Hence, be the best you, rest will follow!
And rest assured that the Placement Unit is always there for you!

All the Best,

Placement Team

DISCLAIMER

All the feedback is provided by the students who have secured internships in various organizations. We have tried our best to ensure that every detail in the PU Chronicles is correct.

The Placement Unit assumes no responsibility for errors or omissions in the contents of the Chronicles. The Placement Unit reserves the right to make additions, deletions, or modifications to the contents of the Chronicles at any time without prior notice.

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Adobe

WFH

IT

Stipend Offered: 1,00,000 per month

Product Intern

Recruitment Procedure

Round 1: Online Coding Test on HackerRank

It was split into ~5 sections. The first 3 sections consisted of MCQs from linear algebra, prob stats, standard puzzles. The 4th section was 2 coding questions, don't remember the exact questions. The 5th section was to make a 200 word writeup on a project that had made me eager to learn more and the results of the project.

Round 2: Technical Interview

Lasted for about 1hr. The interviewer started off by asking me to introduce myself. Then he looked at my resume a bit and asked about the work I had done during PS1. Asked why I was interested in working for Adobe. He said he had looked at my submissions on HackerRank for the coding test and was happy with them. He asked why I had used C++ and that led to a discussion on compiled vs interpreted languages and different use cases for the same. Then we moved on to the coding question, which was identical to this: https://www.geeksforgeeks.org/boundary-traversal-of-binary-tree/
He was satisfied with my solution. Then he asked if I had any questions for him, and we chatted a bit about the work and work culture at Adobe. That was it!

Note: Start coding early. I started only a few months back, and feel that it would have been better if I had dedicated small amounts of time over my first and second year instead of putting in a lot of effort during the few summer months before the interviews.
Note: It is advisable to be prepared with OOP and DBMS as well. Each interviewer has his/her distinct style, this interviewer stuck to DSA though.

Important Topics and Subtopics to Remember

DSA, OOP, DBMS, Linear Algebra, Prob Stats

Sources of Preparation

InterviewBit, LeetCode: DSA
Linear Algebra, Prob Stats: Course work was enough

Adobe

WFH

IT

Stipend Offered: 1,00,000 per month

Product Intern

Recruitment Procedure

Adobe SheCodes

Round 1: Coding test
This included 4 parts, Cognitive Assessment (MCQ - logical questions - 20Q in 20 mins), Technical Assessment (MCQ questions from DSA, OOP, DBMS - 20Q in 20 mins), Coding Assessment (2 Q, 60 min - coding) and Gamified Assessment (3 Tasks - 23 min, testing memory power, analytical skills etc, there is demo before each task)

Round 2: Technical interview
The interviewer started with name, college, branch, then to coding questions directly.
Given a function that generates random numbers, generate a random string (a-z,A-z). Variations in that, like the random number generator gives only 0 or 1.
Implementation of Hashmaps from scratch, including hash function and some questions on that.
Sorting an array that has only 0,1,2 .
He also asked complexity and space analysis in the questions.

The interviewer was really nice and gave clues at times

Important Topics and Subtopics to Remember

DSA (Different structures and implementation from scratch, standard algorithms like dfs, bfs and variations), OS (how processes happen and memory allocation) , OOP(standard conceptual questions like polymorphism, encapsulation etc), DBMS, MuP (how operations happen at lowest level)

Sources of Preparation

DSA, OS, OOP, DBMS from class and slides, GFG, contests - codechef and codeforces

Additional comments

Knowing things other than DSA and coding, like basics of networks, operating systems, and how things work from the lowest level helps.

Adobe

WFH

IT

Stipend Offered: 1,00,000 per month

Product Intern

Recruitment Procedure

I was selected through SheCodes

Round 1 : Pan India Test (Elimination round)
This test happened in late October.
This was a test with MCQ + 2 coding questions.
The test was fairly straight forward, mainly based on DSA. The MCQs covered almost all topics of DSA, some DBMS and OOP. Out of the two coding questions, one was easy and the other medium. The medium question was Longest Common Subsequence Problem

Round 2 : Interview
After the test, some people were selected for the interview round. The interviews were spaced out over a very long span. Some people had it in December/Jan but I had mine in March. Patience was key here.

He asked me to describe which was the toughest project I had worked on. I briefly explained an SOP I had done.

I was asked a puzzle first.
There is an m x n grid. You can make two types of moves : right and down. How many ways are there to go from (0,0) to (m-1,n-1)?
You need to make total m-1 down and n-1 right moves. This is a simple PnC question. You need to choose m-1 objects of one kind and n-1 objects of another kind from total m+n-1 objects. I caught the essential idea but got a bit confused and thus needed some time to arrive at the solution - (m+n-1)C(m-1) or (m+n-1)C(n-1). the interviewer was patient. But I was thinking out loud all the time. Even when I was confused, I was thinking out loud.

After this I was asked few coding questions which I found easy.
1st question : This was an adhoc arrays problem. I do not remember the question but it was easy and involved a hashmap approach. However, I gave brute force approach as well. He asked me time complexities of the approaches.

2nd question : What is a BST? He was making sure I remember stuff. He asked about properties also. Basic stuff. Then he asked me to write a code to check if a given binary tree is a BST. This was clearly based on the property that inorder traversal should be a non decreasing sequence. I clarified if I can assume unique nodes in the tree, he said yes. It was a pretty straight forward question.

I was asked OOP and OS questions after this. I am writing the topics as much as I remember

OS : threads, processes, Memory management algos (pretty much all core concepts)
OOP : Runtime Polymorphism in C++ (refer to GFG interview experiences, people have been asked this stuff before. I was asked pretty much the same stuff written in GFG experiences)
OOP in C++ was asked a lot. I would advise you to read up on it.

I would advise you to brush up on OOP and OS. I was asked quite a lot of thoretical questions, almost half of my interview was based on theory.

Tips :
1. For DSA questions, always try to give brute force solution and go on optimizing it progressively. Give time complexity of your solutions.
2. I was asked OS because I had already done the course. If your interview is in the odd semester, they probably won't ask you OS since you're still learning it.

Important Topics and Subtopics to Remember

DSA(trees, arrays most imp), OOP, OS

Sources of Preparation

1. GFG adobe archives - this is really very helpful, they do ask many repeated/similar questions to this.
2. Reading interview experiences on GFG also helped me a lot.
3. Practice on Leetcode, InterviewBit etc.(I am pretty sure others have mentioned these)

Amazon India

WFH

IT

Stipend Offered: 60,000 per month

SDE Intern

Recruitment Procedure

Round 1: Online Assessment - All public resources (except private repos and sites with login allowed)

Part 1 : Code Debug - 20 minutes, 7 Questions, logically correct with one minor error. Allowed debuggers but didn't need them. Very short (under 15 lines) and simple programs with 1 line needing a fix.

Part 2: Coding Round - 70 minutes, 2 Questions
(https://leetcode.com/problems/consecutive-numbers-sum/)
Solved easily using basic number theory and Arithmetic Progression knowledge.
(https://codeofgeeks.com/choose-a-flask/)
Did optimized brute-force on all flasks leveraging sorted-ness of certain variables. Passed half test cases. Adding early breaks and returns whenever we already observe a flask wastes more than current minimum. Forgot to return -1 when no solution so passed 10/12 test cases.

Part 3: Aptitude - 35 minutes - Mental Ability questions on Pattern predictions, Assertion Reasoning, Inferring conclusions from real-world-like scenarios, Verifying if a given statement is a solution of certain constraints.

Part 4: Work Style Assessment Questions - For multiple Questions needed to select something describing your attitude toward the situation (4 choices). Honestly attempted all which suited me best

Round 2 : Technical Interview - 60 minutes

Was only asked 1 question. Extension of (https://leetcode.com/problems/number-of-islands/) where instead of 1, there were positive integers denoting heights of that coordinate. Needed to find K islands of Average terrain height more than a threshold height H.

Used DFS to find connected components, DFS returned the sum of all height of coordinate it visited. Used function parameter by reference for finding count of points inside island boundary.

After finding first K connected components with avg(h) > H, returned the vector.

Was later asked to modify this to NOT break when first K found but to find all and return K highest islands. I sorted the original list for this.

Was asked questions on Time Complexity of both versions of algorithm, when worst case would be seen (Num Islands = n/2 if we have n*1 matrix of coordinates)
I tried removing sort in favor of some other method but concluded it would have the same time complexity.

Described each part of solution with examples before writing code. While writing code also I wrote loads of comments (habitual).

Important Topics and Subtopics to Remember

DSA, Basic Arithmetic and Number theory was sufficient. Knowledge on Graphs, Dynamic Programming, greedy algorithms, are important.

Sources of Preparation

No extra preparation needed for Part 1,3,4 for me. For Coding Test, solve as many questions on leetcode, hackerrank etc. Resources like Geeksforgeeks also help in general.

Additional comments

Basic Mental Ability knowledge and ability to debug simple programs was sufficient for me.

Amazon India

Bengaluru

IT

SDE Intern

Stipend Offered: 60,000 per month

Recruitment Procedure

Coding Test: There were total four sections. The first was basic debugging questions to be done within 30 min, the second one was coding questions out of which two questions were asked one was easy-medium level the other was medium. The third section consisted of a few HR type questions and the last section was logic based questions. The test was of a total of 2.5 hrs.

Interview: The interviewer asked me to introduce myself in a minute and then jumped to the questions. The question was to find the element position in a rotated sorted array.Solution: GeeksforGeeks. I was able to come with an efficient solution. He gave me a few testcases and asked m to dry run the code on those testcases. It went on for about 50 minutes where he made me optimize my code to the limit. He asked me the time complexity and space complexity and asked if I had a few questions.

A total of three people were selected after the second round. Overall the experience was good and the interviewer was really friendly.

Important Topics and Subtopics to Remember

DSA, most important, OOP although I wasnt asked any questions on it but its important to know the concepts for an electronics student

Sources of Preparation

Leetcode (300 questions solved), Interviewbit, GeeksforGeeks, Youtube videos explanations (Follow youtubers like LoveBabber, Codenation)

Additional comments

For me no other knowledge was tested upon

Amazon India

IT

SDE

Stipend Offered: 60,000 per month

Recruitment Procedure

Round 1: Coding Round
Round 2: Technical Interview

Round 1- There were basically 4 sections in this - Code debugging, Logical Reasoning, 2 coding questions and Behavioral questions.

Code debugging was pretty easy and there were no tricky questions here. Logical Reasoning had some easy questions and some medium level questions. Coding round had a tree question and a question based on the implementation of LRU cache. Both the questions had to be done within 90 minutes and were of medium difficulty. The behavioural section had several leadership and situation based questions.

After this round, around 12 students were shortlisted.

Round 2 - The technical interview began with the two interviewers introducing themselves followed by my introduction. They were very polite and helpful throughout the interview. I was asked to speak about my favourite project since I had 3 projects all in ML/DL domain. I explained the project in detail for about 20 minutes. This was followed by them asking me a tree question of medium difficulty which had to be coded on an online editor. They asked me many intricate details like pointers, how int pointers are stored in memory, how many ways are there to pass by reference in C++, etc. Some questions were quite conceptual. My interview lasted for about an hour. Then they asked me if I had any questions and I asked some questions related to the company and work. Confidence is the main key apart from having thorough understanding of the subjects.

After this round, 3 students were selected. I was lucky to be one :).

Important Topics and Subtopics to Remember

DSA - Trees, Linkedlist, DP, Graph

Sources of Preparation

Interviewbit, Geeksforgeeks

Additional comments

DSA is the most important thing to study for internships. Having projects is good but not sufficient. Start as early as you can - try giving Codechef, Codeforces contests as this helps with speed and accuracy. For the sole preparation of internship/placement, Leetcode/interviewbit are best and also refer GFG for past interview experiences and questions.

Also be very confident in any answer you give to the interviewer. I realised this after failing in two interviews.

Arcesium India Pvt. Ltd.

WFH

IT

Stipend Offered: 1,00,000 per month

Software Developer Intern

Recruitment Procedure

Round 1: Online Coding test.

This was held on the Hackerrank platform. It was 80 minutes round. It had 3 sections. The first section was an aptitude test. It had 15 questions from topics like Time and Work, Simple and Compound Interest, etc. The second section was a technical MCQ where we had questions about the output of codes, basic DBMS, and OOPs. The final section consisted of two coding questions. The first question was from Binary Search on answers. The second question was a moderate level dynamic programming question.

13 students were selected for the second round.

Round 2: Technical Interview 1

The interviewer asked me to introduce myself. After a brief introduction, we went straight to the problems.

Problem 1: https://www.geeksforgeeks.org/find-repetitive-element-1-n-1/
The interviewer wanted an O(1) space solution.

Problem 2: https://leetcode.com/problems/sliding-window-maximum/

Round 3: Technical Interview 2

This round again started with the interviewer asking me to introduce myself. Then we moved ahead to the problem.

I was given a string. I had to output all possible strings which could be made out of the given string in lexicographical order. Then the interviewer asked me to code it.

I was able to solve the problem in around 20 minutes. Then we had a detailed discussion about my project and he asked me various questions related to the database.

Round 4: Technical Interview 3

This round focused on system design. The first design problem was to implement a timer. The timer had

to take tasks from a user and then do the task every 24 hours.

The second problem was to design paint. (Kind of MS Paint)

Round 5: HR

This was a typical HR round. I was asked questions about my project, POR, where I see myself 5 years down the lane.

All the interviewers were very helpful. They did assist me in places I was stuck. They wanted to know my thought process clearly and I made sure I did think out loud. Also, I was asked to code all the problems. All the interviewers asked me if I had any questions for them at the end of the interview.

Important Topics and Subtopics to Remember

All major algorithms and data structures with details of implementation. OOP and DBMS was also asked so it's important to revise their concepts thoroughly. One should also prepare system design.

Sources of Preparation

For DSA, one can refer to Geeks for Geeks and Interview BIT. One can also take up courses on Udemy and Coursera.
For DBMS and OOPs, our university courses are pretty good. If one just revises the slides, they'll be good to go.

Cashgrail Pvt. Ltd.

WFH

Product Management
APM Intern

Stipend Offered: 40000 per month

Recruitment Procedure

1. Upraised test and training program: Aptitude test consisting of quantitative, language and situational tests
2. HR round: Basic questions checking if you are a good fit for the company
3. Product management interview: Product case solving
4. Behavioral interview: Standard behavioral questions such as about yourself, motivation etc.

Important Topics and Subtopics to Remember

Customer segmentation, market profiling, basic design and developement protocols

Sources of Preparation

Upraised material, stellar blogs, various google searches

Cisco Systems India Pvt. Ltd.

WFH

IT

Stipend Offered: 70,000 per month

Software Engineer – Network/Embedded/Application Development

Recruitment Procedure

Round 1: Coding + MCQ (60 mins)

There were a total of 2 questions in the coding section, and 15 MCQs.

The first coding question was to find out if it's possible to cover a 1-9 valued 3x3 integer matrix configuration to another by using an operation - the allowed operation was to swap two adjacent elements if their sum is a prime number. (https://www.codechef.com/problems/H1)
I was unable to solve even a single test case, but I still managed to clear the round, probably because of the weightage of the MCQs.

The second coding question was a relatively simpler one, asking to count the number of x letter words (no overlapping) in an NxM scrabble grid. (Similar to https://www.geeksforgeeks.org/search-a-word-in-a-2d-grid-of-characters/)
I used simple brute force and the solution was accepted.

The MCQ's were based on statistics, operating systems, networking, DSA, DBMS and OOP. I managed to attempt 14/15. I'm not sure how many were correct, but I'm guessing it should be close to all attempted because I could solve only one coding question.

The catch in the coding round was that only JAVA, C, and PYTHON were allowed. No C++, so make sure you're proficient in at least one other language.

Round 2: Technical Interview (40 mins)

The interviewer asked me general questions about my resume (5 mins). He then asked me which data structure I 'liked'. I said Linked Lists. He asked me to reverse a linked list recursively and iteratively. He asked me to code it out on a collaborative IDE.
He then asked me a question based on a Binary Tree - to print out all the leaf node values IF they are a left child of their parent. I had to code this one out too.
Lastly he asked me about a heap, how it is implemented abstractly (as a tree) and its implementation in code (using arrays). He asked me what methods/functions will go inside the class and I said parent, leftChild, rightChild, heapifyUp, heapifyDown, insert, getMax. He didn't ask for code for this question.
The key thing here was that the interviewer started the first question by asking me what I liked. I was able to begin with a question I was confident in, which helped boost confidence and sway the interview in my favour.

Round 3: Managerial Interview (20 mins)

The interviewer asked me about what my favourite language is- I said C++. He asked me to define virtual functions. Then he asked me if I had done OS or Networking yet. I said I was doing OS, but Networking is next semester. He asked me the difference between a process and a thread and I told him. He then looked at my resume and saw that I'm a react developer- so he asked me the difference between Reactjs and Angularjs. He then asked me a few questions about heap sort- implementation, runtime complexity, and how it's computed.
Again, here, being able to control the flow of the interview helps a lot. Be sure to be confident in what you claim to 'like'.

Round 4: Executive Interview (60+ mins)

This was a very intensive round. The interviewer went through my entire resume and grilled me about every single thing I had mentioned so be sure to be ABSOLUTELY thorough with your resume. He asked me about my projects, and asked me to share my screen to show him a working demo if I had a deployed project. I think I earned brownie points there, because I had a project up and running on casecade.in.
He then asked me about my Coursera Courses- AWS, ML, etc. So put these on your resume only if you can justify them.
Then he started asking me about my courses in college and started asking questions about each- Networking, DSA, DBMS, OS. Since Cisco is core computer engineering, be thorough with these concepts. He was helpful since I hadn't really done OS and Networking formally yet- he expected me to try to build answers from intuition and from what I know. I think I met his expectations just by thinking out loud and trying to explain to him my line of thought. A lot of what he had said sounded absolutely foreign to me, but I was able to build up on his hints.
Lastly he asked me what my favourite Data Structure was, and I said Graphs. He asked me how I would represent a world map in a graph. I gave him a high level overview, nothing too solid.

Round 5: HR round (20 mins)

This mostly felt like a formality. I think the HR was trying to determine if I was actually willing to work for a systems company like Cisco. He asked me if I knew about the job profile and what it entailed, and I said I'd be willing to learn. He asked me after looking at my resume if I wanted to do an MS/ME. I said I wouldn't want to. Then he completed formalities like asking me if I knew the stipend, and asking for location preferences.

Important Topics and Subtopics to Remember

Core systems concepts from OS, Networking, etc., while not taught by the time one sits for internships, are obviously a bonus. Hence go through some basics if possible. They seem to give a huge weightage to Data Structures.

Sources of Preparation

Watch a DBMS, and Networking crash course on YouTube before the interviews if you can. Go through GFG and look at previously asked questions in Cisco interviews. They usually tend to repeat.

Additional comments

The interviewers paid a decent amount of attention to the things I had written in my resume. If you're not confident of a project or haven't contributed enough to justify it, I would advise against putting it on the resume lest you should fumble if they ask you about it. Besides this, be sure to be thorough with some prepared questions like favourite data structure, language, etc. because that will put the reins of the interview in your hand.

Cisco Systems India Pvt. Ltd.

WFH

IT

Stipend Offered: 70,000 per month

Software Engineer – Network/Embedded/Application Development

Recruitment Procedure

Round 0 : Aptitude + Coding Test

-> There were 15 questions on aptitude and reasoning. After that there were 2 coding questions one was on Dynamic Programming and other was on Greedy Algorithms. The main issue with coding questions was that only C/Java/Python was allowed. C++ wasn't allowed so be prepared for it. I could only solve one of them as I had to code in C but still got selected for the next round. This round was combined for both Hyderabad and Goa Campus. Overall around 60-65 people were selected from both campuses.

Round 1 : Technical Interview

-> The interviewer was very friendly and started by asking 'Tell me about yourself'. Research and think about this question as this will be asked in the beginning of every interview. Then he proceeded to ask questions on DBMS but these were very simple and didn't require very in-depth knowledge. Example - Explain diff types of DBMS. Then we had a lengthy discussion of around 15 mins about 4 pillars of OOP, its advantages and why is it a better paradigm than procedural programming like C/C++. Then he asked a simple question on DSA which could be solved using clever array manipulation. In the end, he asked me to find and rectify errors in a C program. I found this very difficult and despite the interviewer giving me hints, I couldn't find the error that he wanted me to find but in the process, I found another that he didn't think of so he was overall happy. Turns out there was a logical error in the code related to function scoping rules in C. Around 35-40 cleared this round.

Round 2 : Manager Interview

-> The interviewer was even more friendly than before and apologized for keeping me waiting. After the usual tell me about yourself, he started asking questions based on my Resume. He asked me about my PS-1 project that I did in CEERI and the technical as well as other problems we faced and how did we solve them. This discussion went on for about 25 mins. Then he asked me an open-ended question on how I would go about designing an intranet service for all Campuses so that we can find information like academic records of students. He asked me about how will I protect the servers in case of failures, how will backup mechanisms work? Then he asked me if I had any questions. Always ask the interviewer some questions as this shows that you are interested.

Round 3 : Executive Round

-> This round was a mixture of everything - Technical, Managerial and HR. This was also the lengthiest round lasting more than 70 mins. We had some issues about connection dropping which further increased the duration of interview. The interviewer was one of the executives of Bengaluru branch. After initial small talk, he went through my resume and asked questions about projects. I gave almost same answers as the previous rounds. After that, he asked about my favorite language to which I replied C++. Then he asked some questions about C++ and told me to compare it to Java and give differences. Then

he asked about how can we set nth bit of an integer (ANS - OR with 1 left shifted n times). After technical questions, he asked HR questions like my hobbies, strengths, weaknesses, where do I see myself in 5 years etc. In the end we had a discussion on the workings of Cisco, current and future prospects, what my expectations were and what would I have to do as an intern if I got selected.

Round 4 : HR Round
-> This was a very short round which lasted around 10 mins and was mostly informative. I was asked about my city of preference and was given details about CTC and some perks.

Overall I was very happy but the process was very exhausting as all the interview rounds were on the same day. I got results on the same night and 9 students including me were selected from Goa Campus.

Important Topics and Subtopics to Remember

DSA(obviously), OOP and DBMS basics (for technical interviews) as well as communication skills. Be prepared to be asked anything from your resume so take care while filling it.

Sources of Preparation

Focus on practicing every type of data structures used as well as algorithms. DSA will be required in every company interview and it can only be mastered by practicing daily. For OOP and DBMS, campus courses are enough. I also recommend checking GeeksforGeeks archives about the company for which you are interviewing. They help a lot and contain all the recent questions asked in other colleges.

Cisco Systems India Pvt. Ltd.

WFH

IT

Stipend Offered: 70,000 per month

Software Engineer – Network/Embedded/Application Development

Recruitment Procedure

* Round 1: Online Test
It had 15 MCQs and 2 coding questions to be completed in 1 hour.

MCQs: Questions were asked from OOP (in Java), general C programming, Operating Systems, DSA, DBMS and Computer Networks, and there were some mathematical ability questions as well. The level of difficulty was between easy to medium.

Programming Questions: Only 3 programming languages were allowed for writing the codes: C, Java and Python. One question was from Dynamic Programming and the other involved the usage of Graph algorithms.

* Round 2: Technical Interview
The interviews were conducted in 4 further rounds. All conducted in a day's time.

Technical Interview Round-1:
Q1. Tell me about yourself.
Q2. What all courses have you covered till now?
Q3. Explain all the data structures that you know, their applications as well as their time complexities.
Q4. Explain the algorithm to detect whether a string is a palindrome or not. Here, the interviewer expected me to use some data structure and solve. I used stack to solve the question.
Q4. Explain ACID properties in a database.
Q5. Explain the difference between an object-oriented language and a procedural language.

This round went for about an hour.

Technical Interview Round-2:
Q1. Tell me about yourself.
Q2. The interviewer asked me several questions about my PS project. I was an Augmented Reality developer in my Practice School-I. So, he was interested to know what this technology is all about and how the AR-based apps were created.
Q4. Difference between frontend and backend in an application.
Q5. What if you are given a choice to do a frontend task or a backend task, what will you choose and why?
Q6. In C programming, what is Structure Padding? Here, I never heard of this term before. So, I honestly

told him about it, and then he further asked me a C-programming question, which was as follows: -
Q7. How much memory will be allocated to a struct which contains an int variable and a char variable? To which my answer was that it must be minimum of 5 bytes (4+1), after which he explained to me what structure padding actually is.
Q8. Some HR questions

This round went for 45 minutes. A word of guidance here: Just be honest if you don't know the answer of any question. Ask for some hints and do tell the interviewer what ideas are you having.

Technical Round-3 (It was with an executive director)

It was an HR + Technical Round. He first introduced himself, and then asked me to introduce myself. He then went through my resume and asked me some questions from my project. Following which, I was asked some HR questions, like my strengths and weaknesses, some situational questions, and where do I see myself 5 years from there. He then asked me my hobbies. Overall, it was a fun round and enjoyed interacting with the interviewer. This round went for 45 minutes again

Interview Round-4 (It was again an HR round)

The interviewer asked me about what all I learnt about the working of Cisco from my previous rounds of interview, and which all things I liked about the company. After which, she explained to me the stipend details and asked me the preference of Campuses (Bengaluru, Chennai and Pune). This went for about 20 minutes only.

One more thing I would like to add here. At the end of each round of interview, the interviewer asks if you have any question for them. Here, you all need to do some homework, get to know about what the company does, their current projects (if any), their way of working, etc. Attending Pre-Placement talks and listening to them with utmost attention will definitely help you in such situations.

Important Topics and Subtopics to Remember

C-Programming, OOP, DSA, DBMS, Operating Systems, Computer Networks, Dynamic Programming

Sources of Preparation

DSA and Dynamic Programming - Practice questions from GeeksforGeeks and/or Leetcode
Rest are CDCs and the lecture materials are sufficient.

Additional comments

Just have your basics in the above mentioned CDCs, very strong. It is not just for Cisco, but for every company. Practice regularly for DSA and Dynamic Programming.

Cisco Systems India Pvt. Ltd.

WFH

IT

Stipend Offered: 70,000 per month

Software Engineer – Network/Embedded/Application Development

Recruitment Procedure

Round 1: Coding + MCQ (60 mins)

There were a total of 2 questions in the coding section, and 15 MCQs. The MCQ's were based on statistics, operating systems, networking, DSA, DBMS and OOP and a basic question on active noise cancellation which was part of Electronics topic. The Coding question had a simple BFS question and a simple 2D DP/grid question. The only problem was only C, Java and Python were allowed. I used C.

Round 2: Technical Interview (40 mins)

It started with interviewer asking about stuff from my resume like my skills and the projects I did. There were two coding questions which I had to code and explain my approach. One question was from bit manipulation and other was DFS. Make sure to explain each and every step you were coding.

Round 3: Managerial Interview (20 mins)

This round was pretty much about me pitching my skills and projects to the interviewer. The interviewer tried to explore my skills and interests and this whole interview revolved around the projects I did. I explained the overview and details of my projects which were Machine/Deep Learning projects.

Round 4: Executive Interview (60+ mins)

This round was also resume based. Moreover I was asked some math puzzles which I don't exactly remember. There were some questions related to how I would handle certain practical situations which were aimed at testing my real life problem solving skills. Pretty basic DSA questions were also asked.

Round 5: HR round (20 mins)

This was basically a formality. I was asked about my interview experience, location preference, plans about my future and was told about basic stuff about CISCO, my stipend etc.

Important Topics and Subtopics to Remember

DSA, DBMS, OOP are very important. Basic to intermediate knowledge of statistics, OS and Networks is required.

Sources of Preparation

GeekForGeeks and InterviewBit were sufficient for me. Some of my friends did LeetCode. The only important thing is stick to 1 or 2 sources of preparation and do them thoroughly.

Cisco Systems India Pvt. Ltd.

WFH

IT

Stipend Offered: 70,000 per month

Software Engineer – Network/Embedded/Application Development

Recruitment Procedure

Coding Round (2 DSA questions and around 10 mcq's on aptitude, computer science)
Technical round 1 : OOP questions : about static keyword, inheritance, Difference between C++ and Java
DBMS : primary key and difference between primary key and constant
DSA : there is 3 slots , 1 hour each , where some people are playing games and you are backend engineer .Write a module that will receive score and name of each player and print top 3 players of each hour .

Tell different data structures which can store name of different people and can tell if that name has been told before as fast as possible .

other : what is difference between 64 bit system and 32 bit system

Important Topics and Subtopics to Remember

Solve DSA questions. Know Basics of OOP,DBMS . See gfg archives of the companies (google gfg "company name" archives).

Sources of Preparation

1.Interview Bit 2.Leetcode 3.Codeforces 4.CodeChef 5.Gfg notes/articles on OOP and DBMS . 5. Few you tube channels like : back to back swe , Tushar Roy , Gaurav Sen (for system design).

Note interview bit or Leetcode is must even if you have done competitive coding . And basics of OOP,DBMS and little idea of system design is also necessary.

Additional comments

Be confident . Don't take any pressure or stress .Always explain your thinking and answer . Do projects (two to three projects (including PS-1)) . Having good cgpa sometimes helps in my opinion (around 8.5 was sufficient this year) but even if you have less CGPA (around 7 at least) don't worry .

Don't speak less but don't exaggerate also .

Cohesity

WFH

IT

Intern

Stipend Offered: 90,000 per month

Recruitment Procedure

Round 1: Coding Test
Two questions were asked in this round. They were moderately difficult.

Round 2: Technical Interview 1
I was the only person who cleared the coding test so my interview was pretty chill. They asked me some questions from OOP and 2 questions about trees.

Round 3: Technical Interview 2
Again some DSA questions were asked. They were related to graphs. Other than that they also asked me about my projects. They mostly asked me how I handled the data in my project.

Important Topics and Subtopics to Remember

DSA, OOP and be very thoroughly prepared to be grilled about your projects if you've written any.

Sources of Preparation

I had done the DSA course offered on campus along with all the other CS CDCs. I also completed interviewbit and went through questions on gfg. Use gfg to your advantage. It has great resources for topic wise and company wise questions. Also read the interview experiences on gfg.

Additional comments

Even if you can't answer something in the interview, don't panic. He or she is not your enemy and they understand that you are nervous. Ask them for a little help if you cannot understand something.

DE Shaw India

WFH

IT

Stipend Offered: 1,50,000 per month

Software Developer Intern

Recruitment Procedure

Round 1 : Technical (1.5 hrs)
1 medium dsa question (heaps)
1 easy dsa question (implementation)
5-10 min discussion on project
10-15 min discussion on OOP and related concepts
5-10 mins on other concepts of CS like memory management and some c++ fundamentals
Round 2: Technical (1.25 hrs)
1 hard dsa question
2 med dsa question
2 easy dsa question
[variety of topics]

Only dsa round

Round 3 : Technical (Longest - 2hrs)
1 hard dsa question (trees)
1 med dsa question (dp)
25-30 mins discussion on OOP and its related concepts
10-15 min on project and dbms as it was related
15-20 on a design problem
10-15 mins on c++ fundamentals and memory management
They did give feedback at the end of this round when I asked for it

Important Topics and Subtopics to Remember

DSA + OOP + DBMS (almost entirely and was extensive in all 3 domains)

Sources of Preparation

OOP - Slides + gfg, DBMS - gfg, DSA - codeforces + codechef + Interview bit + gfg + Interview archives

Additional comments

Have a good understanding of your projects and /or internship and be cheerful(i think that helped me a lot)

DE Shaw India

WFH

IT

Stipend Offered: 1,50,000 per month

Software Developer Intern

Recruitment Procedure

Round 1 -Online coding test: questions on maps, breadth first search/recursion, greedy algorithms

Round 2-Technical Interview1: OOP (Major features and their implementation in C++/JAVA), DBMS(Transaction related questions), System Design(Browser History),DSA(DP, Stacks, Trees, Two pointers ,Binary Search)

Round 3-Technical Interview2: Important features/concepts in C/C++/JAVA, DSA(greedy algorithms , Priority queue, Maps, Graphs)

Important Topics and Subtopics to Remember

Data Structures and Algorithms, Object oriented Programming, Database Systems, Important features/concepts in C/C++/JAVA, Puzzles/Math

Sources of Preparation

Interviewbit website , GeeksForGeeks Website, CrackingTheCodingInterview Book

Additional comments

Be confident , Attitude and overall personality matters, Prepare questions you wish to ask the company(interviews are two-way channels) , Speak your mind and try to explain whatever you think(Do not sit thinking just in your mind) ,Go through info/news about the company and also about their recent interview archives available online

Dremio

WFH

IT

Stipend Offered: 1,00,000 per month

Software Development Engineer Intern

Recruitment Procedure

Round 0: Resume Shortlisting
We were asked to apply via a google form with our latest resume. 10-12 people were shortlisted out of an unknown number of participants.

Round 1: Technical Interview and coding round
The interviewer was nice and polite. After introducing himself, he asked me to give a short intro about myself. Once I was done with the introduction, he asked me for some details about a project on my resume. This entire part was 5-10 minutes long at best.
We then started off with the coding part of the round.
I was asked only one question, to design a data structure that would store the elements sorted by the time they were last accessed. I was asked to implement 4 operations, insertElement, deleteElement, setElement and getLastAccessedElement.
I was first asked about the approach I would take to design such a data structure. I gave him an approach that combines a Linked List and a Hash Table. An important thing to do in these cases (where you have to explain your approach) is to build up your solution from the most naive approach and keep optimising it, even if you know the most optimal answer; as this tells the interviewer that you understand what you are saying and are not simply saying something that you read off the web.
I was then asked to write down the programming code for my answer which I did by designing a class with the required functions. I was then asked about the worst-case runtime complexities for every function with and without the optimisations I had explained while explaining my approach.
Additionally, I was asked to think of any solutions for the same question using different data structures, other than the ones I had mentioned in my first solution. I was given a hint to think in terms of trees. Following his hint, I gave him two other approaches, one using an array and another using a binary search tree. I made sure that I explained the pros and cons of every approach and explained the runtime complexities for all 4 functions in both approaches.
The question given to me is popularly known as Least Recently Used Cache (LRU Cache) and can be found on all popular interview prep platforms (Geekfsforgeeks, Leetcode, InterviewBit etc.)
Things then switched from technical to non-technical as I was asked what I knew about the company and what I thought the role would be about. A few more questions about my programming language of choice etc and that's where the round ended.
The round lasted 45-50 minutes and I was asked to appear for the second round within 15 minutes of the first round getting over.

Round 2: Technical Interview and coding round
The interviewer in this case too, was very nice and polite. After the usual introduction formalities, he asked me for my perceptions about their company and clarified about the roles on offer. He asked me a

couple of questions about my academic interests and then went on to grill me about a particular project that was on my resume.
While talking about my interests, I had mentioned doing DSA, DBMS and OS courses in college. Hence the interviewer asked me a few questions on operating systems, especially focusing on the application of data structures in an operating system. I could answer all the questions using Linux as a running example.
For the final part of my interview, I was given a question to write code for. Given a resource allocation graph and a resource that the user wants to lock, I had to determine the lock can be granted. This might sound intimidating if you have not done OS but those who have done it will know that it just means one should look for any cycles in the given graph. I was able to code a BFS based solution to the problem and ensured that I explained and wrote appropriate comments in my code at every step of the way (an important thing to do by the way).
Once I was done writing, the interviewer examined the code and was satisfied with the answer following which we ended the interview. The round lasted exactly 40 minutes this time. If you want practice this question, try googling "Cycle detection in a graph".

Overall the interview procedure was really nice with nice people taking both the rounds. The company and PU worked really well to make the interview process seamless and problem-free. The way the interviewers spoke about their team, roles, culture and the company as a whole really makes one want to join them. We were given our results after 3 days and 4 students were selected finally.

Feel free to contact me if you need any help/clarifications.

Important Topics and Subtopics to Remember

Data Structures and Algorithms , Object Oriented Programming, Database Systems (although I wasn't asked anything, their job description emphasis heavily on these and hence you might be asked), Fundamentals about your programming language of choice (C++/Java)

Sources of Preparation

Leetcode, InterviewBit, Hackerrank, HackerEarth and Geeksforgeeks for DSA and interview preparation, class slides for OOP, YouTube for DataBase Systems, GeeksforGeeks and other miscellaneous websites for language fundamentals (try the MCQ quizzes in the practice section).

Additional comments

Before every round, do your research about the company and ensure you understand what the role requires you to do. Don't panic during interviews and simply keep thinking out loud to tell the interviewer what you know as they might want to help you too. If you don't know any answer, don't hesitate to accept it in front of them instead of trying to cover up. Most importantly, play it smartly and don't mention anything on your resume or in your interview that you are not sure about. In other words, mention any subject/skill only if you are sure that you can handle a grilling on that particular topic (like I mentioned OS

in my interview only because I was dead sure that I can handle most OS questions). Most importantly, get your fundamentals right for any subject you think they might ask you.

Dremio

WFH

IT

Stipend Offered: 1,00,000 per month

Software Development Engineer Intern

Recruitment Procedure

Round 1: Resume Shortlisting Round

Round 2: Personal Interview

This round was taken by a software engineer. It started with my general introduction. First question asked to me was a simple string question. Given a string, remove the repeated characters from the start and end, until we encounter a different character eg "aaaccdffgghjjj" becomes "accdffgghj".I gave a simple two pointer solution. Next question was to remove a given pattern from a string. First I proposed a brute force solution, checking for the pattern starting at every character of string(till length of string- length of pattern)th character. Later I proposed a more efficient solution using KMP. I was asked to code all of these problems as well. I coded in c++. We then discussed difference between strings in c++ and c. I was asked followup questions on pointers as well.The interviewer then I asked if I had any questions, I asked him how Apache Arrow works to optimize the search time in Databases as Dremio uses Apache Arrow(This I got to know while preparing for the background of the company). This was a 40 min interview and it ended here.

Round 3: Personal Interview

This round was taken by the Engineering Manager. It started with my general introduction. Then I was asked the 4 principles of OOP. Next were some short questions on my projects and we spent sometime discussing my course project as well(it was an Assignment in Information Retrieval course). Next I was asked to design a snake and ladder game. I coded it in python. The interviewer did not straight away ask me to design the game(core functionality not the GUI part), it was in an incremental fashion. I was first asked to name the classes which I would use in my game. To which I made a User, Snake, Ladder, Dice, Board and a Game(for the running of the game) class. Next I was asked to name the member variables of each of these classes. After the variables, I was asked to write the methods in the classes. Although I made some mistakes here and there, the interviewer kept pointing it out, although not directly. Next we spent around 10 minutes in designing the board class , which involved random initialization of snakes and ladders on the board and checking for various constrains between snakes and ladders. My solution was somewhat similar to https://workat.tech/machine-coding/editorial/how-to-design-snake-and-ladder-machine-coding-ehskk9c40x2w. Then the interviewer asked if I had any questions for him. I asked about the tools and technologies they used at Dremio.

Important Topics and Subtopics to Remember

DSA,OOP, OOP Design questions(designing the core functionality games like snake and ladder, minesweeper etc).

Sources of Preparation

Leetcode for DSA questions, GFG for theory reference.
Class Material, GFG for OOP concepts
Class Material(lab specifically) for SQL.
Class Material and GFG for DBMS concepts.

Additional comments

Although I was asked design based questions, my other friends were asked questions based on heaps, tries etc. So to be sure the entire DSA portion should be prepared well. I was asked to explain one of my course projects which I mentioned. It was designing a vector based document retrieval engine with spell check on queries, which was a part of Information retrieval course

Flipkart

WFH

IT

Stipend Offered: 50,000 per month

Software Development Engineer Intern

Recruitment Procedure

Round 1: Technical Interview 1
Around 14 people had qualified for the first technical interview round. The panel for my first round consisted of a couple of members, both were calm and nice. They had asked me two questions- Q1:You are given an array of integers and you need to arrange them in a way such the every Odd indexed element is greater than its adjacent even indexed elements(forming a wave like pattern).
Q2: You are given a string and you need to reorder the characters in a way such that no two adjacent elements are same. Both these questions are quite easy and the solutions can be found on geeks for geeks.

Round 2: Technical Interview 2
Around 7 people got qualified for this round. The questions asked in this round were relatively tougher from the previous round. Q1: Given an array arr[] and an integer K, the task is to find the maximise the sum of K elements in the Array by taking only corner elements.
https://www.geeksforgeeks.org/maximize-sum-of-k-elements-in-array-by-taking-only-corner-elements/
Q2: Given a list of words, find if any of the two words can be joined to form a palindrome.
https://www.geeksforgeeks.org/palindrome-pair-in-an-array-of-words-or-strings/
Q3: Consider a row of n coins of values v1 . . . vn , where n is even. We play a game against an opponent by alternating turns. In each turn, a player selects either the first or last coin from the row, removes it from the row permanently, and receives the value of the coin. Determine the maximum possible amount of money we can definitely win if we move first.
https://www.geeksforgeeks.org/optimal-strategy-for-a-game-dp-31/

Round 3: HM Interview
Around 5 people got qualified for this round. The interviewer was a high ranked senior manager. The interview immediately started off with him asking me to introduce myself, talk about all the projects that I've done, previous internships. He asked me to talk about something that I really liked and then asked me some of the challenges that I've faced. Then he asked me to explain the project that I did in my previous summer internship and if I faced any challenges doing them. He asked which subjects I liked to which I replied DSA and graphs, then he asked couple of questions from graphs like why do you like graphs and to give some real world use cases of graphs and graph algorithms. After this he gave me two puzzles, Q1: There are three boxes, one contains only apples, one contains only oranges, and one contains both apples and oranges. The boxes have been incorrectly labeled such that no label identifies the actual contents of the box it labels. Opening just one box, and without looking in the box, you take out one piece of fruit. By looking at the fruit, how can you immediately label all of the boxes correctly? Q2:Suppose you have a 3 liter jug and a 5 liter jug (this could also be in gallons). The jugs have no measurement lines on them either. How could you measure exactly 4 liter using only those jugs and as much extra water as you

need?(https://practice.geeksforgeeks.org/problems/the-3-5-litre-die-hard-water-puzzle)

4 people were given the final offer for the internship.

Important Topics and Subtopics to Remember

Mostly DSA questions were asked and nothing else but to be safe I'd say revise on OOP and DBMS as well. Some people were even asked about OS, kernel compilation etc

Sources of Preparation

Interviewbit and Leetcode are nice places to practice all the required topics.
https://www.interviewbit.com/
https://leetcode.com/
Additionally for more practice or even clarification on several topics and questions, geeks for geeks is a good place.
https://www.geeksforgeeks.org/
OOP and DBMS slides from the 2-2 courses(CS students) are also really helpful.
For DBMS, there's a really nice playlist on YouTube by Knowledge Gate.
https://www.youtube.com/playlist?list=PLmXKhU9FNesR1rSES7oLdJaNFgmuj0SYV

Additional comments

Be confident, don't beat around the bush too much. Make sure you have some knowledge at least about whatever you're saying and it's not as if you're making random guesses. Let the interviewer know that you're passionate about the offer and looking forward to contributing to the company. Stay calm at all times. Never interrupt the interviewer midway, let them make their point or explain something completely, only after they finish , ask any doubts or clarifications. Make sure that the interviewer clearly understands your thought process. Start off with a brute force approach or the most basic solutions and then as you proceed keep optimising it.

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Stipend Offered: 50,000 per month

Software Development Engineer Intern

Recruitment Procedure

Coding Round:
3 DSA Questions
1. Given an array of strings print all the strings which are not anagrams of a string before it's index. (Solved using unorderd_map of sorted char arrays)
2. Provided an array of numbers, merge(take sum) continuous numbers in the array to make the given array palindromic. (Has a few tricky edge cases)
3. You are given a string(String of a lottery winning ticket). You are provided an array of strings containing all strings of tickets possessed by people. To win the lottery, the string of ticket holder should be a contiguous substring of the winning string while ignoring smaller than or equal to k elements in it(winning string). Now some people can cheat by changing any 'a' to 'o' and 't' to 'l' and vice versa in their tickets or by removing any one character from their string. You had to print all the strings that could win with or without cheating.
The rounds were much easier compared to other companies

Round 1Technical Interview:
They asked me to introduce myself, and then went straight to DSA questions. I was asked two questions.
Q1
I had to convert a sorted array with negative and positive integers into a sorted array of squares.
https://www.geeksforgeeks.org/sort-array-converting-elements-squares/
Q2
The second question was to find out if I could colour a graph using 2 colours, where adjacent vertices couldn't have the same colour. They pointed out that my algorithm wouldn't work for a disconnected graph, so I corrected my algorithm to account for it.
https://www.geeksforgeeks.org/bipartite-graph/

Round 2 Technical Interview:
Two DSA questions
Q1
Given an array arr[] and an integer K, the task is to find the maximize the sum of K elements in the Array by taking only corner elements. I first gave the recursive answer which I converted to a dp problem O(n^2) and then I gave the approach using prefix and suffix arrays O(n).
Q2
The second question was to find if given an array of strings, find if concatenating two strings would give me a palindrome. I slowly went from brute force to the trie approach, covering the use of hash maps and tree maps
https://www.geeksforgeeks.org/palindrome-pair-in-an-array-of-words-or-strings/

Round 3 Technical+HR
First, he asked me to introduce myself, then went on to ask me about the courses that I had covered, then asked a few questions about OOP, covering inheritance, polymorphism and some basic java syntax.
Then he asked about any project that I had done and any difficulties that I had faced while implementing it. I went forward with describing my PS-1 project (Note: they do not want to know about how the project was done by the team, they want you to focus on the work you have done, and any difficulties you faced and how you solved them)
Then he asked about why I was interested in CS and joining the company, I replied by stating my interest in solving problems and about how satisfying it is to solve a hard problem. (He did not want answers with made-up reasons, just wanted a genuine reply)
Then he asked to describe some problem which kept me up for nights trying to figure out, I described a CodeChef long question which I found particularly challenging to solve.
At last, he gave me a simple puzzle.

(Note: Prepare a few questions to ask the interviewers)
I was 1 of four people that got selected for the profile.

Important Topics and Subtopics to Remember

1. DSA
Graphs (Questions are usually based on DFS or BFS, at the most Dijkstra's, but go through their applications thoroughly)
Dynamic Programming (Practice basic DP questions from gfg)
Two pointer method and its applications (Basic concept, But I was asked a question based on this in all the companies I sat for)
Sorting and Searching (Need a strong grasp, but you probably would be proficient in it already)
Basic data structures(Maps, Hash Tables, linked lists, heaps..)
2. OOP
Basic concepts(Encapsulation, Inheritance, Polymorphism)
Basic java syntax
Access modifiers
Diamond problem(Multiple inheritance)
3. Language concepts in c++ (The document provided by PU has all the topics)
DBMS is not asked generally

Sources of Preparation

Participation in CodeChef(long is pretty good for building up basics) and codeforces contests
Practice for Basic concepts: Interviewbit
Tried many DP questions from geeksforgeeks.
Prepared for OOP from geeksforgeeks and the course offered by our college is sufficient(Revise it if you have notes).
Practised the hard set from leetcode

Additional comments

Be prepared with an introduction for yourself.
Keep a few questions prepared to ask the interviewers, at least one for each round
Prepare a description of any project that you have been a part of, focusing on your contributions, problems you faced and how you solved them
Also think about why you like CS and would like to work in the field
Organise your thoughts and keep calm, get a good night's sleep before the interview

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IT

Stipend Offered: 50,000 per month

Software Development Engineer Intern

Recruitment Procedure

Coding Round:

1.Find all occurences of string in given text(case insensitive)
Sol: Ideally KMP, but brute force worked

2.Convert given array into palindromic subsequence by adding consecutive elements only
Sol: Keep adding the 2 left most and 2 right most elements till the ends are equal. Then move the pointers inside and repeat

3.Given a target string and a few candidate strings, find how many candidates are winners. A string is a winner if it can be considered a substring of the target string after ignoring k characters. Eg: 'abc' is a winner if target is 'adbecfgh' with k=2(we ignore d and e.)
Sol: I was only able to pass 18/21 TCs in this one, but the highest score I knew was 20/21.
I did something of a brute force approach which iterated over all candidates and searched for each candidate in the target string while mantaining a 'tolerated' variable. If that variable exceeded k then move on

14 people were selected from the coding round, where the lowest I could find was full in first 2 questions and 10/21 in the 3rd.

Technical Interview 1(45-50min)

Held on Smartmeet platform which had an IDE and question display in-built.

Q1: Given a number find the next biggest number with same digits.
Sol: A bit of a cliche question, but I fumbled around quite a bit in the beginning. But, I still kept saying what I was thinking and the interviewer was really helpful in assisting with the process as well. Took about 17 minutes for discussing the idea and a rough code(which wasn't actually compiled)

Q2: Given a 2D matrix with integers, find the minimum number of bombs reqd to reach the entire matrix. Whichever coordinates a bomb starts with, it takes out any adjacent elements with value just 1 less than it as well.

Eg : [[1,2,3],[9,2,4],[6,7,6]] Bombing 4 here would be the best option as it also takes out 3 then 2 then 1 in the top row.

Sol: I used BFS to mantain a maxReach array which said how many cells would be destroyed if we started at each coordinate. Discussed the idea and wrote the code for this.

I was also asked to do a Time complexity analysis of all of my solutions.

After this, he asked me if I had any questions and I asked him what sort of schedule do they have at work, both usually and in the current(covid) scenario.

7 students were selected for the second round of interviews.

Technical Interview 2(45-50min)

Faced some problems with Smartmeet this time, so a Google Doc was shared to write the code
Q1: Find max sum path in Binary Tree

Sol: Cliche GFG question again. Discussed and wrote the entire code

Then I was actually asked which topic do you want to be asked? Algo..DP..Graph..DS,etc . I said DS and he went with another binary tree problem

Q2: Given a binary tree, get the lowest and rightmost node.

Sol: Did level order traversal and returned the first value of the last level. Wrote the code

Asked time complexity again

Q3: Given sorted array of integers, find all occurences of an integer

Sol: We had exceeded the time so he just asked me the approach, and this was a pretty common problem so I almost told him the entire code with all the if conditions and everything while mentioning the approach itself.

Again, the interviewer was pretty helpful and constantly helped in taking care of all types of corner cases.

After this, he also asked me if I had any questions and I asked what sort of work would we have as interns.

5 students were selected for the last(HM) round

Hiring Manager(HM) round(30-40 mins)

This round started actually pretty late(9PM) and was a mix of various types of questions(none coding related though).

The interviewer started off with some project discussion.

He asked what courses I've done till now and then picked up OOP.

1.Why do we use OOP?
2.What is polymorphism?
3.Why do we use function overloading? Won't it just confuse the user?

Then he asked a bit about DBMS.

1.What are the different types of Join and explain the difference.
2.What happens on doing Left Join if the particular data entry doesn't exist in the right table.

Then he asked what sort of data structure do you like the most. I just said BST.
So, he asked what are any real-life uses of BST.

He also gave me a couple of puzzles.

1.Given 3 baskets with Apples, Oranges and both Apples and Oranges. They have ALL been labelled incorrectly. You can only pick a fruit out of 1 basket, how will you place all labels correctly.

2.Given a 5L and 3L jug, get 4L of water. Find 2 ways to get to it.

I had seen the first one before and did the second one as well, so then the last question he asked was

'Tell me a problem that didn't let you sleep for weeks and if/how you solved it'

I mentioned some projects and how we were stuck at a particular technical point, how we talked to professors and even some professionals in the field. He asked me when I made time to do work for such projects.

After all this was done, he gave me time to ask my questions and I asked the same things as before.

That was it and the interview ended at around 9:40PM.

4 people were finally selected.

Important Topics and Subtopics to Remember

Binary trees were really common for me.
Tries were asked to some people as well.
DBMS/OOP for the last rounds.

Sources of Preparation

Leetcode/Interviewbit for coding round
GFG is usually more than enough for the rest, but cover some puzzles/brain teasers from CtCI book and Interviewbit as well.

Flipkart

WFH

IT

Stipend Offered: 50,000 per month

Software Development Engineer Intern

Recruitment Procedure

Round 1: Coding Test

It was a 90 minutes long coding test on the aspiring minds platform (which was also used later for interviews) comprising of 3 coding questions with increasing difficulty.

Question 1: Basic string matching

We were given two Strings, 'text' and 'name', and we were required to count the number of instances of the string 'name' in 'text'. Matching was required to be done with case insensitiveness. The length of the strings were not given, so I first tried a basic brute force which worked for all test cases. However, more efficient solution is possible with rolling hash or KMP algorithms.

link:- https://www.geeksforgeeks.org/frequency-substring-string/

Question 2: Two Pointers

Given a list of numbers, merge adjacent elements to form the maximum length palindrome possible. The question was on similar grounds as the one given in the link. We just need to iterate from left and right simultaneously, and merge smaller of the two with the next element.

link:-
https://www.geeksforgeeks.org/find-minimum-number-of-merge-operations-to-make-an-array-palindrome/

Question 3: Advanced String Matching

Given a string "drawstring" and an array of strings "coupons", we needed to find how many coupons match as a substring with the drawstring with tolerance of 'k' characters. Also, there were few operations which could be done on the coupon strings to form a match including changing 'a' to 'o' , 't' to 'l' and vice versa, and also delete any one character in coupon string. I tried to use brute to generate strings with one

deleted character and then used recursion to check for a match incorporating all the conditions. I was able to pass 20/21 test cases.

14 students were selected for interviews. I think that test cases were weighted and selections were made based on the total number of test cases based rather than number of questions completely solved.

Round 2: Technical Interview 1 (DSA - 45 mins)

After a brief introduction, he jumped directly to problem solving questions.

Question 1: Prefix sum

This was just a warm-up question where I was just asked to find the sum of various subarrays in the given integer array. I answered it quickly with prefix sum, he seemed satisfied and did not ask to code.

link:-https://www.geeksforgeeks.org/prefix-sum-array-implementation-applications-competitive-programming/

Question 2: Two pointers

Generic question of finding the largest container which can be formed using the vertical lines on x-axis whose heights were defined in the given integer array. I was asked to write a function code for the same.

link:-https://www.geeksforgeeks.org/container-with-most-water/

Question 3: Array Manipulation

Given two arrays, one with alphabets and other with indices of those alphabets. I needed to arrange the alphabets according to the corresponding index in-place (without using any extra space). I defined a loop invariant for only moving forward when ith index is fixed using swap function. Then, he extended the same question to repeat the same process 'k' times that too without any extra space. Basically, he wanted me to use some technique so that I can store multiple indices at same location in array. As the values of indices will remain in range 1 to n, I stored indices as 0*n+idx, 1*n+idx, 2*n+idx and so on, and extracted them using %n operation. I was asked to write a pseudo code for the same.

The interviewer was very helpful and calm. He supported me throughout the interview and also gave some life advice in the end. Apart from the code, I was asked to explain the time complexity for all the questions.

8 students moved to the next round.

Round 3: Technical Interview 2 (DSA - 45 mins)

Similar to last interview, started with a brief introduction and then moved to problem solving.

Question 1: Game strategy

Given an integer array, I was allowed to pick the element from either the left or the right in one move and required to maximise my sum in given 'k' moves. On first sight, It looked like a dp problem and I explained him the solution defining the dp state based on three variables. The time complexity moved to O(n*n*k) and he asked me if I could do any better. On a closer look, the problem was a much simpler one where we just need to find the maximum sum of elements in a window of k elements which is either in beginning or end, or some part in beginning and some in end. I was able to solve it with just time complexity of O(k). I was asked to write the code.

link:-https://www.geeksforgeeks.org/maximize-sum-of-k-elements-in-array-by-taking-only-corner-elements/

Question 2: Palindrome pair in an array of words

The question was exactly the same as given in the link. I tried brute force for checking every pair but he wanted a better solution. After some struggle, I said to solve it using trie. He seemed satisfied but wanted to know complete procedure. I tried to explain but struggled with few parts where he helped me. Then, there was a detailed discussion on the time complexity for each of the steps. I was not asked to write the code for the question (maybe because of less time).

link:-https://www.geeksforgeeks.org/palindrome-pair-in-an-array-of-words-or-strings/

Interviewer was again very helpful throughout the interview and forced me to think in particular directions. He wanted to know details of whatever I was thinking.

5 students were selected for the last round.

Round 4: Hiring Manager Interview (scheduled for 30 mins but went on for 55 mins)

This round was taken by a senior developer in Flipkart and was a mix of HR round and the technical one. After a brief introduction, he asked me about my projects. He asked me to explain one of them in detail. Then, there were questions about challenges faced, shortcomings, problems in groups and other similar ones.

He asked me about the subjects which have been covered in college curriculum. I answered with DSA, DBMS, OOP and other basic sciences. He asked about topics covered in DBMS, to which I listed some common ones. Then. he asked me about the ACID properties of transactions in DBMS and how they were maintained.

He asked me about a favourite subject to which I replied DSA.Then, he asked me a kind of abstract question on linked list. He wanted me to think of ways to optimise the search and insert operations in a sorted linked list. I came up with various approaches of additional array with binary search, binary search tree. But he wanted me not to use as much additional memory as the linked list. So, I tried to device a solution based on indexing (as in DBMS with help of B trees). Then, there was a long discussion on the same and he gave various scenarios for me to work my solution on. This went on for around 40 mins after which he said that he had no further questions.

At the end of all the rounds, the interviewer asked if I had any questions for him. This was followed by a healthy and warm discussion about the company for around 15 mins and I got to know various details about the functioning, several departments, work done and challenges faced by them.

After all the interviews, 4 students were offered the internship role.

Important Topics and Subtopics to Remember

All major algorithms and data structures with details of implementation and time and space complexities.
Basic principles of Topics in OOP, DBMS and familiarity to all the jargons, so that you don't get completely blank at any point of anytime.
All about the projects listed in your resume.

Sources of Preparation

DSA: Competitive Coding Course on coding blocks, interviewbit, GeeksforGeeks (mainly, for archives and must do coding questions), codeforces, CodeChef and HackerEarth for practice
DBMS: Course offered in the institute, YouTube playlist on the channel KnowledgeGate, GeeksforGeeks (for revision and quizzes).
OOP: Course offered in the institute, GeeksforGeeks (for revision and quizzes).

Additional comments

Look for the internship archives for all the companies before attempting any of the rounds to get a clear idea about the format. Keep practicing by participating in various contests and competitions held online. Look for common puzzle questions to help with logic building and even they are sometimes asked in the same form in an interview or as MCQs in coding rounds.
Also, be prepared to answer anything related to what is written in your resume.

Goldman Sachs

WFH

IT

Stipend Offered: 75,000 per month

Software Engineer SI

Recruitment Procedure

Round 0 : Online Round
It was a comprehensive round with 5 sections and a duration of 135 minutes.

Section 1: Coding Questions (30 min)
Q1. Print all the pairs of consecutive distinct numbers which are repeated.
Example: Input : {1, 2, 3, 1, 2, 3}
Output : { [1,2] , [2,3] }
Q2. Given a binary tree, find the number of nodes which had even sum left subtree and odd sum right subtree. In input was given in terms of strings which we had to construct the binary tree, and then count the required nodes.

Section 2 : Aptitude Section (20 min)
It had 7 questions, mostly related to P&C, logarithms and solving 2,3,4 degree equations. The difficulty was of JEE standard.

Section 3 : CS Fundamentals (15 min)
It had 8 questions, almost all of them based on DSA. Some were to predict final state of stack, queue, etc and guess the code snippet to achieve the required task, those sort of questions.

Section 4 : Advanced Coding Question (45 min)
It had only 1 question, in which we were given a graph and we had to find the number of articulation points in the given graph.
Brute force approach, by removing each node and checking connectivity got full score in this one.

Section 5 : Subjective Questions (15 min)
This had 2 questions
1. Suppose you and your friend are doing an important project having some deadline. Then suddenly your friend left the project in the middle because of some unavoidable reasons. What you will do in that situation?
2. Mention one instance where you were highly motivated and excited for a project and you achieved exceptional results in it.
Around 23 people were shortlisted in this round.

Round 1 : Interview over Zoom and CodePair (Around 1 hr)
Firstly, he asked me one puzzle.
Puzzle Q. If there are two primes pi and pj such that pj-pi=2, then can we always say that pi+1 is divisible

by 6? He asked for a mathematical proof.
Then, he asked a coding question, asked me to code up the solution as well.
Coding Q. Find the first non-repeating character in the given string.
After this, he asked few follow up questions for this one.
Then, he asked me to compare merge sort and quick sort, advantages and disadvantages for each.
I was able to solve all the questions, with few hints from the interviewer. He seemed to be satisfied with my performance.

Round 2 : Interview over Zoom and CodePair (Around 45 min)
The interviewer started off by asking me two puzzles.
Puzzle1 : Given two ropes, when each one takes 1hr to burn, how to measure 45 minutes?
Puzzle2: Given 2 buckets of 3L and 5L, find a way to get 4L of water?
I solved both of them, but took a little more time than expected, but she was okay with me taking extra time.
Then, she asked two coding questions
Q. Given array of distinct elements of length n-1 where each element is between 1 and n, find the number which is missing.
I gave the optimal approach using O(n) time and O(1) space.
Q. Search for an element in a rotated array.
Since, we were running out of time, I explained her the approach and all the cases we need to deal with.

Round 3 : Interview over Zoom and CodePair (Around 1hr 15 min)
He started by asking few questions about my interests, hobbies and had a discussion about it.
Then, he asked a design question based on Load Balancing. I informed him that I was not aware of System Design. Then, he asked me to try and think about the general approach to solve it.
I wasn't able to give a satisfactory solution to it, so he moved on to next question.
Now, he gave a binary tree and said that one of the leaf nodes caught fire at t=0, then find the time required to burn the entire tree, given that after each second, fire propagates to its neighbour nodes.
I was able to explain it programmatically using BFS, and and get a mathematical formula using LCA.
He seemed impressed with my approach.
Then, he asked me, given an rooted tree, convert it into string format. After a small hint, I told him that we could convert it based on JSON format. Then, he asked me to code it up. I struggled a little with coding it up, but provided him with the top level algorithm which I wanted to use. He was okay with the approach.
The interview ended with me asking him few questions about company, work, etc.

Finally, 4 people including me got the offer from Goldman Sachs

Overall, the interview process was very good. In Goldman Sachs, a lot of emphasis is placed on DSA and puzzles when compared to other CS subjects like OOP, DBMS, OS, etc. For me, apart from one System Design question, all others were from DSA and puzzles.

Important Topics and Subtopics to Remember

Data Structures and Algorithms (very important)
Common Puzzles
System Design

Sources of Preparation

Geeksforgeeks (for interview experiences and puzzles)
Leetcode (For practicing coding questions)

Additional comments

Stay calm, and talk to the interviewer casually.

Goldman Sachs

WFH

IT

Stipend Offered: 75,000 per month

Software Engineer SI

Recruitment Procedure

Round 1 - Technical Interview:
He started by asking me to introduce myself and asked me to explain the projects on my resume entirely. Then he asked me general questions related to the field of my project. For eg, one of my projects was based on Automated Software Testing. So he asked me what all testing methods are available. And to elaborate on Unit testing and Smoke testing.
He then asked me some questions from DBMS, like about the types of join operations and what will happen on performing particular type of joins on not null constraint columns.
After this was a coding question, an array of words are given in a particular order. This does not follow the regular alphabetical order, you need to give the order of alphabets from which this order of words was decided. I did not need to code the entire solution, just had to explain my logic clearly while making use of a codeshare screen. My solution was based on Topological Sort.

Round 2 - Technical Interview:
Here too the interviewer started by asking me to introduce myself and explain my projects to him. So make sure you know the projects written on your resume very well.
He then gave me a mathematical statement and told me to come up with a formal proof for the statement. Prove the given statement: If we have a number x such that the number just before it and the number just after it, are both prime. Then prove that x is divisible by 6.
He then gave me 2 coding questions.
1. Find the first position of non repeating character in a string. Then he built on this question and said if you have a huge string and different machines, how will you solve it if parts of the string are given to different machines. He asked me to write down the code of a part of this solution. I used a hash map implementation.
2. Design a data structure for multiple window frames open on a desktop. Implement functions such that if you click on a part of a window it brings that particular window to the top. I was asked to write the entire code for this question.

Important Topics and Subtopics to Remember

DSA: Graphs, Dynamic Programming, Search Structures; DBMS

Sources of Preparation

Leetcode, Geeksforgeeks

Goldman Sachs

WFH

IT

Stipend Offered: 75,000 per month

Software Engineer SI

Recruitment Procedure

Round 1 : Online Test

There was a CGPA cutoff of 7.5 in order to appear for the online round. The online round was conducted on HackerRank and was 2 hours and 15 minutes long. It consisted of 5 sections, each with their own timer. They were :

1. A short coding section for which you had 25 minutes and consisted of 2 fairly easy coding questions. The first was, given an array of integers, you had to print all pairs of integers which occurred repeatedly in the array. In the second question, you were given a tree represented as a string, and you had to find the sum of all nodes in the tree whose one subtree had an even sum, and the other had an odd sum.

2.A long coding section for which you had 45 minutes. The question was to find the articulation points in a given graph.

3. An MCQ section consisting 8 of math/probability questions for which you had 25 minutes. This was, in my opinion, the toughest part of the round.

4. An MCQ section consisting of 8 CS related questions. They were mostly related to DSA and OOP.

5. An HR section in which you were asked two essay type questions and had to answer in 15 minutes. The questions I had were (paraphrased) :

(i) Mention an instance where your passion/enthusiasm for a project helped you achieve your goal.

(ii) You are doing a difficult class project in a group of 2 and you are not sure if you'll be able to meet the deadline. An unavoidable personal situation arises for your team-mate, because of which he can't help out on the project for a while. What would you do in this scenario?

The criterion for clearing the coding round was that you had to clear the cutoff for 3 out of these 5 sections (the cutoff as such wasn't explicitly mentioned). It was also mentioned that CGPA would be considered as a section. So clearing two of the sections on test and a CGPA cutoff would also be sufficient.

After this round, 23 people were shortlisted for the interview stage.

Round 2 : Technical Interview

The interview was conducted on Zoom, while the coding portion was done on CodePair. The interviewer started by asking me to introduce myself and mention some of my academic interests. I'd stated that I liked to prove things, so the first question he asked me was to prove that if you have two prime numbers which differ by 2, then the number in between them must be divisible by 6. I was able to answer this but I used a very long proof technique. He was happy with it but pointed out that I could have simply stated that in 3 consecutive numbers, 1 has to always be divisible by 3. For the DSA portion, the first question was, given a string, how would you find the first non-repeating character in it.

https://leetcode.com/problems/first-unique-character-in-a-string/

I gave an approach which tracked the indices of all the 128 ASCII characters and having a mechanism to track repeated occurrences. This only required one pass of the original string and one pass over the 128 sized array. He was pretty happy with this as I had avoided two passes of the string (which could become expensive for large strings) and didn't ask me to write the code. The follow-up to this question was, suppose you have a very large string, which is split across m machines because it can't be stored in it's entirety in the memory. Using the procedure from the previous question, how would you solve the same problem for this large string. The question was a bit open-ended and the discussion was driven mostly by my questions on what all can be assumed. He was happy with my approach and asked me to write some pseudo-code for the same. Then, he asked me to compare merge sort and quick sort. He also asked me about the complexity of binary insertion and whether binary insertion sort would be feasible for a linked list. He finished the interview by asking me if I had any questions for him.

The interviewer was very helpful and friendly. I had some connectivity issues during the beginning of the interview and he was okay with my switching off my camera because of this.

After the first round, around 12 people were selected for the second interview.

Round 3 : Technical Interview

Once again, the interviewer started off by asking me to introduce myself. I'd mentioned that I love sports, so we talked for a couple of minutes about the sports I play, watch etc. Then he went straight into DSA. The question was to reverse a linked list in groups of k.

https://leetcode.com/problems/reverse-nodes-in-k-group/

I explained how I would approach this problem first, and also asked him some questions about edge cases - like what to do if a group has less than k nodes (I was asked to reverse it, regardless). He asked me to write full code for this and also test it using a main function. I was able to do this without any problem and he seemed very impressed at the speed with which I was able to do it. This took around 25-30 minutes of the interview. He told me that he hadn't expected this part to get over this quickly. Then, for the rest of the interview (about 20 minutes), we had a discussion about serialisation and de-serialisation of an n-ary tree. He wasn't really looking for complete code here, just some ideas about how I would do it. The first couple of ideas I had were not feasible, which I realised and then explained my

mistakes to him. He seemed pretty happy with this and then gave me a hint to push me in the right direction. With the hint, I was able to present a working idea to him. He asked me to write some pseudo-code but stopped me in between, saying that he was convinced that it would work.

The interview once again finished with him asking me if I had any questions for him. I asked him a couple of questions about the summer intern programme at GS and we had a discussion on this for about 10 minutes.

I didn't have a 3rd interview or an HR interview, but I was selected nonetheless. A total of 4 students were selected for the internship.

Important Topics and Subtopics to Remember

Data Structures and Algorithms, Basic Mathematics, Probability Theory, Object Oriented Programming, Basic Logic Puzzles

Sources of Preparation

1) Data Structures & Algorithms

https://leetcode.com/
https://www.interviewbit.com/practice/

2) Revise Prob Stats course material for Probability Theory (Pre-Midsem)

3) Object Oriented Programming : https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/

4) Puzzles : https://www.geeksforgeeks.org/puzzles/

Additional comments

Make sure you're always making a conscious effort to explain your thought-process to the interviewer, rather than just presenting the final answer. In doing so, you're letting him know how you're approaching the problem and it also increases the chances of him pointing out any mistakes and helping you rectify it.

Google

WFH

Electronics
Hardware Engineer Intern

Stipend Offered: 90,000 per month

Recruitment Procedure

1) Job Application : Had to fill out basic educational details, work experience and projects along with attaching resume.

2) Resume Shortlisting : 3 students were shortlisted (for Electronics/HD)

3) Interview Preparation talk with HR and Google HW Engineer : A google meet was organised for all shortlisted candidates from many campuses across India. The HR manager and Senior Google Hardware Engineer walked us through the interview process and discussed about the expected professional expertise and relevant topics they would test us on.

4)Two technical interviews of 45 minutes each were conducted by Senior Hardware Engineers.

5) Interview 1 :
-Asked about VCO and PLL.
-Word problem on Overflow
-Programming Question : Solving queries on rotated arrays.
-Hold Time and setup time
-HR Questions

6) Interview 2:
-Discussion about projects and internship from Resume
-Programming Question: Dictionaries
-MUX Questions, Combinatorial Logic
-Registers
-Signals and Systems : Fourier transform Word problem

Important Topics and Subtopics to Remember

Digital Design
Analog Electronics Basics
Signals and Systems
VCO and PLL
Programming
Verilog

Sources of Preparation

Material by PU
Course Textbooks
Class slides and notes

Google

WFH

Electronics
Hardware Engineer Intern

Stipend Offered: 90,000 per month

Round 1: Resume Shortlisting. Done by Google. 3 people were shortlisted and the end.
Round 2: Technical Interviews.
Each interview was 45 minutes. They asked me for a basic introduction
Interview 1:
1. CMOS logic- Implement (A(B+C)(D+E))' using CMOS logic. Optimise for number of gates.
2. RC ckt+ buffer amplifier. I was asked to plot the voltage across the capacitor and the across the buffer amplifier. I was also asked what physical values i needed to take care of to make sure that the buffer amplifier worked as needed.(Ensuring saturation of the FET)
3. Mod-5 counter. I was asked the workflow of designing a Mod 5 counter. Choice of type of flipflop left to me.
4. Basic programming question. I was given an array and asked to print all the elements that were bigger than all their succeeding elements. Task was to be achieved inside a single loop. You could choose an language to program it.

Interview 2:
More theoretical questions were asked in this segment.
1. Implementing 128x1 mux using 2x1 muxs only.
2. I was asked about cache. Associativity of cache, levels of cache, Cache hits.
3. Although it was a technical interview, the interviewer asked a random HR question in the middle. "If you have to extract work from an unwilling party, how would you go about it?"
4. Programming question. It involved nested loops and shifting of elements of a certain criteria to the end of array.
5. Programming question. Mainly dealt with formatting of 2d arrays and associative arrays.

Important Topics and Subtopics to Remember

Digital Design was the most important. Verilog is generally asked as well if time permits.
Microprocessors and Interfacing- especially Module 9, which deals with general terms like Pipelining and cache.
Analog-i revised basic mosfet concepts and RLC ckts
Programming-mostly just handling arrays.

Sources of Preparation

Digital Design- Morris Mano and the questions at the back of each chapter. For timing circuits, the IC always provides another resource for solving and understanding timing violations and clock rates.

Microprocessors- The content given by Anupama Ma'am was more than sufficient.
Programming- Basic CP knowledge is adequate. I solved basic hackerrank questions to revise my syntax knowledge.

Additional comments

Communicate through the interview. They want to know whether you are accounting for all possible a given question may be interpreted. they want you to narrow down by asking them questions and knowingly won't provide you with all the details first hand.

Don't panic :)

Google

WFH

IT

Stipend Offered: 98000 per month

Software Engineer Intern

Coding Test: This generally involves two questions. Try to improve the complexity of your solution so more test cases are resolved. To improve your coding and implementation skills, Practising on LeetCode or InterviewBit (or any coding platform you are comfortable with) is must as problems are to be solved under a time constraint. Knowing classical algorithms and strategies can be very helpful while decoding the problem. Make sure you select a language you are comfortable with and know about the data structure implementations and methods e.g. maps in C++ STL.

Technical Interview Rounds: Depending on your application, you will have 2 or 3 technical rounds. Each of these rounds is of similar nature and are based on Data Structures and Algorithms. Each round may involve 1 or 2 questions. The interviews revolve around how you approach the problem, what data structure representation you choose and how you further optimise your algorithm.

Some of the most important topics to cover for interviews are:
Graphs: Make sure you understand the theory well. Important subtopics include DFS, BFS, Shortest Path Algorithms, Cycle detection.
Dynamic Programming: 1D Dp, 2 D Dp, Look at a variety of problems so that you can understand where and how to apply(https://www.geeksforgeeks.org/dynamic-programming/ has a list of such problems)
Sorting: Go through all important algorithms including quicksort, count sort and bucket sort.
Other important topics include 2-pointers, bit-manipulation, hashing, tries.

Tip during interview: Make sure you understand the question correctly and ask about any constraints or corner cases and how should you go about handling them. While thinking about the problem, make sure you constantly convey it to the interviewer so that he/she can understand your approach.

Important Topics and Subtopics to Remember

DSA (Important):
Graphs, Dynamic Programming, Sorting, 2 pointers, hashing , bit-manipulation

Sources of Preparation

Theory: https://www.geeksforgeeks.org/,
DSA slides,
MIT (intro to algo - helpful for graphs):
https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-006-introduction-to-algorithms-fall-2011/

Practice (Topic wise): https://www.interviewbit.com/courses/programming/

Practice (In general): https://leetcode.com/

Textbook: Introduction to Algorithms, by Thomas H. Cormen, Charles E. Leiserson, et al. (detailed theory)

Google

Bangalore/Hyderabad

IT

Stipend Offered: 98,000 per month

SWE

Recruitment Procedure

Round 1: Coding round

Criteria for selection: Everyone who applied was allowed to give the round.

What was the round: I was given 2 coding questions in total. One involved bitmasking while the other one was dynamic programming. The level was 1800-1900 on Codeforces.

Round 2: Interview Round

Criteria for Selection: Coding round score and resume shortlisting. Since I had a competitive coding profile, my recruiter told me that my Google Codejam and Kickstart performances were also looked at.

What was the round: I had 2 interviews back to back. Both involved dsa problems and some puzzle solving. Topics asked in this round were graph traversal, binary search and dynamic programming

Important Topics and Subtopics to Remember

DSA

Sources of Preparation

Coursework, Competitive coding websites like codechef and Codeforces, and some interview prep websites like InterviewBit and Leetcode

Additional comments

Try communicating all your thoughts tot he interviewer. Don't hold back. They want to know your approach and not just the final solution.
Ask doubts in the questions and be interactive.

Practice writing easily understandable codes and also make sure you type fast

Honeywell

WFH

Chemical Intern

Stipend Offered: 25,000 per month

Recruitment Procedure

Round 1: Technical and Aptitude Online Test
The aptitude section was easy and consisted questions like pattern recognition, compound interest ,problem on ages etc.
For technical questions , they were just basic chemical engineering questions like what does a catalyst do and questions on different types of reactors like PFR,CSTR,Batch etc
Thermo and KRD had the maximum weightage in Technical round.
For both apti and technical questions you can visit Indiabix.com

Round 2:Technical Interview
So in this ,they ask you to first introduce yourself and then in my case they asked me for my favorite subject to which i said fluid mechanics then they started asking questions from fluid only like darcy equation ,hagen poiseuille eq ,what is fluid mech ,types and characteristics of pumps,explain cavitation etc.
There may be questions from other subjects too like i was asked about dew point which comes under thermo but if they do ask from some other subject then it will probably be a simple question.
They may also ask about your projects so be ready to explain it to them.

Round 3:HR interview
This is comparatively easier than the technical interview,they'll ask you to give a intro then what all projects have you done , schooling and hobbies.
other than these regular questions i was asked about a condition in which i was not guided properly and somehow i performed and got the job done.
This round is actually the easiest of them all ,my advice is to be real and honest ,don't fake it and be confident about whatever is there on your resume.

Important Topics and Subtopics to Remember

Fluid Mechanics -Pressure drop in pipe,pumps ,valves
Thermodynamics-dew point ,dry bulb temp,wet bulb temp

KRD(may not be relevant in your case since usually the rounds are done at the beginning of 3-1 and not much is taught by then but in my case the recruitment process was in march so i had some questions from KRD in Technical test)

Sources of Preparation

I'd say the class notes/slides are more than sufficient.

Additional comments

to ace the online test just go through the basics of every CDC taught to you -definitions and small formulae etc

to clear the technical interview- have a good grip on concepts of any one subject of your choice while also knowing basics and definitions of other CDCs.
For example : suppose you have selected Fluid mech as your favorite but still you must know basics of heat transfer like what is Fourier's Law ,newton's law of cooling ,nusselt number etc

For HR interview- Be real and honest .

Honeywell

WFH

Mechanical/Design Intern

Stipend Offered: 25,000 per month

Recruitment Procedure

Round1 : Objective test
> All students having interest in core sector with a certain CGPA cut-off (8.5+ probably) were invited to this round.
> It had questions mainly related to analytical reasoning, aptitude, language and most technical questions were on Thermodynamics. There was no negative marking, it was an objective type test of 40 to 45 mins. duration.

Round2 : Technical interview
> 6 students were shortlisted based on the performance in the objective test.
> It was around 20-25 mins. duration.
> First, I was asked to introduce myself, and where do I see myself in five years from now.
> Then technical questions started coming up, I was asked about pressure vessel design (thickness formulae for thin cylindrical vessels), Poisson's ratio, Ideal gas law (limitations & compressibility factor), importance of baffles in Heat exchangers, significance of Prandtl no., Reynolds no., and head loss in pipes, about relative humidity and DBT & WBT (dry bulb temperature and wet bulb temperature)

Round3: HR interview
> Only 2 people were shortlisted for HR interview out of 6.
> It was also 20-25 mins. duration.
> Ma'am asked me about my schooling and background we also spoke about COVID situation in my city, then I was asked about my project in PS1 (at IGCAR), about my SOP and LOP. Then Ma'am asked me why I chose mechanical engineering and also why Science stream. Besides, I was also asked what kind of career I wished to have in mechanical sector.
> One of the questions, was also "What would you do if you aren't given a mentor and assigned a task to be accomplished by yourself, describe such a situation and how you dealt with it."
> They recruited only one person after the HR round for Summer Internship.

Important Topics and Subtopics to Remember

Thermodynamics (subtopics: mainly Air conditioning from Applied Thermodynamics, Ideal gas concepts), Basic Fluid mechanics, Pressure vessel design basics, Heat Transfer (subtopics: Non-dimensional numbers, Heat Exchanger), Mechanics of Solids basics.

Sources of Preparation

I prepared from lecture slides mostly, and the Cengel & Boles textbook of Applied Thermodynamics. You can also refer the Heat Tansfer course textbook for basics, fluid mechanics class slides, MOS basics from any source/class slides.

Additional comments

You should be polite throughout the interview. I would advise one to not bluff if you do not know something, rather politely convey so.

IBM

WFH

IT

Stipend Offered: 30,000 per month

Extreme Blue

Recruitment Procedure

Round 1: Cognitive ability assessment:
Series of few mini-games to be completed - based on mental math and logic.

Round 2: Hackerrank based coding round

Round 3: Technical interview
It was conducted as a panel interview by 3 panelists. The interviewers were very polite and helpful.
The interview began with introductions. I was then asked to name a field of IT which is revolutionary and a real-world example for the same.
Discussion about the projects I had done.
Various questions from various topics such as binary search trees, hashing, BFS, DFS, tree traversals, semaphores, deadlocks, race conditions and threads.

Important Topics and Subtopics to Remember

DSA, OOP, DBMS, OS, Networks

Sources of Preparation

Geeks for Geeks, college coursework & preparation bootcamp

IBM

WFH

IT

Stipend Offered: 30,000 per month

Extreme Blue Internship

Recruitment Procedure

Round1: Coding Round
Round2: Panel Interview,
Types of questions asked will depend on the panel. In my case three people were interviewing me.
First person asked small questions in DSA and DBMS.
Second interviewer asked me questions on projects I had done.
Third interviewer asked me general HR questions.
In the end I was asked if I had any questions for them.(Always ask questions)

Important Topics and Subtopics to Remember

Have command over atleast one language(C, C++, JAVA, Python)

Sources of Preparation

GFG, class notes(DSA, DBMS)

Additional comments

Thoroughly remember the details of projects you have done

Intuit

WFH

IT

Stipend Offered: 60,000 per month

Summer Intern

Recruitment Procedure

Round 1: coding round : this was hosted on hackerearth. Total marks was 200. The questions involved breadth first search(100), dynamic programming(50), string operations (use of custom comparator)(25) and math(25). One of the questions had expected output -1 even though it showed 1 in the question. This question was bfs and many people couldn't figure out the error.

Round 2: technical interview : This round was relatively chill. Interviewer asked me to explain any project that I did and I chose the one I was most comfortable and prepared and explained it. After this she moved on to some technical questions based on the project (REST APIs and oauth). After this she asked some networks questions which I didn't know fully but guessed some of them correctly. After this I was asked to code Fibonacci numbers with all the types of implementations and taking care of overflows. This was followed by a lot of oop questions (gfg helped me a lot here),dbms and some real life scaling challenges which could be answered by intuition. At the end she wanted to know about any questions I had. I would suggest you prepare something unique as this might be sort of a brownie point.

Round 3 : technical interview 2 : This round was relatively grilling. There were two interviewers who again asked me to explain about my project and asked some questions based on it. This was followed by a dsa question. The question involved a custom implementation of bfs on a specially designed tree (it was solvable using knowledge of bfs and some intuition). I was able to solve the question without taking any hints. This was followed by a question on arrays using two pointers. This was sort of a weaker topic for me so I couldn't come up with an optimal solution in time. After this they again asked if I had any questions and the interview ended.

Important Topics and Subtopics to Remember

Dsa : graphs (absolutely must) and trees, dp (for coding round)
Oop : basic concepts in java and how it's different from cpp etc (use gfg it's really amazing for this)
DBMS: basic concepts like keys, consistency, normalisation etc

Sources of Preparation

For graphs I would highly suggest you to learn from a source (dsa tutorials in my case) and practice in leetcode. For other topics I used a mix of interviewbit, leetcode and my dsa tutorial sheets

Additional comments

Answer questions very confidently and deeply and don't hesitate to tell if you don't know the answer since your interview time will tick away.

Intuit

WFH

IT

Stipend Offered: 60,000 per month

Summer Intern

Recruitment Procedure

Round 1: Coding Round
The round was held on HackerRank, there were 3 questions.
I qualified for the interviews on scoring 270/300 points. I solved one question partially, two fully.
The questions involved basic DSA knowledge which can be gained from practice on Interviewbit and Leetcode.
Round 2: Technical Interview
The first technical interview lasted for only half an hour, I was asked a linked list question, specifically to find if the list has a loop in it, I first proposed a map-based solution, which the interviewer agreed with but wanted me to not use any pre-existing data structures. So I used the two pointer approach, had to share my screen and code everything from scratch. Then the interviewer told me a bit about the company, what I can expect if offered a role, I asked a little about the same, stating I didn't have any financial background myself. He stated that wasn't a prerequisite since the IT work is purely IT related and finance knowledge is not required.
Round 3: Technical Interview
After the first technical interview, out of 17 people 4 people were shortlisted for another interview, two people took my interview this time, seemingly higher in the ranks. They asked me what topics I liked and what I'd been studying that semester and asked me questions related to those. I didn't know answers to every question, but I didn't try to lie and stayed blunt about what I knew and what I didn't know, also trying to explain what could be the answer based on my knowledge, which wasn't complete.
After this round, 2 people were offered the summer intern role.

Important Topics and Subtopics to Remember

Dsa
Oop
Dbms (I wasn't asked but some other people in the interviews were)
Any topics you're currently studying/are confident in.

Sources of Preparation

Dsa:
Hackerrank, Leetcode
Dbms/Oop:
Geeksforgeeks

Additional comments

Be honest about what you know and what you don't. If you're trying to be smart and lie, the interviewers know, they've interviewed multiple people. Just be truthful and try to apply what you know where ever you can! Good luck everyone if you read this :)

Intuit

WFH

IT

Stipend Offered: 60,000 per month

Summer Intern

Recruitment Procedure

Round 1: coding round : this was hosted on hackerearth. Total marks was 200. The questions involved breadth first search(100), dynamic programming(50), string operations (use of custom comparator)(25) and math(25). One of the questions had expected output -1 even though it showed 1 in the question. This question was bfs and many people couldn't figure out the error.

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Important Topics and Subtopics to Remember

Dsa : graphs (absolutely must) and trees, dp (for coding round)
Oop : basic concepts in java and how it's different from cpp etc (use gfg it's really amazing for this)
DBMS: basic concepts like keys, consistency, normalisation etc

Sources of Preparation

For graphs I would highly suggest you to learn from a source (dsa tutorials in my case) and practice in leetcode. For other topics I used a mix of interviewbit, leetcode and my dsa tutorial sheets

Additional comments

Answer questions very confidently and deeply and don't hesitate to tell if you don't know the answer since your interview time will tick away.

JPMorgan Chase & Co.

WFH

IT

Stipend Offered: 1,00,000 per month

Quantitative Research - Summer Internship

Recruitment Procedure

Round 0: Coding test + MCQ's.
MCQ's : There were about 35 MCQ's. 18 on probability (puzzle type), 10 on math, rest on coding.
Coding test had two questions :
1. If a person is allowed to take m stairs at once. In how many ways can he reach the nth stair starting from the 0th stair. (n >= m , m > 0). (Classic dp)
2. SumTree (Classic binary tree question, available on gfg)

Round 1: Lasted about 40 mins. Started with some basic DSA questions like stock sell, merge intervals etc. Asked me to explain 3 basic concepts of OOP (know the main 4 ones well). Then asked some linear regression (probably cause my resume mentioned econometrics) finally asked lots of puzzles.

Round2: Similar topics but the questions got harder.

Round 3: This had some really good questions which i hadn't seen before. He didn't expect me to know the answers and helped me along the way. I guess he checked how well i responded to his suggestions. (ex : find the avg trials to get HH on a coin toss)

Round 4: This was a senior employee. He asked only 3 questions
One was job scheduling (DSA), The next checked if i could apply oop practically. Gave me a real life design example. The final question was about my resume. He asked me about the implementation of some of my projects. Cursory detailsto know if i know what ive done. (DRM)

HR: This was a five min call in which she just asked me why fintech and why JP Morgan.

Important Topics and Subtopics to Remember

DSA, OOP, Prob Stat, Math

Sources of Preparation

Source for DSA was leetcode and interviewbit.
Source for OOP: just the course in campus was enough
The rest I hadn't exactly prepared for

Additional comments

They ask a lot of puzzles so go through those.
They also ask questions depending on your resume.
A finance profile is a plus point.

JPMorgan Chase & Co.

WFH

IT

Stipend Offered: 1,00,000 per month

Quantitative Research

Recruitment Procedure

Mentorship program:
Screening test online: mcqs on math, probstats, coding
Case study: 2 problem statements whose solution was to be submitted within 10 days
Interview:
Was offered post mentorship sessions
3 rounds of interviews.
1st round: 1 dsa+ 2 probstats question language basics of cpp 45 mins
2nd round: 2 dsa questions - trapping rain water problem from leetcode. 45 mins
3rd round: rapid fire questions round.
A probstat problem with 4 followup questions
1 dsa problem
Oop basics
Probability question in the end
45 mins long.

Important Topics and Subtopics to Remember

Dsa, oop, probstats, linear algebra

Sources of Preparation

Gfg, leetcode, interviewbit and codeforces for dsa
Oop basics from gfg
Math and probstats: past year slides and math required for machine learning from slides.

Additional comments

Finance knowledge is not a prerequisite but would be great if you could talk on some concepts with the interviewer

KPIT

WFH

Embedded
Trainee/Intern

Stipend Offered: 15000 per month

Recruitment Procedure

Round 1: Resume shortlisting.
We had to upload our resume and also fill out a form. In the form I had to mention three choices for my project from a list of projects given by the company. I also had to write 1-2 sentences on how do I plan to contribute to the project.

Round 2 : Interview
The interview started with them introducing themselves and the project. They explained me the projects one by one and asked me if I would be interested on working on that particular project. After I had agreed on one project, my interview began. They were basic programming questions which also required the basics of Digital design. To be specific you should how different logic gates work.

Question 1: Given an array of n numbers where numbers are repeated and there's one number that isn't repeated, how would you find that number?
My Answer: Firstly the answer I gave was the basic going through the loop again and again making an n^2 time complexity. He asked me to do it within a time complexity of n. He was very helpful and himself gave me a hint to use logic gates. I used the XOR gate and said that if I XOR all of them the answer will be the number that is present only once.

Question 2: Building on the previous question he said if there's an array of numbers(A) and another array(B) which has a list of numbers, two in each entry. The list of two numbers give the starting and ending indices for the range to be extracted from array A and XORed. How would I do this?
My answer: Again the answer I gave here was of n^2 order complexity. Then he helped me out saying if there's another array(C) that has the XORed value of numbers from 0-i i be the index of array. So then I was able to figure it out that I can take the (p-1)th entry and qth entry in the C, p and q being the elements of list in array B and XOR them to get XOR of values from p to q.
Then they asked if there's something I wanted to ask. I just asked a little more about my project topic. That was all.

Important Topics and Subtopics to Remember

C programming, Digital design. (These topics may differ depending on the project you choose.)

Sources of Preparation

Slides of CP and DD.

MathWorks

WFH

IT

Stipend Offered: 40,000 per month

Intern in Engineering Development Group

Recruitment Procedure

Round 1: Coding Test - In total there were 10 questions out of which 8 were MCQ and 2 coding questions. The MCQs covered CS concepts like DSA and OOPs as well as Mathematics. The coding questions were straightforward, one on string manipulation and other on simple array.

Round 2: HR - Standard HR questions were asked regarding strengths and weaknesses, why Mathworks and what makes you stand out among other candidates.

Round 3: Managerial - Resume was discussed in length. Asked in detail about the projects and internships. Discussed theory of DSA and checked my command on any one of your preferred programming language (C++ in my case). I was also asked some questions on core electronics subjects such as Signals and Systems and Control Systems.

Important Topics and Subtopics to Remember

DSA, OOPs, (if from electronics)Signals and Systems and Control Systems

Sources of Preparation

Leetcode, GeeksforGeeks

Additional comments

If your major is electronics, expect questions from electronics CDCs like Signals and Systems, Control Systems and Communication Systems.

MathWorks

WFH

IT

Stipend Offered: 40000 per month

Intern in Engineering Development Group

Recruitment Procedure

Round 1 (Online Assessment): Conducted on Hackerrank, consisted of simple programming and CS MCQs along with two questions where you had to code the solution in your desired language. The questions were simple one was adhoc the other based on bit-masking

Round 2 (Managerial Round): Simple questions to test your fitn in the organisation, it consisted of questions of the kind "What would you do when finding a teammate not willing to contribute", etc.

Round 3(HR Round): Again the same as managerial round, but less pertaining to the details of the work more on how you are as a human.

Important Topics and Subtopics to Remember

DSA, DBMS, OOP, some good niche things about various languages and frameworks(good way to stand out sometimes)

Sources of Preparation

LeetCode, InterviewBit, JavatPoint, and Googling in general

Additional comments

Do not lose your calm, the questions in the interviews are never difficult, if you cleared the online assessment, the interview questions should be a breeze. All you have to do is STAY CALM, it is very easy to get overwhelmed by all the pressure of securing the offer and thinking as if your life depends on it, trust me it does not!
All the very best for your preparation!

MathWorks

WFH

IT

Stipend Offered: 40000 per month

Intern in Engineering Development Group

Recruitment Procedure

Round 1: Online Test
Consisted of around 15-20 MCQs that tested basic concepts of programming, DSA, OOP and DBMS. Normal interview preparation should be enough to solve this.
Two simple coding questions were asked, one on strings and one on hashmaps. The level of difficulty of the coding questions was quite simple compared to other company tests.
Round 2: Hiring Manager round
There was no technical interview. The hiring manager was very friendly, first introduced himself and his role at Mathworks. He then proceeded to ask me to explain in detail one of the projects on my resume. He then finally asked a coding question on trees, which was simple. No actual coding required in this round, he was satisfied with approach.
Round 3: HR Round
He asked a lot of questions from the PPT, as well as what I thought the role will be about. Take notes during the PPT and try to refer to these in your answers. Most questions were quite generic, simple behavioural questions.

Important Topics and Subtopics to Remember

DSA:
Trees are very important for Mathworks.
Wasn't asked any DBMS, OOP, etc during interviews, only in Online test.

Sources of Preparation

Demux Academy
GFG
Leetcode

Additional comments

Try to pay utmost attention during the Pre Placement Talk. The HR round asks a lot of questions about the ideas mentioned in the PPT. Make notes of the main ideas in this.

Media.net

WFH

IT

Stipend Offered: 1,00,000 per month

SDE Intern

Recruitment Procedure

Round 1: coding test. Was a bit lengthy. One was medium and two questions were tough
Round 2: tech interview 1. Consisted of a question on DP on trees. Need a strong hold on data structures and algo to solve the question
Round 3: tech interview 2. Had a question on a data structure I've never used or heard before. It is called K dimensional tree. Just had to present an outline of the code and didn't need to write the production ready code. Then dbms, os and networking was asked .

Important Topics and Subtopics to Remember

Dsa, os, dbms, oop, networking

Sources of Preparation

Gfg, leetcode

Additional comments

Read all the standard questions about the theory concepts such as in networking they ask "what happens when you type google.com on a browser". Don't go in depth but make sure to read company archives of the company before interview .

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round1: Technical Interview
The interviewer was very polite and interactive. He asked me to introduce myself. Then he gave me a DSA question. He wanted to discuss the solution rather than me telling the complete solution. He asked me about the use of the data structures used and the benefit of choosing them over others. The entire discussion took around an hour. At the end he asked me if I had any questions for him.
DSA Question:
Given a character array of tasks, representing the tasks a CPU needs to do, where each letter represents a different task. Tasks could be done in the specific order. Each task is done in one unit of time. For each unit of time, the CPU could complete either one task or just be idle.
However, there is a non-negative integer K that represents the cooldown period between two same tasks (the same letter in the array), that is that there must be at least K units of time between any two same tasks.
Return the least number of units of times that the CPU will take to finish all the given tasks.
You can start with the brute force solution and build on it if asked by the interviewer.

Round 2: Technical Interview
The interviewer was very friendly. He asked me to introduce myself. He asked me about all of my projects. Then he gave me a DSA Question and 3 OOP Questions. He wanted me to present the code clearly with different functions mentioned separately. This round took 45 mins.
DSA Question:
Given a linked list with all types of characters, we need to check of the linked list is a palindrome of the (alphabet [a-z, A-Z]) characters irrespective of the case.
OOP Question:
Q1. In the structure of the linked list, if you want to incorporate any given data structure at the run time, how would you solve that problem?
Q2. What is runtime polymorphism?
Q3. What is the use of getter and setter functions? Do not specify anything related to abstraction, encapsulation or data hiding.
Q. Do you have any questions for me?

Round 3: Technical and HR Round.
The interviewer was very friendly. She asked me to introduce myself. She then asked me about my projects and internships.
Q. What s your favorite subject? Why?
Q. What is your favorite app? What is the most important feature of that app? What do you think is the

most difficult part of that app? Do you find anything that is missing? How do you make it better?
DSA Question:
Given a string without spaces and a dictionary of words, find the number of ways to break the string using the words given.
She asked me not to just tell the solution but my thinking process. She wanted to describe why I am thinking of taking a particular approach and all explicitly.
Q. Do you have any questions for me?

After all the rounds a total of 17 students were selected.

Important Topics and Subtopics to Remember

DSA: Basics of all the abstract data types. (Anything can be asked.)
OOP: Basic pillars of OOP. Understand the use of every concept that you learn. Questions will not be straight forward.
DBMS: No questions were asked. But prepare the basic queries and normalization

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Sources of Preparation

DSA: Leetcode would be sufficient. The questions would just be a modification of those in Leetcode. I recommend solving all the questions in the InterviewBit too.
OOP: GFG
DBMS: InterviewBit

Additional comments

Try preparing before hand on what to say about your projects. You must be able to explain each project asked for at least 10 mins. Try to be as interactive as possible and discuss your thinking process. Communication is very important that solving the problem itself. Dont give a pause. Keep talking to the interviewer.

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Online Coding Round-
Total 3 questions were asked.
Q1. basic hashmap based question
Q2. Given an array of integers find mean mode and median of the set of numbers
Q3. Euler totient based question (basically you should just know how to find euler totient)

(All the interview rounds were on microsoft teams)

1st Interview Round-
The interviewer asked me about my PS1 experience and the project I worked on. After this I was given one DSA question based on graphs and I had to tell the optimal algorithm and code it locally while sharing the screen and run the test cases locally. You can find the exact description of the question below. After writing the code the interviewer asked me to come up with the corner test cases. This round went on for around 50 minutes in which I completed the code and ran all the test cases.
Question description -> There are a total of N subjects available and some of them might have some pre-requisites. Find the order in which one can finish all the subjects such that a subject is done only after all its pre-requisites have been completed. If it is impossible to complete all the subjects print 'impossible' else print the correct order to finish all the subjects.
(can be solved optimally using graphs and topological sort)

2nd Interview Round-
The interviewer started by introducing himself and asking me to introduce myself.
In this round too I was asked a question based on graphs and similar to last round I had to come up with the solution and code it locally while sharing the screen and run the test cases. Question was as follows-
There are N houses in a village, and there are a few roads connecting a few houses initially.
You are given costs for building roads between any two houses. The cost is given in form of a 2-d matrix where cell [i,j] represents cost for building road between house i and j. Given the cost matrix and the list of pair of houses which already have roads between them find the minimum cost such that all the houses in the village are connected i.e. if you start from any house you can reach any other house in the village.
(I solved this using graphs by using Disjoint set union and minimum spanning trees)

3rd Interview Round-
This round was Manager Round basically kind of HR + Technical.
The interviewer worked in Microsoft for around 18 years and was very professional and experienced compared the previous interviewers. She asked me to introduce myself and then asked me about my PS1

internship experience and the project I worked on. She also asked me about the challenges I faced. Then she gave me puzzle / problem and finally asked me to code it.
puzzle/problem - There are N people and out of these N people 1 of them is an influencer. All other people know the influencer and the influencer doesn't know anyone. Give an algorithm to find the influencer and tell the time complexity of the algorithm.
(I solved it in O(N) time complexity and you can find the algorithm easily online)

This was my overall experience in brief, feel free to contact me for anything :)
Cheers !

Important Topics and Subtopics to Remember

DSA most important
OOPs and DBMS basics -> might be asked depending on the interviewer

Sources of Preparation

DSA-Geeks for geeks
SQL- w3schools
DBMS theory - (youtube) knowledge gate channel and gate smashers channel
OOPs basics- https://www.edureka.co/blog/interview-questions/oops-interview-questions/

Additional comments

Be polite and pay attention to what the interviewer is saying, if the question is not clear then clarify it with the interviewer before solving it. Don't assume anything yourself and ask the interviewer before assuming and clearly mention it to the interviewer about the assumption made if any.

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round 1: Online coding round : The round consisted of 3 coding problems, for which we were given 90 mins. The problems were different for different people. I found the problems quite easy and was able to solve all 3 within 40-45 minutes.

Round 2: Technical Interview 1: I was given a fairly challenging problem, of topological sort. I was given a vector of pairs, whose each element denoted a course and its prerequisite. We had to list the courses in the order they should be chosen or return 'impossible' if no such order was possible. The interviewer was very polite and kept asking me regularly during the 45 minute interview some questions regarding my code. Although, I did not use topological sort during the interview, I was able to come up with an efficient and correct working solution to the problem.

Round 3 : Technical Interview 2: This interview also lasted for 45 minutes. The question was that I had to convert a given integer into words. For e.g - 1113 was to be converted to one thousand one hundred thirteen. The number given would be of 6 digits at max. Although the logic was pretty simple, but the implementation was quite heavy., with loads of edge cases. The interviewer told me that he was judging me on the modularity of my code, and how well I write (having minimal code in main function and creating functions wherever required). I found the interviewer to be bit tough and unfriendly. However I was relieved to hear from him that my interview was one of the best he took as many others fumbled and lost their way in between.

Round 4: Technical Interview 3-cum-Manager (HR) Round: This interview lasted for about 30 minutes. The round started with some HR questions like my favourite subject, describing some projects I have done, some courses I took and why I wanted to be a software engineer. Then, he gave me a DSA question. I had to design a data structure that stores marks, student name and roll no for 2 different sections, sort them and merge then in the data structure. I was able to successfully code the solution and the interviewer seemed impressed.

Important Topics and Subtopics to Remember

Entire DSA, especially concepts of graphs, trees and DP are very important. Other than this, OOP or DBMS might also be asked.

Sources of Preparation

I used the following material for my preparation -

1. Interviewbit
2. Leetcode (Medium problems mostly)
3. GeeksforGeeks (for DSA and OOP/DBMS)
4. DSA Course Slides
5. Codechef/ Codeforces for competitive programming

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round 0 : Coding Round
3 questions with 1.5 hours to solve them
Q1. Simple dp question with recursive relation given.

A[i] = A[i-1] + 2*A[i-2] + 3;

Q2. Array given represents apples in baskets. You have to move the apples around such that the final number in each basket is the same. Find the minimum number of apples you have to move.

Q3. For given array, find mean, median and mode.

Make sure you select the right language. C++98 stl doesn't have a map, it's included from C++11 onward. The problems were randomized for everyone.

After this 40 students were selected for the interviews. The interview process was completely online.

Round 1 : Problem Solving/Coding Interview
The interviewer was friendly and supportive. He introduced himself and asked me to do the same. Then he asked me to solve a problem,

You are given tasks like an array (['A','B','A','C']). Each process takes 1 second to complete. If the task B is completed at time 't', then it can again be completed only after time 't+k', where k is cool down period.

I gave an approach using maps to keep track of cool down period. He asked me to code, come up with some testcases and corner cases. He was looking for a complete answer here, I had to remove a few bugs. He asked me the complexity, and the solution wasn't the best possible. He gave me a hint to improve it. By then, the time was almost up so he asked me to send the improved code on the chat in a few minutes. 45 minutes to 1 hour was the length of the interview.

As the interview was on teams, I had no idea how many made it to the next round.

Round 2 : Another Problem Solving/Coding Interview
This time the interviewer dived directly into the questions.

Q1. You are given a sorted array and you need to find the frequency of a given number. I gave the

approach using lower_bound and upper_bound, he asked me to code that without using stl. He asked me to check corner cases, but didn't ask me to compile and actually test some cases.

Q2. You are given a matrix filled with 1's and 0's. You need to find the largest island, that is 1's connected horizontally or vertically. I gave a dfs based approach. I was using global variables in the answer, he asked me to incorporate those as parameters.

This was a shorter round, 30-45 minutes. Other students I think had different questions for this round.

Round 3 : Problem Solving-HR Round
The interviewer was friendly, asked me to introduced myself and talk about my favorite subjects. Also, to explain previous internship experiences. She asked me to go into detail in one of them. Then she moved to a problem,

Q. You are given a dictionary of words and a string, partition the string such that every word is in the dictionary.

I explained the idea first and then she asked me to code it. There were a few bugs in the code, but I think she got the idea and asked me to make the changes later. She asked what my expectations were from the internship. I told that I would like to work on developing products and why it's interesting. I don't think she was entirely convinced with my answer.
The final list came out a few hours later. They had selected 17 students.
The overall experience was really nice, they interviewers were friendly and supportive. I was a little flustered in the first round, the interviewer noticed that and reassured me that I was on the right track and to continue coding.

Important Topics and Subtopics to Remember

DSA - Arrays, Binary Search
Graphs - DFS/BFS

Sources of Preparation

Leetcode is a great place to learn new concepts and try problems. The discussion and the solutions are genuinely nice. If you are looking for topic wise or company wise questions InterviewBit is a great place. Go through the previous interview experience on GFG.

Additional comments

Just think out loud and clear any doubts that you have.

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round 1: Coding Test
There were 3 questions to be solved in 90 minutes. Two were fairly easy and one was a dynamic programming question (Dice Throw on GeeksForGeeks).

Round 2: Technical interview
The interviewer was very friendly. He asked me one DSA question and later we talked about the Microsoft logo and their work culture. This lasted for about 40 minutes.

Question: you have some types of assignments which you need to turn in. You can only turn in an assignment of the same type after a cool down period. You need to find the minimum time that it will take to submit all assignments. You can submit them only in the order that they are given in.

My solution: store assignment type and the last time instant that this assignment type was submitted in a map and then iterate over the sequence of assignment types given. If the difference between current time and the last time this type of assignment was submitted is greater than the cool down period then go ahead otherwise add the difference to the final answer.

Round 3: Technical Interview
He asked me two DSA questions. This lasted for about 45 minutes.

Question 1: implement the forward button and back button of a browser. You should also be able to add a new page also.

Solution: use a doubly linked list. When you hit the back button, you go to the previous node and when you hit the forward button, you go to the next node. For a new URL, change the next node of the current node to the new URL.

Question 2: sum of parallel paths when you diagonally traverse a tree

Solution: Diagonal traversal on GeeksForGeeks

Round 4: Technical + HR (Manager interview)

He started off by asking me how the process was so far. Then we talked about my machine learning project. He asked me what technical challenges I faced while doing it. Then he asked me a simple DSA

question. This lasted for 30 minutes.

Question: find the last N lines of a file

Solution: you go to the end of the file and then traverse backwards. Another solution would be to store pointers to each line but that takes up a lot of space.

Important Topics and Subtopics to Remember

Sorting, hashing, trees, graphs, dynamic programming, bit manipulation, binary search, strings, stacks and queues

Sources of Preparation

InterviewBit, LeetCode (weekly contests)

Additional comments

Solve all questions on InterviewBit and before the test you should look at archives at GeeksForGeeks. People put their experiences on it and you might get the same question. I wasn't asked any OOP or DBMS questions but some people were asked. So you should read the slides and the last minute notes on GeeksForGeeks for both.

Microsoft Corporation

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IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Coding Round:

Platform - Mettl
Duration - 1.5 hours
No of questions - 3
1st question - It was a very easy question based on sorting.
2nd question - Find the number of positive integers coprime to N and smaller than N. This required knowledge of algorithm to find GCD of 2 numbers in smaller time-complexity.
3rd question - Given N dice all identical with M sides. Each side of a die has a number from 1 to M. Find the number of ways to get a number X. This is a DP question and can easily be solved if solved questions like “Target Sum” before.

I did all 3 questions and a total of 40 students were selected for the interview rounds.

Interview Rounds:

Round 1:
The interviewer first greeted me and asked me to tell me about myself. He then moved on to my project asked me to elaborate on it followed by some questions. This project discussion was for around 10 minutes. He then asked me a coding question. The question was - Given a string of capital alphabets with each alphabet corresponding to a specific type of task. Each task can be done in 1 second, but there should be a cooldown period of ‘t’ between each task of the same type. The task can be done given order as in the string. Find the total time to complete all the tasks. I gave him an answer, he then said to improve the space complexity. I was able to give a better solution in space complexity, but he said it’s almost perfect and hinted me about a redundant variable. I could understand his hint finally gave the best time and space complexity solution. He was satisfied with my solution. He then asked me if wanted to ask any questions from him, which a formality in every interview round. The duration of this round was around 35-40 minutes.

Round 2:
Like the previous round and asked me to introduce myself. He then quickly moved to coding questions. There were two questions asked in this round. The first question was like Leetcode’s “Insert Delete GetRandom in O(1)”. I had to design the data structure and then provide a full working code for a given input format. I designed the data structure pretty quickly, then had a lot of discussion about the input format and the complete working code. I was able to provide him a final code which he was satisfied with. The second question was - given an array of integers, find the length of the longest consecutive elements

sequence. I discussed with him a naive solution by sorting the array. He asked me to code it. I completed the code quickly, during this we had a discussion about the time and space complexities of different sorting algorithms. Then he asked me to think about a better time complexity solution. After a while, I was able to give him an approach using unordered sets. This round's duration had already crossed 65-70 minutes, thus he finished the round here and didn't give proper feedback on my approach. After the interview, I found out I was going in the right direction for the second question. Finally, he asked me, if I had any questions for him. The duration of this round was about 70-75 minutes.

Round 3:
Before the round, I had been informed by PU that it will be a manager plus technical round. The interviewer was a very experienced man. He asked me to introduce myself and then we had a discussion on my project. I had a much deeper discussion here, compared to the project discussion in the first round. He then asked me to code the 'itoa' function - converts an integer to string. I gave him a solution, then he asked me if this is the complete solution. I then realized I had missed the case of negative integers. I updated my solution and he was satisfied with it. He then asked me another question - Remove multiple occurrences of a character in a string, i.e. only the first occurrence of a string should remain in the string. He first said the string only contains small letters. I provided him a solution which he was satisfied with. Then he said it can contain both small and capital letters. I updated my solution and then he said the string can contain any type of character. I again updated my solution and he was satisfied with it. Finally, he asked me if I had any questions for him. This round lasted for about 40-45 minutes.

Finally, a total of 17 students were selected for the internship.

Important Topics and Subtopics to Remember

DSA is the most important topic. OOPs, OS, DBMS are other important topics along with good understanding of your project.

Sources of Preparation

Geekforgeeks, Leetcode, Interviewbit

Microsoft Corporation

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IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Microsoft's hiring process is heavily based on DSA. Unlike other companies, they ask almost zero questions on OOP, DBMS, OS, etc. But it never hurts to be familiar with them. They do, however, ask some questions about your projects and resume. The interviewers were very friendly and chill. Interviews of Microsoft are easy to crack if you keep calm, communicate, and know easy-medium level DSA.
The interviews are conducted on Microsoft Teams, so make sure you have it installed and properly set up. You will need to screen share the text editor window. STL was allowed for coding in C++ (it was not allowed in Mettl which Microsoft used for the online coding round).

Round 1:

Duration - 30-40 mins.
Started with an introduction and then followed by questions on resume and projects. Had a general discussion on my previous internship experience at Samsung. Then he asked 1 easy level DSA question:

Q1. Given an array of input strings (processes) and a cooldown. The process can execute only after cooldown time after the last occurrence. Return the time required for the execution of all processes
e.g. ["A", "B", "A", "C"], cooldown = 5
Output: 6 [A->0, B->1, A->5, C->6]
You are expected to explain, code, dry run, and run with various edge cases (you are expected to create test cases).

I was done with the round pretty quickly. In the end, he asked if I had any queries.

Round 2 (DSA)

Duration - 40-45 mins.
The interviewer got straight to the questions without wasting any time. This round had 2 medium level DSA questions but both were a bit time-consuming to code.

Q1. MinStack [link- https://leetcode.com/problems/min-stack/]
This is a very popular problem from data structure design. You need to implement a MinStack class, with an operation to get the minimum element in the stack in O(1) time. Can be solved easily by maintaining a vector. You are expected to explain, code, dry run, and run with various edge cases (you have to create test cases). After this, he asked me to optimize it further in various cases (e.g. what happens if the

elements are unique…) and insisted me to try to solve this using stack instead of vector. So basically try different ways in which you can reduce the time/space complexity. The problem was easy but the optimization part was a bit tricky. I was done with this question in 10-15 minutes (including coding).

Q2. Rearrange Linked List. Given 1->2->3->4->5->6->7, rearrange such that final is 1->7->2->6->3->5->4 Initially, I misunderstood the pattern but since I had time, I was able to correct the mistake. You are expected to explain, code, and dry run with various edge cases (you have to create your own test cases). This can be solved with 2 pointer method but coding this without missing the edge cases is a little tricky. This is because you don't have a fast way of checking the logic/code as the runner or main function is not provided. You need to get it right on your first try or spot the mistake by dry running within the given time.

I solved both questions within time with 5 minutes remaining. It was not necessary for you to solve both of them to qualify for the next round (from what I have heard). In the end, he asked if I had any queries.

Round 3 (Problem-solving)
Duration - 25-30 mins (shortest round)
This interview was scheduled quite late, so got very little time. The interviewer started with the introduction, then some discussion on my projects (REST APIs...), and finally some questions on my past internship experience at Samsung. This round had 1 very open-ended question related to DSA/problem solving:

Q1. You have to design a system that keeps track of the trucks on a bridge and find the average weight on the bridge at any given point of time in an efficient manner. Given entry time, exit time, the weight of trucks, and a time (time in hours 0 to 23).

The question was very vague, this is a very clear version of it. You were encouraged to ask questions to clarify the problem statement. Start with the most basic/brute force approach, then improve it. You had to explain the thought process and the approach. After which he added more conditions on the questions followed with further discussions. In the end, the problem was completely different from the initial one. He was satisfied with the approach and didn't ask me to code. I just wrote a pseudo-code while explaining. It was really important to think out loud in this round as you were judged solely in the basis of your thought process.

17 out of 40 students shortlisted for the interviews got the internship offer via the on-campus process.

Important Topics and Subtopics to Remember

Very important - DSA (medium level). You need to be fast and able to write error-free code on the first try.
Be familiar with your resume (Don't lie here) and projects.
They probably won't ask much OOP, DBMS, OS, etc.

Sources of Preparation

Assuming you know the basics of DSA, Leetcode and InterviewBit are more than enough.
Use your time wisely, and start 2-3 months before the interviews.
I started with leetcode (~100 medium questions will give you enough confidence) and completed InterviewBit in the last 1.5 months.
Go through the projects in your resume once.
You must read interview experiences (plenty available in GeeksforGeeks Archive)

Additional comments

If you are aiming for Microsoft, DSA is your best friend.
The recruitment process can be exhausting. I had interviews for 2 companies (Microsoft and Arcesium) on the same day from early morning till 9 PM and a total of 7 interviews, 3 for Microsoft and 4 for Arcesium, with very short (sometimes no break) between them. So be mentally prepared for this.

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round 1: Coding Round

The coding round consisted of 3 question. We were required to code them in a certain time frame . The questions were based mostly on sorting, maths and hashing. Everyone giving the coding round was provided with questions from a question bank. In my case, the first question was based on sorting, second required to write code for euler totient function and the third question was based on maths .

Round 2 : Technical Interview

The interviewer was very polite. First, He asked me to introduce myself and about my work experience . After that, he introduced himself and told about the team he was a part of at Microsoft . After this, he gave me a dsa question to solve. The question was based on Topological sort (graph theory) . In the question, i was provided with a pairs of courses (a,b) which basically means that course a is a prerequisite of course b i.e in order to do course b, one must complete course a first. The question required me to write a code which outputs yes if a particular set of given courses could be completed and the order in which the courses should be done and no if they couldn't be completed . After i wrote the code, he asked me to tell the concept of graph theory on which the question on based on (Topological Sort) ,about the time complexity of the code i wrote and asked to list some edge cases which need to be kept in mind while solving the given problem . After I answered the questions, he asked me if i had any questions for him .

Round 3 : Technical + HR round

The interviewer first asked me to introduce myself . Then, he asked me about the courses i had completed and have studied as a part of college curriculum . He then told me to explain the projects which i had listed in the resume and asked about my work experience . After all this, he asked me a programming/design question . He asked me different programming concepts like hashing, linked list, array, etc. which i could use to solve the question and asked me to write the code explaining different ways in which the question can be solved and asked about the advantage of using a particular concept over another.

Important Topics and Subtopics to Remember

DSA, OOP

Sources of Preparation

GFG, Interview Bit, Leetcode, codechef and codeforces contests

Additional comments

If you are aiming to get an internship at microsoft, try to be good at Data structures and Algorithms and Object Oriented Programming. Try to solve question which have been asked in the past in coding rounds and in the interviews in order to get a better idea about the kind of questions they ask (can be found on interview bit and leetcode) . If you are aiming to get an internship in any IT company in general, make sure you are thorough with dsa ,oop and dbms concepts. Many companies also ask in interview to write SQL queries so try to learn and practice sql queries as well .

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round 1: Coding Round
It consisted of 3 Ad-hoc and implementation type questions which did not require much prerequisite knowledge. These questions were simple and around 40 people cleared this round.

Round 2: Technical Round
The interviewer seemed quite jolly and asked me to introduce myself (just usual formalities). The interviewer then asked me a coding problem which was based on topological sorting in a directed graph.

There are N courses you must take, labeled from 1 to N. Some courses may have prerequisites. For example, to take course 0 you must first take course 1, which is expressed as a pair: [0,1]. Given the total number of courses and a list of prerequisite pairs, write code to return the order of courses you should take to finish all courses. Find any valid ordering of completing the courses. If it is not possible to complete the courses, then just return “Impossible”.
I couldn't couldn't come up with the correct solution as I missed few edge cases, but the interviewer seemed satisfied with the topological sort approach.

Round 3: Technical Round
This was again a coding round and it was much simpler than the previous round. The question was to list the connected cells in a grid which could be done using BFS/DFS.

Given a 2-dimensional grid of binary numbers representing the area of the city, where 0 represents the wall and 1 represents the empty area, return all the coordinates inside each block. Note that, group of one or more contiguous 0's represent a block. A block can be of any shape and two consecutive 0's on diagonal ends are part of same block.
Group of one or more contiguous 1's represents the empty area.

I managed to solve the question very quickly and the interviewer was impressed by that. The interviewer then asked an extra question which was based on hashing and grouping elements. Though I couldn't really solve it, we had a good discussion on the different types of approaches I came up with.

Round 4: Techincal + HR Round
The interviewer was a very senior person. First I was asked my intro, and then about the internship experience during PS 1.
The interviewer then asked me about my favorite subject, and I chose DSA. The question was based on recursion/stacks.
Decompress a string
given 3[a2[b]], it should become 3[abb] -> abbabbabb
After I solved the question, I explained my approach and the interviewer seemed satisfied with it.

Important Topics and Subtopics to Remember

DSA
DBMS
OOP

Sources of Preparation

GeeksforGeeks
Interviewbit
Leetcode
cp-algorithms.com
codeforces

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round 1: Coding Round
3 questions were asked in this round and we had to code them out. I used Java as my programming language. The first two questions were based off Dynamic Programming and Greedy Algorithms while the third question was to implement a function with a binary number as input and return the bitwise XOR value of the input as output of the function. That was the easiest one and only took 15-20 mins so I focused more on the other questions.

Round 2 and 3: Coding Interview
Both of these interviews were technical interviews. In both of them I had to join a video call with a recruiter and they gave me a coding question that I had to solve while presenting my screen and code editor. I was only given one question in each interview. In round 2 I was asked to implement a hotel accommodation program where an array of timings were given and we were supposed to check if the person could check in or not. This is a similar question: (https://www.geeksforgeeks.org/find-k-bookings-possible-given-arrival-departure-times/). In the second interview I was just asked to delete duplicate numbers from an array without using extra space. Points to note in these interviews is to explain the entire approach that you apply in solving the questions to the recruiter from scratch. Start from the brute force solution and then build up to the more optimal solution. Apart from the coding question, I was asked a few question on hashing and OOP.

Round 4: HR Interview
This round was fairly straightforward. The very first thing my interviewer told me was that she wants the interview to be a normal conversation between two people and nothing technical. She started the conversation by asking me some questions about the projects I had mentioned in my resume. It was my turn now so I asked her about the projects that were presently going on at Microsoft R&D Center. This went on for an hour approximately, and we came to the end of the round and the process.

Important Topics and Subtopics to Remember

(For coding rounds)
DP
Greedy Algorithms
Sorting
Go through DSA course well
(for interviews)

DBMS
OOP

Sources of Preparation

For all coding rounds:
InterviewBit
Leetcode
Hackerrank (Problem Solving Path)

Additional comments

Each interviewer will ask you if you have any questions at the end of the interview. Make sure you have prepared 1 or 2 questions that you want to ask them. Speak clearly and confidently. Even if you don't know the answer, try explaining your approach to them.

Microsoft Corporation

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IT

Stipend Offered: 80,000 per month

SWE Intern

Recruitment Procedure

Round 1 : Coding Test

There were 3 very easy level questions as compared to other companies coding rounds. None of them used very complicated dynamic programming or graph related algorithms. Hence, cutoff for coding round was almost full marks(300/300) for getting into next round.

Total 40 students were selected for next round which is very high as compared to other companies.

All further interview rounds were conducted on the same day with a gap of 2-3 hours in between

Round 2 : Interview 1

The interviewer was very friendly and made sure about my comfort level before starting any questions. He asked 2 small DSA questions which were very basic and I wasn't asked to write the exact code but just the algorithm. One was related to binary search and it's improvisation for a specific given conditions. Another one was very simple logic based question. Then he moved on to Final problem related to scheduling of the classes (which is solved using graph algorithms). Since, it was conducted in online mode, I was asked to share my screen. I was free to use any local editor I wanted without using any previously written code. I used sublime text editor at that time. Overall interview lasted for around 1 hour and I was given a chance to ask any questions if I had any. I already prepared for 3-4 questions I wanted to ask and he was very polite in answering them.

Round 3 : Interview 2

This was also very similar interview as the first one except for there were no short questions like last round. Single graph related questions which I had to give algorithm as well as code. This round lasted for 1hr 10mins. This interviewer wasn't as friendly as the first one and he was very quiet compared to the first one. So I had to ask lot of questions as well as try speaking and commenting all the time while coding in order to keep him engaged with me. At the end I knew I could ask few questions to him so I took that opportunity and asked about himself and his role in the company even though it exceeded my original time limit of 1hour.

Round 4 : Interview 3 (Final)

Since, I couldn't talk about my project or internship or anything much on my resume in the past interviews, when I was asked about myself, I started talking about all the things I wanted to talk. I had extensively worked on Microsoft office tools in my previous internship which gave me huge advantage to keep the conversation going for long time. He was also eager to know more about my intern and projects. So naturally I assumed this would be getting to know about me round and no coding questions but I was wrong! He gave me one more question related to stacks after 30mins and now I had to solve it in half hour. Although I couldn't finish the coding part I explained him my approach and was able to complete 80% of the code. I guess commenting code on every line and explaining while writing the code must have

added to my good points and I was able to get through all interview rounds

Important Topics and Subtopics to Remember

DSA, OOP, DBMS are the only topics which could have question directly asked in interview

Sources of Preparation

DSA :
dsa learning series :
https://www.codechef.com/LEARNDSA/?itm_medium=navmenu&itm_campaign=learndsa
https://www.interviewbit.com/
Introduction to Algorithms (Thomas H. Cormen)
OOP:
Bits lecture slides are more than enough for oop concepts
DBMS:
https://www.geeksforgeeks.org/dbms/

Additional comments

There are 4 things which according to me must have helped me to give good impression to interviewer:
1. Constantly speak and keep asking questions for clarification
2. Solving problem is not as important as delivering the process of how you get there
3. Good typing speed creates a very good impression and also enables us to write commented code without losing much time
4. Being confident on the answer you are giving as well as clearly accepting the mistake you make during the interview

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

Software Development - Microsoft Mentorship Program – Engage 2020

Recruitment Procedure

Round 1 : MCQ bases questions for microsoft codess
Really easy mcq questions based on elementary level computer programming
Round 2 : The engage 2020 program. This involved two one-on-one interactions with a Microsoft mentor regarding our team/individual project. The project was implementing an AI algorithm.
In both the one on one interviews, since I had said I knew DSA he asked me DSA questions.
They were just generic questions about trees, linked lists, etc. He also asked me for proof of the hare tortoise algorithm.
Round 3 : Video call interview. 0.5 hours. She asked me the following question :
You are given an image in the form of a 2D matrix. Write an algorithm to compress the image size into a smaller one while retaining some of the information.
I answered and wrote the code. Then she asked to do the same for expanding the image. I didn't finish the code for this but she said its okay you got it.
Overall she was really nice and friendly but a little bit disinterested.

Important Topics and Subtopics to Remember

Elementary C and C++

Sources of Preparation

Demux academy course + leetcode questions they gave for homework

Additional comments

It is very important to have a positive attitude through out the process. The recruiters watch out for this.

Microsoft Corporation

WFH

IT

Stipend Offered: 80,000 per month

Software Development - Microsoft Mentorship Program – Engage 2020

Recruitment Procedure

Round 1 : Microsoft Codess
- MCQ test on DSA

After clearing the MCQ test we were a part of the Microsoft Codess Mentorship Program (Microsoft Engage 2020)
- Build a web application for a Tic Tac Toe Agent

Round 2 : Interview

1. The interviewer was very friendly. She asked me to introduce myself. Then she asked a couple of questions on the project we worked on during the mentorship program
2. Then she asked 1 DSA question. It was a simple Dynamic Programming question.

The interview lasted for about 30 minutes

Important Topics and Subtopics to Remember

Data Structures and Algorithms
- Dynamic Programming

Sources of Preparation

Geeks for geeks
Leetcode

Nvidia

WFH

Electronics

Stipend Offered: 50,000 per month

HW Summer Intern

Recruitment Procedure

Round 1: Online Test:
21 questions: 12 on Electronics, 8 on Aptitude, 1 programming problem
Electronics questions were all MCQ-type based on finite state machines and timing analysis and some combinatorial circuit questions. Some TRUE/FALSE type questions were on Computer Architecture. There was negative marking throughout the paper for all MCQs (exact marking scheme wasn't told).
Aptitude questions were mainly permutation-combination and simple probability based.
Programming problem: C, C++, Python and Java were allowed. A fairly-simple question which could optimally be solved using hash maps. Even a brute force solution using 3 nested for loops would also pass 70% test cases and there was partial marking for those.

Round 2: Technical Interview:
The interviewers were very friendly and helpful. They were very much interested in how I think of solving problems and not necessarily the solution itself. They told me to introduce myself and asked me about the project I was working on and the courses I had completed especially in the digital domain.
The online interview was held on CodePair (by HackerRank) which provides excellent functionality for video call with shared whiteboard and text editor. 3 long questions were asked and it was for a total of 45 minutes.
1st question was to develop a synchronous 3 bit counter with a select line using given 2 bit counters. The select line tells whether it should count only through even numbers-0-2-4-6 or only through odd numbers 1-3-5-7. (Ans: It requires one 2-bit counter and a 2x1 MUX)
2nd question was about adders. I had to develop the expression for a full adder. Using full adders, I had to make a logic block which calculates the number of 1's in a 7-bit input sequence. Question was to find the number of Full adders required and how to connect them (Ans: 3 full adders)
3rd question was an interesting puzzle. A castle is surrounded by a 10m wide moat. I had unlimited 9m long wooden planks. Find a way to cross the moat. You can't jump, swim, or float like a raft on the logs. Most importantly, you can't tie the logs.
In the end they wanted to know if I had any questions. They asked me about my future plans and what I expected from NVIDIA.
Overall it was a very enjoyable experience and the interviewers were extremely nice and helpful. They encouraged me to discuss the problems with them and often gave me hints whenever I was stuck.

Round 3: HR Interview:
There was supposed to be an HR round after this but it wasn't held for some reason. Students who

passed Stage 3 were directly given the offer.

Important Topics and Subtopics to Remember

Digital Design - Finite State Machines, Timing Analysis, Combinatorial Logic, stuck-at-faults, Verilog.
Computer Architecture - Basics of memory.
Computer Programming - Basic knowledge of C++ STL and data structures
Aptitude - Permutation and Combination, Probability

Sources of Preparation

Moris Mano, Interview material by Placement Unit, Digital Design class notes.
Static Timing Analysis and Interview videos on YouTube by ElectroTuts,
GeeksforGeeks for C++ STL.
Mock Tests (and solutions) provided by Placement Unit.

Additional comments

I cannot stress enough how important it is to keep talking to your interviewers throughout the interview. Keep suggesting answers and bouncing off ideas. Helps to know a bit about the company. Have a clear idea of what you want from the company and your future plans.

Nvidia

WFH

Electronics

Stipend Offered: 50,000 per month

HW Summer Intern

Recruitment Procedure

Round 1 : Online Test
This round had questions based on digital design , computer architecture , permutation combination / probability and one coding question.
Computer Architecture had relatively small weightage. Digital design questions were not very difficult they were based on the concepts taught in digital design course on campus. Permutation combination and probability questions were based on what is taught in school. Coding question was not based on DSA, it was more of a logical question , you should be very comfortable with any one of the programming languages for this question, my tip would be you should know how to use inbuilt functions for various purposes like sorting etc, it will save time.

Round 2: Technical Interview
They were very friendly during interview they started with asking about online sem and stuff. Then they went on to questions, which were purely based on digital design and some questions were sort of tricky. Digital design questions were again based on what is taught in digital design course I would highly recommend revising the course to solve these questions. Tricky questions were like there is a bridge and there are four people you need to make them cross the bridge in minimum time given that only two can cross at a time and there is a torch without which they cant cross, now every person had a different speed of crossing the bridge. So I would recommend you not to be scared when you first see them just be calm and say whatever you think is the best solution they also gave me hints when my solution was not optimal. They also asked a random question which was how many people on the planet would have same number of hair on their head excluding the ones that are bald.

Important Topics and Subtopics to Remember

Digital Design (for both round 1 and round 2) , permutation combination and probability(for round 1), coding in any one language(for round 1)

Sources of Preparation

For digital design, course taught on campus is good enough. For permutation combination refer to your school notes. For coding just learn any one programming language. For computer architecture you can go through this
https://www.youtube.com/watch?v=zLP_X4wyHbY&list=PL5PHm2jkkXmi5CxxI7b3JCL1TWybTDtKq
although it is not necessary in my opinion as the weightage was low and watching this in short time can be difficult.

Nvidia

WFH

Electronics

Stipend Offered: 50,000 per month

HW Summer Intern

Recruitment Procedure

Round 1: written test
it had 4 parts
1st part : it had around 15 MCQ questions from digital design course.
2nd part: mental ability questions
3rd part : coding test- a simple logical coding question was given in which we had to write a sub routine to run the test cases. This question could be attempted in any programming language of your choice.
4th part : computer architecture- there were fill in the blanks questions from the basic concepts.
Round 2: technical interview-I had two interviewers. the overall experience was nice. whenever i was getting stuck they asked me about what knowledge i had regarding this and helped me out finding the solution. it is very important to keep talking to the interviewer and tell him the approach you are taking towards the question..
they asked me 3 questions
1st question was from the written round and the asked the logic i used to solve that question. the question was on topic register file.
2nd was a mental ability question - there are 9 coins and a weighing machine. Out of these coins 1 is lighter how will i find out the lighter coin in shortest possible way.
https://en.wikipedia.org/wiki/Balance_puzzle
in this link read the subtopic nine coin problem.
3rd question : find the logic expression with out using k-maps for 1-32.then they cross questioned my concepts regarding this.

I started preparing for this during summer breaks along with my PS-1. i would advice you to solve some questions from each topic as it will give u some practice before exam. Instead of trying to reach the final answer directly look at the concepts used in the question. Try to divide your time very efficiently during the exam and visit every section before starting the test. Feel free to contact me anytime for any queries. All The Best!!

Important Topics and Subtopics to Remember

CDC that are important for this company were Digital Design, Computer Prgramming and some basic concepts of Computer Architecture.

Sources of Preparation

digital design :I used the textbook Morris Mano and did Verilog practice
computer programming : some basic codes from geeks for geeks
Computer Architecture: I didn't prepare for this part as I had no idea this section was also there in written part.
Along with this I used the material provided by PU to practice. I studied every concept in detail that was covered in question bank.

Nvidia

WFH

IT

Stipend Offered: 50,000 per month

Software Summer Intern

Recruitment Procedure

Round 1: Resume Shortlisting. CG was the only criteria. 8 cutoff.

Round 2: Online round. 2 parts- coding and MCQ.
Coding question was very easy, could be solved in 5 minutes.
20 MCQs- 10 were output based C/C++ questions. Basic CP & programming knowledge is enough. 10 were logic and probability questions.

Round 3: Interview. 8 students were selected for the interview. It went on for 1 hour. More resume based, not very DSA intensive.

Question: Find the first non-repeating character in a string.
Solution- Solved using maps and two traversals.
Interviewers then asked in detail about every line of my code and my approach. Asked me to explain "using namepace std;" , and its effect on size of executable.
Then modified the question, added constraints. Told me to solve it in only one traversal.
I solved it by using traversal from the last character, they were happy with my approach.

Question: Explain Bayes Theorem. Give examples.
Solution: I had written Probability&Statistics and Mathematical&Statistical Methods as subjects on my resume. The interviewer said he noticed it and wanted to test me on it. I derived the Bayes theorem using my intuition and explained well.

Question: Explain one of my projects, which was a research paper on autoencoders (machine learning)
Solution: I was very thorough with my project. They asked me in detail, about every aspect of the project, my contribution, and autoencoders. Asked application based theory about the topic to test if i had actually worked on the project.

After this, the usual "Any Questions for us?". I asked about their work, and if they actually got to work on all the cool NVIDIA chips etc, especially the one which was released 2 days before my interview.

They were satisfied with my interview. Told me i might have an HR round , and this was the last technical round.

Did not have an HR round. directly got a call saying i was selected.

3 out of 8 students who were interviewed got the offer.

Important Topics and Subtopics to Remember

DSA (strings, maps), Know your resume well

Sources of Preparation

Interviewbit

Additional comments

NVIDIA values a Machine Learning background, especially in Computer Vision related fields- as they are actively working in Deep Learning and similar domains.

Nvidia

WFH

IT

Stipend Offered: 50,000 per month

Software Summer Intern

Recruitment Procedure

Round 1: Coding Test (1 hour):
There were 3 sections: (1-hour total time)
Coding MCQs - there were around 10 MCQs which were based on the basics of coding and C language. Questions like bitwise operator and string lengths.
Math MCQs - these were pretty easy, with ample time to solve them. They involved very basic concepts of math, which everyone knows.
1 Coding Question - A simple array question that had to check if the element in the array is equal to x and if it is then multiply it by 2. Find the maximum x.
Solution: Sort the array and traverse normally and double if match found.

Round 2: Technical Interview (1 hour): (8 were selected from about 200)
The interviewers were quite friendly and helped out with hints whenever I needed them. All we have to do is voice out our thinking process, and they even help when you're wrong and going off-track. They had my resume open and were asking me questions from there.
They asked about each of my projects and what I had done in them. (In case you have done a lot of projects, then they may ask you to choose one and they may grill you about that)
We started with a very basic question - A linked list with each of its nodes having 1 or 0. Convert this binary number into a decimal number.
Solution: 1. One pass to find the length, then multiply by 2^(n-1) at the start and keep dividing by 2. (This needed 2 passes, so they asked about how to do it 1)
2. In one pass, let ans = 0. With each node, you do ans *= 2. If the next node is a 1, you add a 1 to the ans.
There was a C question - on calloc and what it returned, and addition of hex numbers and char **p. (Calloc returns address, which was stored in p and then pointer addition ensues, with p+= 100 depending on the type of the pointer. Mine was typecasted to long, so +=800)
The last question was based on strings. We had to reverse the words in the string. (Example: Hello World. --> World. Hello)
Solution: Reverse the string and then iterate till a space, and reverse the word. (In-place)
Or Iterate the string to find a word and then append at the end (Make sure to not use extra memory - use substr and then concat)
At the end, they asked if I had any questions for them. Prepare a couple questions for them, regarding what the job will entail, what is to be done - this shows interest and some confidence. All in all, be confident about your answers, say you don't know if you are unsure, they will help you. Be friendly towards them and talk politely.

There was supposed to be an HR round, but they didn't take one.

They selected 3 amongst the 8 people.

Important Topics and Subtopics to Remember

Data Structures and Algorithms, Computer Programming (C)

Sources of Preparation

Demux Academy, GeeksForGeeks, InterviewBit, LeetCode

Additional comments

Know the basics of C and any one other language you prefer - C++, Java or Python.
Also know how the process works internally (Memory allocation and wait processes)

Oracle Corporation

WFH

IT

Stipend Offered: 50,000 per month

Project Intern - Applications Engineer

Recruitment Procedure

Round 1:
The interviewer began by asking about myself and about my projects. I talked a fair bit about my projects and after that he went on to technical questions. It was fairly basic. 1st question was to write a program to reverse a string. And then he aaked me about the data structures I knew and asked some of its real world applications. Then he asked me a puzzle question that was to find the correct labels of boxes of the boxes are incorrectly labeled.
https://www.geeksforgeeks.org/gate-gate-cs-2017-set-2-question-7/
After this he went on to ask about Oop questions and asked about inheritance, types of inheritance, difference between overloading and overriding etc. Then he asked about try catch in java and a few more questions on try catch. It was almost an hour and he stopped it here.
Round 2:
The interviewer asked about my projects and I talked extensively about them. I even screenshared and showed him a website I was working on and he was impressed. The he asked me to write a program to reverse every word in a string which I was able to do. After this, he asked me extensively about DBMS. He asked me about concurrency control and how I dealt with it in my project. But unfortunately I hadn't dealt with it :). He asked me what I could do to deal with them and some more questions about DBMS.
Round 3:
Round 3 was short and was less than 30 minutes. He asked mainly about DBMS. He asked me how I would combine 2 tables in a query and syntax of joins. And the he asked about normalisation and asked me to explain normalisation at each level. After that he asked me if I was interested in a job or MS after college and my reasons for it. Then he asked my why oracle? The interview ended by him talking a but more about oracle and the work they do.
HR round:
It was very short. The interviewer just asked me about how my interviews went and and a little bit about myself.then she asked me if I had any questions. The interview only took about 10 minutes.

Important Topics and Subtopics to Remember

One tip I would say is to clearly say how good or not good you are at something mentioned in your resume. Do not exaggerate. For my previous interview I had talked about areas I was not that good at and then could not answer the follow up questions when asked. It left a bad impression on the interviewer.

Sources of Preparation

Form leetcode, gfg and interview bit mainly

Additional comments

I had done a fair number of projects and it played a big role in giving the interviewer a good impression and took a big chunk of time of the interview.

Oracle Corporation

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Stipend Offered: 50,000 per month

Project Intern - Applications Engineer

Recruitment Procedure

Round 1: Coding test
The test was online and was 107 minutes long. It had sub sections and you could take a break between them. The questions were mostly puzzles and in mcq format. They were designed to test aptitude. Knowledge of Databases and DSA was required for few questions.

Round 2a: Technical Interview
The interview was friendly and asked me to elaborate on some of my past projects(I explained the CSA app and it's working). Then he gave me some scenarios(ways of fetching data from server) and asked me changes that should be done on the app. After that he asked me how to find a substring in a circular string in O(1) space (https://cs.stackexchange.com/questions/42609/algorithm-to-search-substring-in-a-circular-string) and then he asked me given a string, how to arrange it alphabetically (https://www.geeksforgeeks.org/sort-string-characters/). Only pseudo code and he asked about time and storage complexity while solving.

Round 2b: Technical Interview
The interview was friendly and asked me about my previous round. Then he asked me the 3L, 5L jug puzzle. After that he asked me few permutation and combination questions and then asked whether I would be comfortable to write DBMS queries(To which I replied No)

Round 3: Technical +HR
I was asked a few questions about the compiler, interpreter, basic OOP concepts, and few c++ questions(like what does include mean, scope of a variable, etc). Then I was asked about my PS1 project(which was on Genetic Algorithms) and then I was asked being a mechanical undergraduate, what inspires me to work in IT. After that I was asked about CS courses I've taken from campus.

Important Topics and Subtopics to Remember

OOP, C++/Java,DBMS.

Sources of Preparation

Geeks for Geeks and Interviewbit. Would highly recommend to stick to a plan while preparing for DSA.

Additional comments

Try participating in at least Codeforces contests as they have a good collection of problems. Try going through the Geeks for geeks archives of companies for questions and puzzles.

Oracle Corporation

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IT

Stipend Offered: 50,000 per month

Project Intern - Server Technology

Recruitment Procedure

Round 1: Technical Interview
The first thing interviewer asked me to do was introduce myself. Then he asked me what programming languages I was comfortable with; some questions from C++ and Python, OOP concepts and questions from my resume were asked.
Question 1: Explain the concept of OOP. Also explain OOP in C++.
Question 2: What is Encapsulation?
Question 3: What is polymorphism? What are the two types of polymorphism?
Question 4: Explain classes in C++.
Question 5: Questions were asked from my resume. This went on for about 15 minutes. I was asked to elaborate about my projects. Since most of my projects were on python, questions were asked on Python.
Question 6: What is __init__? It's use in python.
Question 7: What are lambda functions?
Question 8: Major differences between C++ and Python
Question 9: A coding question- Find the second largest element of an array.
https://www.geeksforgeeks.org/find-second-largest-element-array/
I had to code a working program. He gave me some test cases to run on the program.
Then he asked me if I had any questions for him and the interview was over.

Round 2: Technical Interview
The first thing interviewer asked was how was my previous interview. Then he asked me questions from C++ and Java, OOP concepts and DSA.
Question 1: Explain the concept of inheritance in OOP.
Question 2: What are constructors and destructors? Their working and use.
Question 3: Garbage collectors in Java.
Question 4: Explain exception handling.
Question 5: Write a pseudocode on how to find duplicates in a singly-linked list without using any other data structure like map.
Question 6: Explain the concept of Binary search tree to class 10th student.
Question 7: How to increase the speed of results obtained on a site like Flipkart?
Question 8: What is caching?
Question 9: Some basic questions about JavaScript and its use.
Question 10: What is normalization? Explain where normalization should not be used.
Question 11: How does Database companies like Oracle backup their data?
Then he asked me given a choice which domain would I like to work in, to which I said I would want to contribute in their cloud database projects. He then asked two questions.

Question 12: What is the difference between IaaS, PaaS and SaaS?
Question 13: Give two reasons why users would want to switch to cloud.
Then he asked me if I had any questions for him and the interview was over.

Important Topics and Subtopics to Remember

DSA: Both conceptually and implementation , OOP
Very little DBMS and OS,
Your Projects- They will thoroughly test your knowledge about the work you have mentioned in your resume.

Sources of Preparation

Revised OOP from Geeksforgeeks, Leetcode for coding questions, codeforces contests.

Additional comments

Anything you mention during the interview will be asked upon in detail.
Please be well prepared about the basic concepts and have a good understanding about your projects.
Also having a little knowledge about the profile I was applying to helped a lot in the interview.

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Project Intern - Server Technology

Recruitment Procedure

Round 1: Coding Test

* 107-minute test. All MCQs (no negative marking).
* The test consisted of many sections and each section has subsections that had a fixed amount of time for attempting.
* It had questions from Aptitude, DSA Concepts (mainly AVL trees, Binary Search Tree, Flow chart completion), CS subjects theory from OS, DBMS, OOP's. And some English based aptitude and reasoning.
* Overall not a very difficult test if you are good with fundamentals of DSA. The questions tested your speed more.

Round 2: Technical Interview 1

* The interviewer was very friendly and asked me to introduce myself.
As a non-CS student, this is a good opportunity for you to tell all the projects/achievements you have in the CS domain. Having a good story about yourself really helps and it shows the interviewer that you are genuinely interested.

* He started off by asking questions from various aspects of Computer Science, such as OOPs, Computer Networks, OS and some basic Linux questions.
I also told my interviewer that I was from electronics and therefore might not know the complete theory of all the CS subjects. He then told me that you can tell me whatever you know. After that, he was quite satisfied with my answers.
Some questions asked were:
- Explain the different principles of OOPs.
- What are subnets? This followed up with some basic questions on networking.
- What is the top command in Linux used for?

* He then started with the DSA part. First, he just asked basics of DSA and then the time complexities(TC) of various operations on different data structures.
Some questions asked were:
- What is the TC of searching in hashmap?
- What is a collision in hashmap? How do you minimise them?
- What is the TC of insertion in Linked list?
* Then he started with coding questions.
The questions asked were:

- Detecting a loop in a linked list. He had asked me to code this one completely.
- Finding the number of elements in that loop in a linked list. He had told to just explain the approach for this question.
* That was the end of the first interview. Overall, it wasn't that tough if your concepts of DSA are good.

Round 3: HR + Technical interview
* The interviewer was a very senior person.
* Again, first he asked me to introduce myself.
* Then he asked some basic HR questions, like, 'Where do you see yourself in next 5 years?'
* Then he moved to coding question. This was very easy. He had just asked me to code any sorting algorithm.

At the end of both the interviews, I was given time to ask the interviewer a few questions.

Important Topics and Subtopics to Remember

- Should have good knowledge of DSA mainly
- It is better to have atleast basic knowledge of OOPs, OS, DBMS and Computer Networks.
- For the coding test, be sure to prepare Trees thoroughly as many questions were asked just from AVL trees and BSTs.

Sources of Preparation

* For a non-CS student, you can learn DSA by following any playlist on Youtube.
* InterviewBit for practicing questions - https://www.interviewbit.com/practice/
* GeeksForGeeks(https://www.geeksforgeeks.org/) for last minute revision and company archives.

Additional comments

* This is mainly for a non-CS student:
Before your interview, spend some time preparing a good introduction about yourself. This will be asked in all the interviews and if you have prepared it, you will basically have a good start to your interview. Your introduction should be like a great story about yourself where you tell about your projects/achievements you have in the CS domain. Having a good story about yourself really helps and it shows the interviewer that you are genuinely interested even though you are from a non-CS background.

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Project Intern - Server Technology

Recruitment Procedure

Round 1: Aptitude Test:
This round consisted of only MCQs. There were 5-6 sections, such as Logical Reasoning, Basic Math, English, Software Engineering Concepts and DSA (most questions were on implementation of trees). Each section had to be completed in a fixed amount of time.

Round 2: Technical Interview:
This round began with the interviewer asking me questions about my favourite subjects in computer science.
The next few questions were about a project I had done as a part of the Microprocessor Programming and Interfacing course, which I had mentioned in my CV. The interviewer asked me about the components I had used, how interrupts worked and the differences between hardware and software interrupts. He then asked me a couple of questions about system calls, user space and kernel space in Linux.
The interviewer then asked me to write a program to add two polynomials, given the coefficients and power of each term. To implement this, I used a linked list.
This interview lasted for about 40 minutes.

Round 3: HR + Technical Interview:
The interviewer asked me to introduce myself and asked me where I see myself in five years. He asked me what topics I liked in DSA and what its applications were.
The interviewer then asked me to write a program to add and delete elements from a linked list, given either the position or the value of the element.
He then asked me a puzzle question: given containers of different sizes, how can you divide a bowl of soup so as to satisfy two children? The interviewer was testing me to see what clarifications I would about the question, such as what "satisfy" meant.
At the end, the interviewer asked me if I had any questions about the company or the internship program.
This interview lasted for about 35 minutes.

Important Topics and Subtopics to Remember

DSA: be thorough with the basics, such as implementation of trees and linked lists
OOP
Logical reasoning
Basic math concepts (such as probability)

Sources of Preparation

DSA: Introduction to Algorithms (CLRS), InterviewBit, GeeksforGeeks
OOP: Slides from the OOP course offered on campus, GeeksforGeeks

Additional comments

Be thorough with whatever you have mentioned in your CV.

Oracle Corporation

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Stipend Offered: 50,000 per month

Project Intern - Server Technology

Recruitment Procedure

Round 0 : Online Assessment

There were 4 sections and about 10-15 questions in each section.
Total time available was around 100 mins for all the sections. The constraint was that each section had multiple sub sections and each of these sub-sections had a fixed time limit for that particular section and any saved time in one section would not carry over for other sections.
The sections that were present were:

1. English Comprehension - Basic BITSAT Level English questions. Easiest section. Try to score full in this.
2. Logical and Aptitude - Logical and Reasoning based questions. Not too difficult.
3. CS Fundamentals OOP DBMS - Core CS concepts related to Object Oriented Programming and Database Systems.
4. Predicting Output type - Another CS based section, where for example you'd be given an AVL Tree and you'll have multiple questions based on that.

Round 1 : Technical Interview 1

Started off with basic introduction. Then he moved on to the questions. The interviewer shared a coderpad link and I had to code on that. I chose to code all my questions in C++.
For the first two questions, he only asked for the pseudo code. For the 3rd question, he asked me to compile it and show him the output on coderpad.
Questions

1. You are given an array. All the elements are present twice except one. Find this non duplicate number.

a = [2,3,4,5,4,5,2], output should be 3
Approach : Naïve approach is to store the frequency of every element in a map. And then just see which element has count 1. Told him this first. He said ok and asked me to optimise.
Improved approach: XOR all the elements of the array. Now because every element occurs twice except one, they will all cancel because x^x=0. The answer at the end is our unique element.
Problem Link -https://leetcode.com/problems/single-number/

2. Follow up to previous question. Now there are 2 elements which occur only once. Find the 2 non duplicate elements in the array

a = [2,3,4,5,6,3,4,2,5,9], output should be 6 and 9.

Same way, XOR every element. Now there are two elements left so our answer is a^b.
To separate these we find the least bit where they differ, say 3rd bit. Now for every element of the array, if 3rd bit is 0 put it one set and if 3rd bit is 1 put it in another set. Now XOR the elements of these 2 sets.
The answer we have remaining are the two elements, one in each set.
Problem Link - https://leetcode.com/problems/single-number-iii/

3. Merge two sorted arrays efficiently. Given that one array has enough space to store the element at the end of the array.
a = [2,3,4]
b = [4,5,6]
output should be a = [2,3,4,4,5,6]
Approach : Keep two pointers one at end of each array. Keep a 3rd pointer k at (len(a)+len(b)-1)th position. Now at every step compare A[i] and B[j] and place larger one at A[k].
Keep doing this till you exhaust both arrays.
Finally the array A will contain our merged sorted array.
Problem Link - https://leetcode.com/problems/merge-sorted-array/

After this the interviewer asked me if I have any questions for him. I asked him about how work is going on in Oracle during the Covid situation and the different projects.

Round 2 : Technical Interview 2
Started again with basic introduction. He asked me how the process was going on till now.(Basic formalities only). After this we moved to the questions.

This interview was more conversational in nature. He started off with DBMS and asked me questions on that. Then he moved on to OOP questions. He also looked at my resume and asked me questions based on what I had written on my resume.
I've tried to articulate all the questions as far as I can remember.
The answers to all these questions are just a Google search away. Most of these topics have articles on GeeksForGeeks(GFG) and going through them would help.

1. He asked me about my knowledge in OOP and asked which language I'm comfortable in. I chose C++ and answered the OOP questions in that context.
2. What is normalization? Explain different types of normalization 1NF 2NF 3NF
3. Why normalization? What are disadvantages of normalization?
4. ACID Properties in database
5. What is foreign key?
6. Suppose I have a foreign key relationship between an Employee and Department Table, and I want to delete the Dept table fully but not delete the foreign key values from main table. How to do?
7. NULL ptr. What happens if you print the null ptr. What is NULL Ptr stored as in memory.
8. \0 what is the character, where is it used?
9. What is constructor and destructor? Explain its functions.

10. How to free memory? What is the difference between free and delete
11. Explain machine learning and deep learning to a 10th grade kid.(without fancy jargon and stuff). He wanted to see if you actually know the motivations and concepts of machine learning and deep learning.
12. Give a use case for machine learning and deep learning and the differences between the two.
13. If you could choose any one project in any field and any resources what would you choose? Explain what you would do.
This question is not a purely technical question. This is more behavioural than technical. The interviewer wants to see if you can come up with a project that has social impact and is relevant. (maybe bonus points if you know of some tool or service the company has which would help in your project xD)
14. Explain your project on your resume.
15. How was the interview process till now? Do you have any feedback?
16. He asked if I have any questions for him. I asked about his team and how the Cloud team works and different projects for the interns.

I had only 2 rounds of interviews. Some people had a 3rd round. They were asked some logical puzzles in this round and some more questions related to OOP and DBMS. For the logical puzzles, you can prepare from the Puzzles section in GFG.

I don't know what is the criteria for people getting 2 or 3 interviews.
So don't get dejected if you're not called for the 3rd round on the interview day. You may already be selected :)

Important Topics and Subtopics to Remember

For DSA, Trees, Graphs, Arrays are very important
Revise OOP and DBMS Concepts.
DBMS is especially important for Oracle and they tend to focus on it.

Sources of Preparation

Leetcode and InterviewBit for DSA
GeeksForGeeks for OOP and DBMS
Sanchit Jain Lectures on YouTube for DBMS(if you have time)

Oracle Corporation

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Stipend Offered: 50,000 per month

Project Intern - Server Technology

Recruitment Procedure

Round 1 (Online test):
This isn't the usual coding test where you have to solve 2 or more dsa questions. Oracle's online test checks your understanding of comp. science concepts. This round had different sections for different cs subjects like dsa, oop, dbms,also English and logical thinking, with around 90 MCQs in 120 mins. yeah BITSAT vibes ;).

Round 2 (Technical interview):
This was a short interview compared to other companies' tech rounds. Interviewer asked to explain OOP concepts like polymorphism, encapsulation etc for first 10 minutes. Later he asked only one dsa question i.e., Given an array of n integers find kth largest integer (with better complexity than O(nlogn). Even though it's a simple question to code he asked me about various methods to go about it and their complexities. I gave him 3 methods (heap, bucket sort, quick select). He asked me to code any one of the approaches. Finally he asked if I had any questions for him. It's also important to show them that you're interested in the role, so I asked him about the projects he's working on and we chatted about it for 5 mins.

Round 3 (Tech + HR round):
This is also a short round(30 mins). The interview asked about myself and my interests for the first 10 mins. Then he asked about everything I mentioned in my resume and started asking very industry related questions about my projects, like how would you deploy it? How do you maintain heavy traffic on it? How do you ensure safety? So you should really know about whatever you put on your resume. I gave some decent answers but it's kinda vague too. He said he satisfied with my answers. He also asked why I didn't had any data science projects and I explained him how I'm exploring that in 3rd year by taking electives. Finally he asked some simple time complexity questions and ended there.

Important Topics and Subtopics to Remember

Prepare DSA questions as this is what 80% of the interviews are about. But sometimes that 20% decides the final result (Failed 3 interviews coz if this :)). So be thorough with cs CDCs as well (DBMS, OOP etc).

Sources of Preparation

Leetcode and interviewbit for practicing.
GFG for articles and company wise questions.

Additional comments

Working hard in summer vacay is enough for cracking internship. Good luck.

Oracle Corporation

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Stipend Offered: 50,000 per month

Project Intern - Applications Engineer

Recruitment Procedure

Round 1: Online test
Online test with both aptitude and coding based MCQ questions. There were no competitive coding type questions. Each section had a stipulated time and had to be finished within that time limit. These ranged from 5 minutes to 12-13 minutes. There were some reading comprehension based questions, while some tested logic and arithmetic. In the coding section, the majority of the questions were based on AVL trees and some variations of Binary Trees and there were a couple of questions on basic DBMS (ACID properties and such)

Round 2: Technical Interview
The interviewer was very friendly and easy to speak to. This round mostly consisted of a couple of basic DSA questions and 2 puzzles. This interview lasted approximately 20 minutes.

DSA
Question 1:
Given an array place all the odd numbers at odd indices and even numbers at even indices
Initially, I gave a merge sort based approach but she told me to try it in-place and without using extra space after which I gave an approach similar to this
https://www.geeksforgeeks.org/even-numbers-even-index-odd-numbers-odd-index/

Question 2:
Initially, this question was framed as the standard 2 sum problem but she kept modifying the constraints and I kept presenting different solutions.

Vanilla 2-sum:
https://www.geeksforgeeks.org/given-an-array-a-and-a-number-x-check-for-pair-in-a-with-sum-as-x/

I gave the standard hashmap solution after which she asked me to do it without using extra space. At this point, I gave the other well-known solution to the 2 sum problem, the sorting + 2 pointer approach (Can also be found on the aforementioned GFG page)

After this, she asked me what I would modify if the array was already sorted but also rotated. I said that we could reuse the 2 pointer logic however we would need to use some modulo arithmetic. She asked me to dry run a few corner cases and was satisfied.

Puzzles

I was asked a variant of this puzzle: https://www.geeksforgeeks.org/puzzle-8-balls-problem/

The second puzzle was much simpler, the statement goes something like this
There are 11 players in a dressing room with jersey numbers 1 to 11. 10 leave the dressing room, find the missing player.
The answer is simply to add the jersey number as a player leaves and subtract it from 55 to get the missing jersey number. She then asked me to extend this to N players which is pretty straightforward as well.

She asked me no further questions (There were no OOP or DBMS questions in this round for me but some of the other aspirants were asked a small amount)

After this, she asked me a couple of personal questions like what was my favourite subdomain of Computer Science and if I was interested in pursuing further education after college (I answered not immediately at least..). However, I got the feeling that she asked these questions in a completely informal capacity as neither she nor any further interviewers asked me to elaborate on these points.

Round 3: Technical Interview + Partial HR
This was probably the longest interview I had in the entire process and lasted for around 45 minutes. This interviewer was also very friendly and the conversation continued very naturally. I had put NLP as one of the interests on my resume, so he asked me a couple of basic questions related to NLP which I answered. He then asked me which libraries I used for handling data and quizzed me on the underlying databases used there, which I was not able to answer satisfactorily.

DSA
Question 1:
He then gave me the following problem, given a list and a dictionary, how would you check if the words in the list are present in the dictionary. This was a trivial question, but after coding it he asked me in-depth questions about the C++ STL containers that I had used, like vectors and sets (time complexity for inserts and deletes, underlying structure, use cases etc.)

Question 2:
After this, he asked me a problem related to 2 pointers and he was satisfied with my approach, I was not asked to code this. He then moved on to OOP.

OOP
He started off with some basic OOP and then asked me the 4 main concepts of OOP. After this, he asked me to explain inheritance and asked a few examples like which methods would be called etc.

Puzzles
I was asked 2 puzzles in this round as well.
The first puzzle was easy if a frog jumps up 3 metres and slides down 2 metres how long would it take to climb a 30-metre pole.

The second puzzle was slightly more involved. Given a 5 litre jug of water and a 3-litre jug of water, transfer water such that one jug ends up with 4 litres of water. Then he asked me to generalise this to any values. This was the end of Round 3.

Round 4: Technical Interview
This was the final interview and was relatively short around 15 minutes. No coding questions were asked in this round. I was mostly asked Database questions and a small amount of OOP

OOP
He asked me to explain the difference between runtime polymorphism and compile-time polymorphism. After I answered he asked me a few more questions on overloaded functions and constructors.

Database
This round focused heavily on databases, which is no surprise as Oracle is a database company. I personally think DBMS was my weakest subject and I could have done better in this round with appropriate preparation. He started off with some basic SQL commands and their uses. After this, he asked me the difference between SQL and NoSQL databases (A lot of interviewees were asked this question). He continued by asking me the ACID properties of databases, differences between inner and outer joins, and database transactions. I was not able to answer these last couple of questions satisfactorily and seeing this he ended the interview shortly after.

Important Topics and Subtopics to Remember

DSA (obviously)
OOP
DBMS (Oracle specifically asks more database questions as compared to other companies)

Sources of Preparation

Interviewbit (the bare minimum)
Geeks for Geeks (OOP and DBMS especially)
GFG archives (for company-specific prep)
Leetcode (If time permits)
Cormen (DSA course textbook)
HackerEarth (some topics are better explained there)

Documents provided by PU are also helpful

Additional comments

Since there is no coding round, preparing the theory for some data structures not seen often in coding rounds like AVL trees will give you an advantage in round 1

Unlike some other companies which had purely coding based interviews, all the interviewees were

questioned about stuff they put on their resumes. DO NOT put things that you only have vague ideas about on the resume (for Oracle at least).

In my personal experience (SI for 2020) Oracle did ask quite a few database questions so it would be prudent to prepare at least a tiny amount before heading into the interview rounds.

Lastly, Oracle does ask a lot of puzzles. I was asked a total of 4 in 3 rounds. Browsing the puzzles section on Interviewbit will help you out here, though it should not be your primary focus.

Philips

WFH

IT

Stipend Offered: 40,000 per month

Research Intern

Recruitment Procedure

Round 1: Resume Shortlisting
No specific criteria were mentioned for shortlisting, but the job description said that they had requirements for internship positions from BE/B.Tech, ME/M.Tech and Ph.D. students from computer science or electrical engineering departments with CGPA >7.5 for the duration of two to six months. With expected skill-sets:
1. Signal, Image Processing and Machine Learning
2. Data Analytics

Round 2: Online Test
The test had 4 sections. All the sections were allotted fixed time. The sections were based on Probability and Statistics, Data Analysis, Signal and Image Processing, Machine Learning, and a section on mental ability but I am not sure if that was there. All the sections had only MCQs.

Round 3: Technical Interview
This was an online interview.
The interviewer first asked me to introduce myself. Then he started with the questions.

First question, He asked me to write a code or explain the logic of the following question.
Find the number of different sequences of a given length that are possible using some alphabets (for eg. a,b,c) where we can use each of the given alphabets at most a fixed number of times in a sequence.

The second question was based on Probability. He asked me to explain the difference between probability and likelihood.

Then, the interviewer asked me to describe in brief the project that I did during my PS1, and asked some questions related to the project. It was a Deep Learning based project so he asked some questions related to that also.
The interview lasted for 30 minutes.

Round 4: HR Interview
This was also an Online interview.
The interviewer asked me to introduce myself. Then she asked me the following questions.
1) Why would you like to join Philips?
2) Why did you choose to pursue EEE at BITS Goa?

3) What skill-sets do you have to work for this role?
Then she asked me a couple of questions about my family. (number of family members, occupation etc).
This rounded lasted for 10-15 minutes.

Important Topics and Subtopics to Remember

Probability and Statistics
Image Processing
Machine Learning
Signal Processing
Statistical Data Analysis (Mean, Median, Mode, Distributions, Graphs etc)
Python/C++

Sources of Preparation

For probability and statistics revising all the topics from the first year materials will be helpful. Hypothesis Testing, Distributions and their properties, statistical analysis, Chi-Squared Tests, p-value etc are some of the topics that I remember were there in the test.
Signals and Systems- CDC
Image Processing- Digital Image Processing Course (On-Campus).
Machine Learning- On-campus course, online articles.
For Data Analysis, Python, C++: many online resources are available. Taking Udemy or Coursera courses can be helpful for the preparation.

Additional comments

Try doing a project related to machine learning/deep learning either as a part of PS1 or as a personal project.

PhonePe

WFH

IT

Stipend Offered: 50,000 per month

SDE Intern

Recruitment Procedure

I was shortlisted to the coding round along with 4 others, there were 2 technical rounds.
Technical Round-1: Pure DSA related coding round, lasted around 1hr 20 mins, had to give the optimised algorithm and explain it.

Question 1: Given an array of numbers, the numbers of the array whose left adjacent number is smaller than the number are removed from the array and this process continues on until no further modifications can be made. Find after how many iterations the array will reach its final state.
eg - arr[ ] = { 5,3,7,2,9,8,10,4}
After iteration 1: {5,3,2,8,4}
After iteration 2:{5,3,2,4}
After iteration 3:{5,3,2}
Answer = 3

Solution: Think of a solution using stacks, and maintain the elements in the stacks in a specific order

Question 2: Given an array of 'n+1' numbers, the numbers can be from 1 to n (both inclusive), return any of the duplicated number in the array.
Solution : I had to provide a step by step solution, starting from
i) O(nlogn) time complexity with O(1) space complexity
ii) O(n) time and O(n) space
iii) O(n) time complexity with O(1) space Hint:{Think of modifying the original array and making use of the property that any number can only be from 1 to n)

Question 3: Given 2 arrays of size m and n, and are placed one below the other, we can make connections(Draw Lines) if same number exists in both the arrays, also, there can only be 1 line drawn from any integer in the array and no 2 lines can intersect each other. Find max no of connections(Lines that can be drawn)
eg - arr1 = {1,2,3,5,6,7}
arr2 = {1,3,5,7} Output = 4, we can make connections from 1 to 1, 3 to 3, 5 to 5 and 7 to 7, which is the max number of connections possible

Solution: It's a DP solution, I initially could not think of the optimal solution, the interviewer helped me with the initial recurrence equation and asked me to code the whole solution, Hint : [2 cases, if the value is same at the same index in both the arrays or not, if same, make connection and find the max no.of connections in the previous part of the arrays, if not, dp[i][j] = max(Previous possible combinations)

Question 4: We want to read certain books, we can read only 1 book on one day,we are given an array denoting the book to read on the i'th day, every book has a weight associated with it. Now, the books are arranged on top of each other and to access a particular book we need to pick up all the books on top of it and remove that book and after reading that book we put that book on the top(Not it's original position in the beginning). Find the optimal initial arrangement of the books such that we need to pick up the least possible weight to read the specified books.

Solution: It's a greedy trick question, after some intuition and observation, we can notice that the most optimal arrangement must be the same as the order of the books we are supposed to read. I was lucky enough to spot this pattern using some trial and error and quick thinking

All in all, a long and tiring interview and I was selected as one of the 2 students for round 2.

Technical Round-2: This was a very open round, It was taken by the Hiring Manager. It lasted for 1 hour and was full of extremely technical real life questions and situations. Interviewer insisted on providing very fine and minute details of everything. He discussed my projects with me and asked in depth questions regarding how it was implemented, questions regarding the technologies used, languages used, concepts used...
He also asked questions regarding system design, and algorithm design for real world problems, example :
1.How would you implement tinyurl system and how would you make it efficient
2. If you have to implement a recommendation feature for YouTube, how would you design it and what way would you store results, which data structures might be useful, what problems you may possibly face
3. If you were to implement the internet for the first time, how would you allocate resources, web domains, what will happen if someone types an url, how will data be sent to the user, how servers are implemented for the same

I was also asked a lot of questions regarding networking(I told him I have not completed this course yet), Once again questions based on real life scenarios.
1. What is the use of ISP, what does exactly happens through the use of ISP
2.How data is stored, and how specific requests for data on a website is made, very detailed explanation was asked
3. How do we receive customised ads, even when our apps and websites may not be linked to each other, even if there isn't a record of a browsing history to share..

Basically, an extremely tiring round where he did not give me a lot of hints or anything, I had to come up with all the solution(I kept guessing that it WOULD BE like this whenever I didn't know the answer for sure)

Important Topics and Subtopics to Remember

DSA(for obvious reasons)
Knowledge of OOPs
General system design questions for technical rounds
DSA-{Questions on DP, Stacks, General Logic building}
Basic knowledge on Networking

Sources of Preparation

LeetCode for solving questions related to Data Structures and Array based General Interview questions, CodeForces to practice implementation, GFG to refer to previously asked questions

Additional comments

Just be very confident and keep trying to interact with the interviewer, I tried considering it more as a discussion regarding things related to CS rather than an interview, helped me calm down and think with an open mind

PhonePe

WFH

IT

Stipend Offered: 50,000 per month

SDE Intern

Recruitment Procedure

Round 0: Coding Test
3 Questions, 90 minutes to solve.

Q1. Given an array (arr) of size n, and a number k. You can pick up any two elements from the array with index i, j such that | i - j | > k and swap them (if required). The task was to create the lexicographically smallest possible array. (n <= 10^5)

Q2. Given n tiles (n <= 10^12), you can use at most n tiles and create a square with exactly one square-shaped hole in between (middle).
Example 1: Using exactly 8 tiles
1 1 1
1 0 1
1 1 1

___

Example 2: using exactly 10 tiles
1 1 1 1
1 0 0 1
1 0 0 1
1 1 1 1

___

1 denotes a tile, 0 denotes empty space.
The task was to find the number of such possible squares using at most n tiles.

Q3. There are N students whose heights are {1, 2, ... N} standing in a line. Now, we want to make this a beautiful line.
A line is beautiful if:
(a) Given K positions {a1, a2, ...ak}, the student at each position should be strictly shorter than its adjacent students.
(b) Given L positions (b1, b2, ...bl}, the student at each position should be strictly taller than its adjacent students.

Task was to find the number of beautiful lines that are possible % (1e9 + 7).
n <= 5000
k,l <= 5000
2 <= ai, bj <= (N - 1)

The coding test turned out to be a little tough and only 5 people made through.

Round 1: Interview (DSA based)

1 hour long, 3 questions. The interviewer just started off with the questions right away, purely DSA based round.

Q1. Given an array of size N+1, all the elements of the array have a value between 1 and N (both inclusive), which means there is at least one duplicate. The task was to print any one of the duplicates. I started off with basic maps solution, to which he put a constraint of O(1) auxiliary space, then I approached it by sorting the array and then iterating to find the duplicate, which he confined by making the array read-only. Then I came up with n^2 time complexity brute, he wanted a solution in less than n^2 time, so I proceeded with a Binary Search solution in n logn time, which he finally accepted and made me write the pseudo-code for it.

Q2. Given 2 arrays, arr of size n, and brr of size m.
Example:
arr: 1 2 4
brr: 1 4 2 3 3
You can draw a line between an element of arr and an element of brr if arr[i] = brr[j]
The task was to find the maximum number of non-intersecting lines.
My approach was n^2 DP, which he accepted and asked me to state the DP Equations and fill up a DP table using bottom-up approach for a small 3*3 test-case.

Q3. Given N books having weight {1, 2, ... N} arranged in some order in a stack. Given a query array arr, with 1 <= arr[i] <= N. arr[i] = book a person wants to read from the stack of books. To read that book, the person needs to lift up all the books above it and that book as well, so the total weight the person will be lifting = weight of that book + weight of all the books above it in the stack. Now, except for the book the person wants to read, he places all the remaining books in the same order in the stack as they were before and then places the book he is reading, on top, and then proceeds with the next query element. The task was to keep the initial order in some way such that the total weights the person lifted during the entire query, is minimized. Print that order. Simple ad-hoc problem, again, didn't ask me to code anything but asked me to give a proof for the solution.

Only 2 people were selected out of 5 for the next round.

Round 2: Interview (System Design + Project Discussion)

1 hour long.

The interviewer was at a very senior level position, asked every small detail about the projects. We discussed 3 projects of mine.
First, my PS1 project, it was on road tracer.
Next, my self-project on Exam Schedule Generator, he asked me about it in very detail from scratch and asked fundamental questions about the tech stack that was used in the project.
And lastly, we discussed my ongoing project with AUGSD. Since the project was on graphs, I was asked to draw out the entire underlying algorithm on sketch pad for this one.

After this, he went ahead with the system design question. I was asked in detail about the Netflix/Prime Recommendation System, not the ML part of it, but the design of it (Data Structures, OOP, DBMS).
This went on for about 20 minutes and then he asked some standard HR type questions.

Final: 2 out of 2 people selected for the internship.

Important Topics and Subtopics to Remember

DSA mainly.
And OOP, DBMS, System Design.

Sources of Preparation

Leetcode/ InterviewBit is a great source for interview prep for the DSA part. However, I didn't do much of it, I mostly focused on Codeforces contests. But, I found out that for interviews, Leetcode/ InterviewBit would have helped more because for many interviews, questions were asked straight from it.
For OOP, I revised the course slides.

Publicis Sapient

WFH

IT

Stipend Offered: 35,000 per month

SDE - Trainee Engineer

Recruitment Procedure

Round 1: Coding Test
It consisted of 2 coding questions and the languages allowed were Java and Python. It was a surprise for me because I code in C++.
One question was a string question and the other was a graph problem.
I was able to solve the string question fully and was not able to pass 1 testcase in the graph problem.
Around 90 people gave the round and they shortlisted 10 people for the next round.

Round 2: Technical Interview
The interviewer asked me to introduce myself and then moved towards my projects and asked me to explain all my projects. After this, he gave me a DSA question which was fairly simple. It was to find 'n' largest non repeating numbers from a given linked List. It was easy and I coded it in their editor. After that he moved towards OOPs and asked about the 4 pillars with real world examples. Then he asked about Operating System, Networking and DBMS to which I said I don't have much knowledge. Then he asked about the Data structures and Algorithms I knew. So I told all DSA stuff. Then he asked me to give real world examples. So I talked about google Maps and how shortest path algorithm is used to navigate. Then I talked about Trie data structure and its usage in Information Retrieval. He was satisfied and asked if I have any questions for him.

Round 3: HR Interview
This was the most strange round. I expected questions like strengths and weaknesses, etc. But he focused on my projects and how will I create a successful business model out of it. My projects were on Machine Learning so he kept asking and going deeper into ML. Then he asked me the difference between CPU and GPU and why GPU is preferred to solve ML problems. After that he asked what % of Machine Learning startups are successful. Then I told him that it should be less because people make algorithms but don't focus on Maintenance which is also an important part of the Software Development Cycle. After this he himself gave the answer and was explaining the main reasons for the number. He told only 20-30% businesses are successful. With this he finished the interview.

Important Topics and Subtopics to Remember

For Publicis Sapient, they expect us to know every CS subject and the basic concepts of each subject. Our projects should be precise and must solve some real world problem.

Sources of Preparation

Geeks for geeks is the best platform for reading interview experiences and should be covered.

Additional comments

Just be cool and keep smiling. Having positive vibes always helps and don't stress too much on one thing. Don't give up, just keep grinding.

Publicis Sapient

WFH

IT

Stipend Offered: 35,000 per month

SDE - Trainee Engineer

Recruitment Procedure

Coding Test 1: It consisted of 2 coding questions and the languages allowed were Java and Python. C++ wasn't allowed.
One question was a string question and the other was a graph problem.
I was able to solve the string question fully. Around 90 people gave the round and they shortlisted 10 people for the next round.

Round 2 : Technical Interview. The interviewer asked me to introduce myself and then gave me a dp question to solve. Then asked me to explain all my python projects. Also asked me a simple OOP question.

Round 3: HR Interview. Asked me all situational questions.

Important Topics and Subtopics to Remember

OOP, Data Structures and Algorithms

Sources of Preparation

GFG, Leetcode

ServiceNow

WFH

IT

Stipend Offered: 70,000 per month

Software Development Intern

Recruitment Procedure

Round1: Hackerrank Test
The test consisted of 15 MCQ questions based on DSA, DBMS, and OS and a coding question. The coding question was:-
Given a 2d grid of 1's and 0's where 0 is a path and 1 is an obstacle, determine whether one can reach the bottom right of the grid from the top left in given time. Each step (vertical or horizontal) takes 1s.
To clear this round you had to at least solve the coding question completely and around 30 people passed this round.

Round 2: Online Interview 1
The interviewer was friendly. He asked me to introduce myself. Since I had done a good project Web Dev project in my PS1 and the company's work is majorly web-based, I mentioned that in my introduction. He asked me some questions about my project which I answered and he was impressed with them.
After this, he asked me some easy DSA questions:-

1)Algorithm to reverse a space-separated string such that the order of the words is reversed but the words themselves are not. Eg "Hi this is xyz" -> "xyz is this Hi".

2)Algorithm to find a loop in a circular linked list. Provide mathematical proof for your algorithm.

3)Given n rods of various lengths, join all of them in an order such that the total cost of this process is minimum. Cost of joining 2 rods = sum of their lengths and the length of the new rod after joining them = sum of their lengths.

4) Min subarray sum.

I had to write a working code for the last 2 questions which he tested on various inputs.

Round 3: Online Interview 2
This interview again started with my introduction. After that, the interviewer asked me the following questions:-

1)Print shortest common supersequence of two strings.
2)https://www.geeksforgeeks.org/islands-in-a-graph-using-bfs/
3)Given 2 strings, find the min cost of making them equal by deleting some characters from either string.

Costs of deleting a character from the two strings were given.

I was not able to come up with a correct approach for the first question but I was on the right track. I had to provide a working code for the rest of the questions.

Round 4: Hiring Manager Round
The hiring manager had many technical issues at his side so the interview had to be cut short due to the time wasted. After he got a stable connection, he asked me to code 2 questions:-
1)Print all permutations of a string.
2)https://stackoverflow.com/questions/52340958/checking-the-validity-of-a-pyramid-of-dominoes
I successfully coded both these questions and he was satisfied with my code.

Important Topics and Subtopics to Remember

1)DSA
2)OOP
3)DBMS
4)OS

Sources of Preparation

Leetcode, InterviewBit, GeeksForGeeks

Additional comments

1)Don't start writing the code without agreeing on an approach with your interviewer.

2)Think loudly. Don't just sit silently when you are stuck on an approach/writing your code. Take hints from your interviewer if needed but keep him engaged in a conversation.

3)Give some mock interviews on InterviewBit.

4)Work on some good development projects that you can talk about in the interview.

5)Apart from DSA, prepare OOP and DBMS well. I was lucky enough that I wasn't asked any question apart from DSA but most of my friends were asked some tough questions on them.

6) Prepare your introduction well along with some basic HR questions like your strengths and weaknesses, why should we hire you, etc.
7)Your CG doesn't matter in the interview, your skills do. But having less CG closes many opportunities for you. Try maintaining a CG >= 8 and at worst >=7.

8)Smile and be cheerful during your interview.

ServiceNow

WFH

IT

Stipend Offered: 70,000 per month

Software Development Intern

Recruitment Procedure

Round 1:
15 MCQ Questions.
Most of them were from DSA and a few from OS, DBMS and Computer Architecture as well
1 coding question
It was a BFS question combined with basic DP.

Round 2:
First Technical Round (45 mins - 1 hour):
It was a really easy round. The interview started with a basic introduction and then the interviewer asked me 3 questions. The first was to reverse a doubly linked list. In the second question I had to flatten a linked list and in the third question I had to print the level order of a binary tree.

Second Technical Round(1-1.5 hours):
The interview started with concepts of OOP. I was asked to tell some of my favorite concepts in OOP and explain the reasons behind it with real life examples. The interviewer now moved on to my PS project and my PS experience. After telling him about my project he gave me a question where I am given a linked list like (1,2,3,4,5,6) and I had to output (1,6,2,5,3,4). The second question was to find the median of a running stream of integers. This question was to be solved using a min and a max heap. The interviewer then asked me some questions related to teamwork and team management. He also asked me if I had any questions for him.

HR (1-1.5hours):
This round started with discussion on my resume. He asked me about my neural networks and my project during PS. Then there was a question on arrays. It was simple. The second question was a DBMS question.
Then he asked me if I had any questions for him.

Important Topics and Subtopics to Remember

DSA - Most important subject. Brush up on all topics and not just the ones I mentioned above.
OOP - Prefer to learn in C++ coz C++ has some benefits compared to Java when it comes to OOP
DBMS -

Sources of Preparation

DSA - InterviewBit, LeetCode, GeeksForGeeks, Youtube Channels(Back To Back SWE, Tushar Roy, Abdul Bari, Keerti Purswani, happygirlzt,
Jenny's lectures CS/IT NET&JRF, Gaurav Sen)
Also, attempting contests on Codechef and Codeforces are a must.
OOP - Simple Snippets on Youtube
DBMS - Knowledge Gate on Youtube (Sanchit Jain is the name of the teacher)

For learning new algorithms(mostly DP and graph algorithms) I watched youtube videos of it online and solved it on Leetcode. I personally feel that Leetcode is better than InterviewBit. Solutions to Leetcode questions are posted on youtube by many youtubers since it is more popular than interviewbit and if you like video tutorials then keep this in mind.

Additional comments

Utilize your summer vacation properly, since many of the students with CS background start DSA from 2nd semester of 2nd year so it is essential that you put in a lot of effort during the summer vacation. Always study topic wise at the start and for that InterviewBit, GeeksForGeeks and LeetCode are the best sources. When you feel like you have a grip over a considerable number of topics then shuffle them. Remember that it is essential to brush up on all concepts. Understand and code all famous questions. Don't just skip a question because it is tough, the interviewer might just ask that same question. Also do not lie on your resume. Remember your resume does not need to be fancy.
Lastly, don't be stressed and remember to enjoy the process.

ServiceNow

WFH

IT

Stipend Offered: 70,000 per month

Software Development Intern

Recruitment Procedure

Round 1 - Online Coding Round
It was conducted on Hackerrank and lasted for 1 hour.
The test comprised of 15 MCQs and 1 coding question.
MCQs mainly tested the knowledge of core CS subjects such as DSA , OOP , DBMS , OS and Computer Networks. Difficulty was moderate.
Coding question was to find the min time taken to reach from a source cell to destination cell in a maze with obstacles.
Hint : BFS.
Difficulty was medium-hard.
Note :-
Only those who completely solved the coding question qualified the round.
Students shortlisted for the interviews : 27

Round 2 - Technical Interview
The interviewer was really friendly and asked me about my college life first. He told me that this was a basic round so he won't ask any project related questions.
He asked me 3 DSA questions in 1 hour (he intended on asking 2, but since my pace was pretty good, he ended up with 3).

Question 1:-
Print all the pairs having a given sum.
https://www.geeksforgeeks.org/print-all-pairs-with-given-sum/

Question 2:-
Print all the leaf nodes of a binary tree from left to right.
https://www.geeksforgeeks.org/print-leaf-nodes-left-right-binary-tree/

Question 3:-
Reverse a linked list recursively.
https://www.geeksforgeeks.org/recursively-reversing-a-linked-list-a-simple-implementation/

Round 3 - Technical Interview
The discussion started off with a formal intro followed by an in-depth discussion on one of the projects that she gave me the liberty to choose.
This was followed by solving 2 DSA questions in under an hour on Hackerrank

that had a share feature enabled.

Question 1:
An array of size N is given that contains the positions of cars on a straight line.
Also, an integer k is given. Find the minimum length of a roof that can cover k cars at once.
Solution: Sorting
Simply sort the array and output min(arr[i+k-1] -arr[i] + 1) where i lies in the range 0 to N-1.

Question 2:
Given 2 arrays of size N called 'currentValue' and 'futureValue' (both representing the stock values currently and in future) , along with an integer 'savings'. Find the max profit that can be achieved if we are allowed to buy stocks without going overboard. Also, each stock can be purchased only once (and also sold once).
Solution: 0-1 Knapsack approach.
https://www.geeksforgeeks.org/0-1-knapsack-problem-dp-10/

Note:
Only those who answered both the questions qualified for the next round. Also even after passing all the test cases, the interviewer kept on modifying the question and asked the modifications needed in the code because of them. eg: She asked me what would happen if any stock can be picked any number of times, changes in the code, how to improve space complexity etc.

Round 4: Technical Interview + Hiring Manager Round
The HR (Hiring Manager) was a really enthusiastic and friendly person, but also one who was quite experienced (11 years in the IT industry).
He asked me about the experience till now and then proceeded by asking me about my daily routine during the pandemic times.

He then asked me 2 questions related to DSA.
Question 1:
Given a matrix with obstacles, count the number of paths from top-left to the bottom right corner.
https://www.geeksforgeeks.org/unique-paths-in-a-grid-with-obstacles/

Question 2:
He modified the above question and asked :
Suppose 2 players are at 2 distinct valid coordinates in the matrix and movement in any of the 4 possible directions takes 1 second, find which player reaches the endpoint (bottom right corner) earlier.
Solution: BFS
I gave a BFS approach for this question as opposed to a DP one for Question 1, this impressed him very much.

Finally, he asked me whether I have any questions for him, to which I asked the following questions:-
1) What technology stack knowledge is expected as a prerequisite from an intern?

2) What are your views on the government introducing programming for students of class 6th? How will it impact the IT industry in the years to come?

He was quite impressed by the second question as he didn't expect anyone to ask such an interesting question in an interview.

Finally, I was selected as an intern for the SDE role :)
In total 7 people got selected for the internship from our college.

Important Topics and Subtopics to Remember

Topics in order of importance especially from ServiceNow's point of view:-
1. DSA
2. Project (and proficiency in it).
3. OOP/DBMS.

DSA is undoubtedly the most important topic. I was thoroughly tested on DSA in all the rounds. Projects come next. Write only those projects in your resume which you are confident enough of explaining to the interviewer.

P.S
DSA topics ranked in importance :-
1. Dynamic Programming (DP).
2. Graph Algorithms (primarily BFS/DFS).
3. Trees and Greedy (tied).
4. Linked Lists.

Sources of Preparation

Sources for DSA :-
1. Leetcode
2. InterviewBit (IB)
2. Geeks for Geeks (GFG)
Helpful Youtube channels :-
1. Aditya Verma (extremely useful for DP , Binary Search theory and questions)
2. Tushar Roy , Tech Dose and Nick White for leetcode/IB solution explanations.

Sources for OOP / DBMS:-
1. Lecture slides for the course taught on campus.
2. GFG for practice mock tests.

P.S -
OS and Computer Networks was also a part of the MCQ section, however, these are rarely known by most candidates. Study them only if time permits.

Additional comments

Competitive programming experience definitely helps a lot. The nature of the first round, i.e, the coding round highly benefits the students who are proficient in solving challenging algorithmic questions in a restrictive time frame.
So do participate in coding contests held on sites such as Codechef or Codeforces once a week .

ServiceNow

WFH

IT

Stipend Offered: 70,000 per month

Software Development Intern

Recruitment Procedure

Round 1 Coding/concepts round (Hackerrank):
Most of the questions were MCQs that required analysing code. One coding question based on graphs that required BFS.

Round 2a: Technical Interview 1:
Asked questions on basic OOP concepts.
Two questions on trees. Zig zag traversal and subtree with highest average.

Round 2b: Technical Interview 2:
Straight into questions.
4 questions: DP change problem, triplet from array to maximise product, maximise subarray sum while the sum is divisible by k, node in a tree to the immediate right.

Round 2c: Manager Round/Technical Interview 3:
Asked about interests and favourite/least favourite courses.
Two questions on graphs: Number of ways to go from one corner to other with obstacles, shortest path to end point in a maze from two given points.

Important Topics and Subtopics to Remember

Data Structures and Algorithms, OOP

Sources of Preparation

DSA - GFG, Leetcode, Algorithmic Toolbox (Coursera)
OOP - Didn't prepare, but any cheatsheet on OOP should be good enough.

Additional comments

You don't have to know everything. Try to make an honest effort to solve the questions and ask for hints if you need any. Discuss the approach thoroughly and try to make the code as obvious as possible without comments.

ServiceNow

WFH

IT

Stipend Offered: 70,000 per month

Software Development Intern

Recruitment Procedure

The process had an online test followed by 2 rounds of technical interviews and a Hiring Manager round which was also technical in nature. There was no HR interview.

Online Test:
MCQs on DBMS, OOP, OS followed by one coding question. MCQs tested fundamentals and did not involve a lot of calculations. Coding question was from graphs (BFS), medium level.

Technical Interview Round 1:
2 Coding questions were asked, I was expected to write running code for both. First question was from linked list, and second was an implementation based problem. Good code quality was expected and the interviewer focused a lot upon it. I was asked to dry run my codes for a set of inputs given by the interviewer.

Technical Interview Round 2:
2 Coding questions were asked, Working code was expected for one of them and only logic for the other one.
First questions was to find least common ancestor of k nodes in a binary tree. The interviewer first asked me if I know least common ancestor of 2 node, I said yes, then he asked to write code for LCA of k nodes. Working and good quality code was again expected and emphasized upon.
Second question was a graph question. Code was not expected. We discussed the solution followed by questions about time complexity of various path finding algorithms and which one is best suited in which situation.

Hiring Manager Round:
This was also a technical round. 2 coding questions were asked. One easy and one hard.
First questions was an array based problem (easy). Second was a backtracking question (hard). Working code was expected for both problems.

Important Topics and Subtopics to Remember

Except MCQs in the online test, entire process only focused on DSA.

Sources of Preparation

leetcode, geeksforgeeks

Additional comments

Code quality was a major focus. Making wrapper functions and helper functions for everything is important in interviews. Space and time complexities were also focused upon a lot. The pros, cons and tradeoffs of data structures were also discussed while coding in interviews, so it is important to know why are you choosing a particular data structure in your code and why not something else.

Communicating effectively with the interviewer is very important especially in a virtual interview so that the interviewer is constantly in touch with your though process.

ServiceNow

WFH

IT

Stipend Offered: 70,000 per month

Software Development Intern

Recruitment Procedure

Round 1: Coding Test:
The test contained MCQ's related to DSA/OOP/DBMS and one coding question.The coding question was based on DP.

Round 2: Technical Interview 1
The interview started with my introduction and then he asked me to code out working code for three questions and all of them were DP related.
1) https://leetcode.com/problems/maximum-subarray/
2) https://leetcode.com/problems/missing-number/ (most optimized version)
3) https://leetcode.com/problems/target-sum/
The interview was planned for an hour so around 20 minutes for each question.Interviewer also asked about the run-time and space complexity for each of my solution.

Round 3: Technical Interview 2
After basic introductions were done I was asked two questions
1)Find lowest common ancestors of n nodes in a tree.
2)https://www.geeksforgeeks.org/minimum-steps-reach-target-knight/
As opposed to the previous interview I was asked to write a pseudo code and give a walk-through of my solution.This interview also lasted for an hour.
Additionaly some questions about BFS/DFS like their run time complexities were also asked at the end of my interview.

Round 4: HR Round
1) Which algorithm you like and why?
2) Maching learning related question like what is CNN and why it works(This question came after I expressed my interest in ML)
3)The most challenging project you have taken and why was it challenging .
Similiar question along the line of my hobby and what I do in my free time etc were asked.
This round lasted for approx 40 mins.

Important Topics and Subtopics to Remember

DSA/OOP/DBMS all are required.
In DSA important topics would be DP ,Graphs,Recursion,backtracking and Number Theory.

Sources of Preparation

Leetcode and GFG

Additional comments

Being comfortable during interview is a must.Talking out loud about your thought process while coding out a question is required.

ServiceNow

WFH

IT

Stipend Offered: 70000 per month

Software Development Intern

Recruitment Procedure

Recruitment Procedure

Round 1: Online Test

The online test consisted of 2 parts.
The first part had 15 MCQs which comprised of questions from OOPS, OS, DSA, DBMS and Logical Reasoning. The questions were moderate level but to solve them, we need to know the basics by heart. The questions were similar to the GATE questions on geeksforgeeks.

The second part of the online test consisted of 1 coding question which was related to the BFS algorithm in Graph Data Structure. The question was one of the standard questions in DSA and was easily doable.
Link for question: https://www.geeksforgeeks.org/shortest-path-in-a-binary-maze/

27 people were selected for the Technical Rounds.

Round 2: Technical Interview 1

The interviewer was friendly and polite. She asked me to introduce myself and then moved on to the technical questions. She asked a lot of questions which were all related to the basics of a particular Data Structure and a puzzle question too. The questions asked were:

DSA Questions:

1. Print the following pattern

```
#
##
# #
#  #
#   #
#    #
#     #
#    #
#   #
#  #
# #
##
```

##
#
2. Delete the given node from a Linked List without traversing it.
Link: https://www.geeksforgeeks.org/in-a-linked-list-given-only-a-pointer-to-a-node-to-be-deleted-in-a-singly-linked-list-how-do-you-delete-it/
3. Find celebrity among people
Link: https://www.geeksforgeeks.org/the-celebrity-problem/
4. Right View of Tree
Link: https://www.geeksforgeeks.org/print-right-view-binary-tree-2/
5. If array already sorted, we need to check whether it is sorted using one of the sorting methods. Which will you use? (Ans: Bubble Sort)
6. What Data Structure will you use for O(1) access, insertion and deletion. (Ans: Map/Hashmap)

Puzzle Question:

1. A and B pick matchsticks from a pile. Both can only pick [1,4] matchsticks at a time. Tell for which case (number of matchsticks) A cannot win. A person loses if they have no matchstick to pick. (Ans: 5n)

Round 2: Technical Interview 2

The interviewer was friendly and asked me to introduce myself. I told in my introduction about an interdisciplinary Phy+CS Design Oriented Project (DOP) that I did and he asked me to explain it in detail. He then moved on to the DSA questions as follows:

OOP Questions:

1. He asked me to tell the pillars of OOP in detail.
I gave him a 5-10 min answer explaining each and everything in great detail and with the help of examples. He was very impresses with that.

DSA Questions:

1. Find median of the continuous stream of numbers.
Link: https://www.geeksforgeeks.org/median-of-stream-of-integers-running-integers/
I was not confident about my heaps approach so I started off with the least efficient approach. He then asked me to make it efficient when I told him the heap approach.
2. Make the Linked List from 1->2->3->4->5->6->7 to 1->7->2->6->3->5->4.
Link: https://www.geeksforgeeks.org/rearrange-a-given-linked-list-in-place/

I asked him about the feedback for the round so he told me to tell the most efficient approach on the first go if you are familiar with it.

Round 3: Technical Interview 3

The interviewer was a senior ranking official so he was a bit serious. He asked me to introduce myself and asked me what new things I learnt after coming to college (this question was based on something I said while introducing myself). He was also curious about my DOP and asked few questions regarding it.

DSA Questions:

1. Rainwater Trapping Problem without porous bottom membrane.
Link: https://www.geeksforgeeks.org/trapping-rain-water/

2. Rainwater Trapping Problem with porous bottom membrane.
I proceeded to code the problem. Later he asked me to improve the efficiency of my program in terms of both aspects: space and time complexity. I had no clue how to make my program more efficient but since this was the last round I thought that I'll try a completely different approach to reduce the space complexity to O(1) in O(n) time. I tried to hash multiple arrays into one and although he knew that this approach might not work at a particular case, he was curious to see me solve a problem which I had never encountered before. He was very interested in me solving this problem and this was probably the only time he was amused during the interview.
3. Minimum Number of Platforms Required for a Railway Station.
Link: https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/
I asked him for the feedback and he told me to give the most efficient solution form the get go without wasting any time.

Important Topics and Subtopics to Remember

OOP, All the Data Structures

Sources of Preparation

Interviewbit, GFG

Additional comments

I would highly recommend everyone to see interview experiences of the company in the past year or so. I would also like to be very clear on that fact that whatever you speak during the interview can be used against you. I was asked ML the whole round in one of my interviews of another company as I told my interviewer that I had done projects in it. Be very careful in introducing yourself as you don't want to say something just because it sounds good. It can come to bite you. Do the standard questions of each and every topic. And the most important thing is to not give up. Even if you don't know the answer to a problem, try to think out loud and form a solution keeping the interviewer involved.

SMC Group

WFH

IT

Stipend Offered: 30,000 per month

SDE Intern

Recruitment Procedure

Round 1:
Technical Interview 1: It was a telephonic interview(literally), interviewer called me on my number and asked me to introduce myself. I mentioned about my PS1 experience and he asked me few question based on my PS1 internship. Then he asked me many questions related to projects I mentioned on resume. Then he asked me question related to c++ language. 25-30 mins passed by now and then he gave following question

Given 2 integers, a and b, you can only perform 4 operations, a*p, b*p, a/p, b/p, where p is prime number. Find count of minimum operations needed so that a is equal to b.
Solution: divide a and b by gcd(a, b), and count prime factors of a and b.
1 hour passed and interview ended.

Technical Interview 2: I don't know why but this guy was in some hurry. It was similar to 1st interview, he asked me to introduce and asked few question based on my projects then started asking question on c++ language, like he asked me "what is virtual function?" followed by similar questions. Then he shared google doc link and asked following question

Q1) You have stream of numbers. 2 types of queries can be given
i)find sum till i'th element (i was given with query)
ii) modify ith element to k(i and k were given with query)
Tell the time complexity of given 2 queries.
Solution: I told to use segment tree so O(logn) for both.

Q2) Asked me to write code in c++ for finding average of 2 integer numbers. But no casting is allowed, so cant use any other data type.
Solution: Just take care of overflow, if both same sign then a + (b - a)/2, if both have opposite sign, then (a+b)/2.

Q3)What is cache memory.
Q4) write code for quick sort as fast as possible.

Iterview was over in 40 mins

Technical Interview3: He was nice guys and asked me to introduce myself and asked few question on my projects. He quickly jumped on following questions

1. There are m * n stone available, where n is distinct category of stones and m is number of stones in each category of different color, also every catergory stone at particular level(let say ith) is of same color. these stones are heavy and lifting them need A[i][j] amount of energy. You need to arrange the n stones in a row such that no two adjecent stones are of same color and you want to spend minimum energy. A is 2D matrix.

2. Given an array of positive interger, you need to find the possible pairs such that it meets these condition
   1. if (i1, j1) (i2,j2) ....(in, jn) are possible pairs, such that max(sum(A[jk] - A[ik])), where k belongs to (1,n), n is number of pairs
   2. i1 <= j1 <= i2 <= j2 ... in <= jn

3. Exact question I don't remember but it was easy and asked me to give solution.
Then he asked me questions from topics like OS and Computer Networks. Like asking me 7 layers of network.

HR/Tech Interview 4(final): This was taken by two senior people and was actually checking my knowledge of OS and CN and all other courses I have done. They asked me question on my projects and then asked course that I like. I actually said OS and CN and then we discussed all the projects I made in these courses. This was most exciting interview of all as people were very knowledgeable and had fun talking with them. Interviewers were alumni from IIT.

Important Topics and Subtopics to Remember

DSA, CN, OS, basic essence of computer science(logic)

Sources of Preparation

DSA: Interviewbit/leetcode is best for practicin question asked in interviews
CN, OS: Learned a lot from projects made in course.

Texas Instruments India Pvt. Ltd.

WFH

Electronics

Stipend Offered: 45,000 per month

Analog and Digital Intern

Recruitment Procedure

Online test:
The test had three parts, analog, digital, and aptitude. The selection of both the profiles was mostly separate as I answered a very few questions in analog. There was a 50% negative marking.
Aptitude: The aptitude part was the easiest, a few questions around PnC and others were really easy logic-based questions, I was able to answer almost all of them.
Analog: This part was lengthy and had a lot of questions on opamp. I answered only a few as I had not prepared for analog.
Digital: The questions were relatively easy but took some time to solve. Some of the questions were the number of unused states in a johnson counter, some questions around duty cycle, some questions on min terms and max terms, and some involving flip-flops.

Technical interview 1:
21 people were selected for this round out of which 12 were for digital and 9 for analog. The interviewer directly started asking questions. He started with some basic questions. He asked about universal gates and if and gate was a universal gate. He asked me to make an inverter from a xor gate. Then he asked if MUX was universal, I said yes as we can make all the gates from MUX. Then he asked me the following questions:
1) Make all gates from MUX.
2) i. Make 4 i/p nand gate from any number of 2 i/p nand gates. Extrapolate to make 5 i/p nand gate.
ii. No. of 2 i/p nands to make 6 i/p nand gates. Then he asked me to come up with a general formula for the number of 2 i/p nand gates for n i/p nand gates.
iii. If one 2 i/p gate had a propagation delay of T, find the propagation delay of n i/p gate.
3) i. Design as frequency by 2 divider.
ii. Design a frequency by 3 divider.
iii. Design a frequency by 3 divider with a 50% duty cycle.

Technical interview 2:
1) i. Design a 4:1 MUX using 2:1 MUXs. How many 2:1 MUXs do you need?
ii. Design a 64:1 MUX using 2:1 MUXs. Then extrapolated to design 58:1 and
43:1 MUXs. How many 2:1 MUXs do you need for each of them?
iii. He asked me to come up with a general formula for the number of 2:1 MUXs needed.
iii. How many select lines do you need?
2) What is a D latch? Design a D latch using 2:1 MUX.
3) Design a combinational logic to multiply a 4-bit binary number with 12.
4) i. Design an FSM that detects the sequence 0010. I made a Moore machine. He asked me if my

machine could detect 0010010 twice? I said yes. He asked me how will I implement this machine? I said using flip-flops. Then he asked me the number of flip-flops required. The answer is log(number of states) base 2.
ii. Come up with an alternate way to detect the sequence. I said using a 4-bit shift register and gates. He said he didn't want 0010010 to be detected twice. I said to reset the register to 0000 once a sequence is detected. He showed me that still it will detect it twice. I told him that I will reset it to 1111 rather than 0000.

HR interview:
It was a phone interview. The interviewer was very chill and friendly he asked some very basic questions to know me.
1) How was the interview process?
2) Which domain are you interested in?
3) He asked me about my PS1.
4) What are your plans after college?
5) Why digital?

Important Topics and Subtopics to Remember

Digital design (Almost all of the questions were from DD)
STA basics like setup and hold time
Flip Flops
MUX, gates
FSM(Mealy-Moore)
Combinational
Sequential
Counters
Verilog and gates using CMOS, NMOS if you have time

Sources of Preparation

1)Morris Mano.
2)Question bank given by PU helped a lot.
3)They repeat a lot of questions from past years so make sure to go through them.
4)For Verilog, Coursera: Hardware Description Language for FPGA design.

Texas Instruments India Pvt. Ltd.

WFH

Electronics

Stipend Offered: 45,000 per month

Analog and Digital Intern

Recruitment Procedure

Round 1: Online test

The test consisted of three parts Analog,Digital and aptitude.Since TI provides offers for two profiles analog and digital seperately, its better if you focus on profile you want to get selected for and perform decent in the other section.All questions had 50% negative marking.

Analog Section: It had roughly 20 questions.There were questions on MOSFETS, BJTs,OPAMPS and basic poles and zeros theory.There were a lot of focus on RLC circuits with various components like diodes,sources,etc connected. Almost all questions had non-ideal diodes connected in between the circuits.The section was lengthy and so you need to choose which questions to get in.

Digital section: This section was mostly focusing on concepts from digital design and timing signals.It wasnt lengthy as such and hence you could attempt all the questions.

Aptitude: Basic intelligence questions and surely the easiest part of the paper. Questions based on PnC and logical relations mostly.Was able to answer almost all of them, one just needs to maintain a bit of speed and calmness beacuse it will be the last section you will answer in the paper.

It is really hard to explain questions asked in interview without diagrams but I'll try my best.

Round 2:

Technical Interview 1:

In all 21 people were shortlisted for interviews by TI out of which 9 were selected for Analog profile. The interviewer directly started asking me questions.

1. He gave me a circuit which consisted of a unit step current source,2 registers and 2 capacitors . He asked me the final voltage across one of the capacitors after i gave him my answer he asked me questions like what is the effect of one capacitor on the other, what will happen if i remove one capacitor, then removed one register.Frankly, i got a bit confused while answering these questions but he was trying to lead me in the right direction.

2.He gave me a simple register circuit with 2 loops and asked the current flowing though the wire connecting those loops. It was a basic questions but still a bit tricky. Then he defined gnd in one loop and asked me values of voltages at various nodes in the other loop.

3.He gave me an LR circuit connected to a unit step current source, asked me the nature of voltage across register over period of time.He added few registers here and theer later and asked me the changes in the output.

Technical Interview 2:

1.He gave me a circuit with a 1V source connected to two capacitors through two switches which are switched on and off such that they were completely out of phase forming 2 branches and asked me to describe the output voltage behaviour across the 2nd capacitor. The concept is basically how capacitors get charged, discharged following the law of distribution of charges and finally at what value output

voltage stabalizes and how it reaches there. Maybe this is their favourite question because it was also asked in previous year's interviews.
Then he added a third branch which was directly connected to the ground through a switch and now switch 1 and 3 were in phase and 2 was out of phase.Again asked me how voltage stabilizer and reaches that value.
2.He gave me a register circuit and across one of the registers a high gain amplifier was connected which had feedback connected to the other end of that register through a capacitor.He asked me final voltage across this register and one other register.This was a trick question.Because the input given was DC the capacitor and amplifier played no role and it was a normal register circuit. When i was taking time to answer this question he gave me an hint to look at the sources properly.

Overall, the interviews were more like a conversation than just questions and answers because if i got stuck they were trying to lead me in right direction but for that I had to tell them what i was thinking the solution might be even if i wasn't 100% sure.

Round 3:
HR interview: This was done via a phone all. It was very chill and short interview.The interviewer asked me basic questions to know me better.
1.How was the interview process?
2.Why I want to work in this domain?
3. Have I worked with VLSI before or any related domains?
4.What are my plans after college?
5.Where did I do my PS1 and a bit about it.

Important Topics and Subtopics to Remember

Basic Electrical science
RLC circuits (most important)
Diodes
Amplifiers(all types with various loads,etc)
Basics of MOSFETs and BJTs
Bode plots
Poles and zeroes theory
LTI systems
Basic Opamps

Sources of Preparation

Microelectronic circuits-Sendra and Smith
Fundamentals of Microelectronics-Behzard Razavi
Control systems Engineering-I.J.Nagrath and Kothari
Network Analysis-Van Valkenburg
Chembian sir's videos

Past year written round
Question banks shared by PU

Twilio

WFH

IT

Stipend Offered: 54,880 per month

Software Engineer - Intern

Recruitment Procedure

Round1: Coding Round
3 questions were asked
q1) based on tries
q2) explanation of the scenarios where trie is preferred over hashmap and vice versa (Subjective)
q3)String based Question
Refer Link below for the details regarding each q
https://leetcode.com/discuss/interview-question/864424/Twilio-OA-University-Recruiting-for-Summer-2021-SWE
8 people were shortlisted for Round 2:
Round 2 considted of two interviews: One Technical Interview and One Twilio Magic Value Interview (HR)
Technical Interview:
Purely Based on DSA:
Dfs Traversal question asked and then the interviewer kept on adding constraints to it.
It was conducted on codepair
Magic Values Interview:
Background check on Education and generic HR type questions like tell about your strengths/weakness etc were asked.
Final Shortlist was based on the feedback given by both the Interviewers.
Note: Twilio actually consider HR interview as crucial for shortlisting. Make sure you do it right.

Important Topics and Subtopics to Remember

DSA
DBMS
OOP

Sources of Preparation

Leetcode is sufficient enough.
Prefer leetcode over IB.

Twilio

WFH

IT

Stipend Offered: 54,880 per month

Software Engineer - Intern

Recruitment Procedure

Round 1: Coding Test
One coding question on prefix search (I used tries) and explaining the time complexity, how to improve it etc. Second coding question on splitting a message into k 'n - character messages'. Emphasis on good commenting and variable names. We were allowed to refer to the web for syntax/ usage of functions.

Round 2: Technical Interview
One coding question on graphs. I do not remember completely, but it was based on airports and flights (vertices and edges) and to find a route between A and B. Quite easy. There was also a discussion on how to handle cycles if present.

Round 3: HR Interview
Questions about myself, my strengths, examples where I have shown leadership etc. Talk about one of my projects listed on my resume.

Important Topics and Subtopics to Remember

Graphs, Time Complexity, Maps/Dictionaries, Sets, DSA

Sources of Preparation

No special preparation needed, above topics can be practiced on Interviewbit, Codeforces etc.

Additional comments

I think having several projects helped me here. Put your coding projects on Github if you can and link to them.

Twilio

WFH

IT

Stipend Offered: 54,880 per month

Software Engineer - Intern

Recruitment Procedure

Round 1: Online Test
The online test consisted of two DSA coding questions and one written DSA question. Both coding questions seemed to be of medium difficulty. I remember one of the coding questions which was on SMS splitting, given an input string, output SMS-compliant segments(of 160 characters or less) with suffixes.

Round 2: Project and HR Interview
This interview included questions about the projects I have done which were on Machine Learning as well as my interests extra-curricular activities, interests and principles. The interviewer was very nice and polite. It was like a friendly discussion.

Round 3: Technical Interview
The technical interview included 1 coding question which I solved using sets and pairs. There were also some follow up questions on the same.

Both the interviews were around 45 minutes each.

Important Topics and Subtopics to Remember

I think an in-depth knowledge and practice of all DSA topics is important. Being from EEE, I had done very less CS core subjects and they weren't asked in the interview.

Sources of Preparation

I did my preparation using interviewbit, a DSA bootcamp through and practiced questions on Leetcode.

Additional comments

I had done a fair number of projects and it played a big role in giving the interviewer a good impression and took a big chunk of time of the interview.

Uber

WFH

IT

Stipend Offered: 1,60,000 per month

Software Engineering Intern

Recruitment Procedure

Round 0: Coding test:

It had 3 questions.

1st was a math based question.
The maximum sum of absolute differences of adjacent elements you can get by arranging first n natural numbers.you can do this using a simple mathematical formula ,the array based solution was not helpful due to the constraints on n,

2nd was a trie based question .

Given strings. Each string N contains only lowercase letters from a - j (both inclusive). The set of N strings is said to be GOOD SET if no string is prefix of another string else, it is BAD SET otherwise. (If two strings are identical, they are considered prefixes of each other.) .we need to return whether given set is a good set or not. The brute force algorithm don't work here again due to constraints.

3rd was binary search based question .

A person wants to build two new fountains. There are n available fountains, for each fountain its beauty and cost are known. There are two types of money in the game: coins and diamonds, so each fountain cost can be either in coins or diamonds. No money changes between the types are allowed.Help that person to find two fountains with maximum total beauty so that he can buy both at the same time

Solved this using brute force but you can also try doing this using binary search. surprisingly brute force also gave correct answer without TLE.

After this, 13 people were shortlisted for the interviews.

Round 1: Coding /problem-solving round:

fortunately interviewer was a BITS Pilani ,Goa graduate and he was so supportive and helpful during the round.He asked me to choose a programming language to code and I replied that I was comfortable with C++ .

However, it was not DSA based round but sort of a system design,OOP based round where you were

given some tasks such as create a flight-booking system and implement functions such as createUser,createFlight,bookFlight,getDetails etc .. .

I went on to create some classes such as flight,User to my comfort to solve the problem optimally.Mainly this round was based on how you analyse a problem and how fast you can come up with good solutions as there were many functions to implement within 45 min.

Round 2: Another coding round:

This time the interviewer was an SDE II at Uber and a IIT -Madras graduate but so supportive and helpful like our guy in the first interview.The question was not clear to the point at first but after two to three queries the final question summed up to be

"You are given a list of edges in a graph and for each pair of vertices that are connected by an edge, there are two edges between them, one curved edge and one straight edge i.e. the tuple (x, y, w1, w2) means that between vertices x and y, there is a straight edge with weight w1 and a curved edge with weight w2. You are given two vertices a and b and you have to go from a to b through a series of edges such that in the entire path you can use at most 1 curved edge. Your task is to find the shortest path from a to b satisfying the above condition."

The answer for this question is a manipulation of dijkstra's algorithm,and again the question was changed to what if you can have at max k curved edges in the path to reach b .fortunately I was only needed to make minor manipulations in my code to solve the modified problem .I was able to solve the problem in time with written code.

Round 3: HR round:

I thought HR would be of mostly 20 minutes of conversation but I didn't realise that It lasted for 45 min until the end of interview. There were no technical questions in particular but Interviewer asked about projects and experience on my resume.The round covered almost all questions of behavioural interviews ,I'll try to mention few
below.
1. Introduce yourself
2. What are the achievements or experiences that you are most proud of in your life?
3. your strength?
4. your weakness?
5. things that you really regret and don't want to happen in your life again because of you?
6. why Uber?
7. what do you do in case of a conflict with your team member?

I suggest to prepare well for this type of non-typical questions too because this is the first impression you are giving to the interviewer and think from interviewer side to answer them.

At the end of all the every interviews, I was given time to ask the interviewer a few questions.Do prepare some questions to ask at the end of interview,because these questions show your curiosity and interest in joining the company.

Overall It was really nice experience talking to some bright minds in the industry.

Important Topics and Subtopics to Remember

DSA mainly be prepared to face graph questions in interview.
Few concepts in OOP about objects,polymorphism, inheritence.
Probably they don't prefer to ask any questions from DBMS but if your project involves any backend development learn about how to improve your project (because definitely I don't think we can build a perfect project that has no improvements to increase scalability,performance etc..)
If you prefer C++ and use STL functions or data structures in interview make sure to know how they are implemented under the hood.

Sources of Preparation

Interviewbit
GeeksforGeeks
Leetcode
codeforces/codechef

Additional comments

Just be very confident and keep trying to interact with the interviewer, I tried considering it more as a discussion regarding things related to CS rather than an interview, helped me calm down and think with an open mind

Uber

WFH

IT

Stipend Offered: 1,60,000 per month

Software Engineering Intern

Recruitment Procedure

Round 0: Online Coding Round

This round had 3 questions for 90 minutes in increasing order of difficulty.

Question 1: Given a number n, calculate the maximum sum of the difference between 2 consecutive numbers in any permutation of n.
Question 2: Find if a set of strings has a common prefix
Question 3: https://codeforces.com/contest/799/problem/C

After this round 13 people were shortlisted for interviews. The interviews were divided into 2 phases: Technical Rounds, Hiring Manager Round.

There were 2 technical rounds (the order varied from person to person). Both these rounds were held on zoom and code sharing was done via code signal platform:

Round 1: Coding Round

The interviewer was a BITS Goa alumnus and seemed very pleasant and helpful. After a brief introduction, he jumped right into the problem. Although not explicitly mentioned, this round was essentially an OOP design round and not like a system design round (which would many other factors like scalability). I was asked to design a Flight Booking system and was given specific requirements which I had to incorporate in my design (like add a user, add a flight, book a flight for a user, show all bookings from a particular flight, show all flights from source to destination, etc).
I spent around 10-15 minutes discussing my solution which in hindsight was a little longer than I should have. And then started coding my solution. As I had spent more time in discussing, I could not finish all functions and had to orally explain how I would implement the function. The interviewer seemed satisfied with the different classes I had made and was considerate about the lack of time.

Round 2: Problem Solving round
This round also started with a brief introduction. This was a proper DSA round where I was given a question based on graphs. I was given an undirected weighted graph with 2 kinds of edges: straight and curly. I had to find the shortest path from a given source to destination using exactly 1 curly edge.
I quickly gave a brute-force solution. After that I tried to find the optimal solution by thinking of all the shortest path algorithms and used Dijkstra 2 times once from the source and once from the destination and used that info to find the shortest path. After coding the solution and discussing the time complexity,

I had 10 minutes remaining. So, she asked a common easy question based on tree which I solved using recursion.

Round 3: Hiring Manager Round
The interviewer was a senior manager who had joined Uber very recently. He briefly explained his role and what his team worked on. After that, I was asked to introduce myself and tell about my projects till now. Then he delved deeper into my summer project at CEERI and asked me about all the technicalities of the project. This was followed by the general HR questions about my strengths, weaknesses, and questions like how I have dealt with conflicts with a mentor or my colleagues during any project.
Then he asked me to design a data structure to implement the back-end of the dots and boxes game. I was not required to worry about scalability and all and just design an efficient data structure. He asked me how I would handle the edge cases and also incorrect inputs.
At the end of all the interviews, I was given time to ask the interviewer a few questions.

Important Topics and Subtopics to Remember

DSA (just like any other company)
OOP - heavy focus on OOP also

Sources of Preparation

InterviewBit, Geeksforgeeks for DSA
Design questions from YouTube
Reading about previous interview experiences (from geeksforgeeks or now through this) is really helpful

Additional comments

Advice specifically for UBER:
1. Practice design questions. Many people only focus on DSA and ignore OOP but Uber interviews do have a lot of weightage for OOP as well.
2. Don't spend time in discussing your design for the Coding interview as they are more interested in seeing your implementation and code.
3. Know everything about your projects. My interviewer even searched for the datasets and the model we used.

Uber

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IT

Stipend Offered: 1,60,000 per month

Software Engineering Intern

Recruitment Procedure

Round 1 (Coding Round)
This round had 3 questions on DSA problem solving.
Question 1: DP and observation (100 points) (Level - 1500 CF)
Question 2: Trie, String Hashing (200 points) (Level - 1600 CF)
Question 3: DP and binary search (300 points) (Level - 1800 CF)

Only 13 students were shortlisted for the next round and 600/600 was the cutoff.

Round 2.1 (Technical Interview based on System Design)
After a brief introduction and exchanging pleasantries, I was asked to design a back-end code of Flight Booking System. You only require knowledge of DSA and OOP to code this problem.
(Pro Tip - Discuss your idea with the interviewer. He will try introducing challenges in the problem and you need to come up with ways to overcome that with your code. Clarify the statement before diving into the coding part.)

Round 2.2 (Technical Interview based on Problem Solving)
I was asked a question on recursion and memoisation (around 1700 on Codeforces). I discussed the idea with him and quickly coded the problem. He ran my code on a few test cases to check for correctness. He improvised the question a bit and I coded that as well. Even though my code was accurate and optimized with respect to space and time, their was a piece of code that had to copy pasted several times. He asked me to try and come up with a way to change that. My solution to the problem was the one that he was looking for and got really pleased when I discussed that with him.
(Pro Tip - Uber priorities a good working code over everything else. So make sure that you complete your code in the interview and leave time to discuss optimizations with your interviewer.)

Round 2.3 (Hiring Manager Round a.k.a. the HR round)
I received a call for this round within 15 minutes of my previous interview.
The round focused on the projects that I had completed. Make sure that you are thorough with the projects you mention in your resume.
This was followed by the generic HR questions:
a. What are your 3 biggest achievements?
b. What was your biggest mistake?
c. How did you tackle difference in opinions while working in a team?
d. What are your strengths and weaknesses?
e. Why Uber?

(Pro Tip - Share interesting stories that may support anything you say. This keeps the conversation interesting. You could ask questions such as "How will Uber help me learn and become a better Software Developer at the end of the 8 weeks?" to portray yourself as an individual that prioritizes learning over everything else.)

(P.S. Some of my friends were also asked a small System Design question. So don't rule that out)

I was told by my seniors that HR rounds are just a formality however that was not the case with Uber. 7 people completed the HR round and only 3 where offered the job.

Important Topics and Subtopics to Remember

String Data Structures, Graphs and Trees, Dynamic Programming, Binary Search and Recursion

Be thorough with basic OOP concepts that you will code in.

Be ready to answer any questions related to your project.

Sources of Preparation

I was a regular Competitive Coder and that helped me in clearing the coding round as well as the Technical Rounds. My main resources of problem solving have been Codeforces, Codechef, CP-Algorithms and GFG.
For OOP, just revise the slides.

Additional comments

If you are prioritizing Uber, you should have a good problem solving ability. This is mainly achieved by regularly practicing competitive coding.

Uber

WFH

IT

Stipend Offered: 1,60,000 per month

Software Engineering Intern

Recruitment Procedure

Round 0 (Online Coding test):
There were 3 questions in this round, to be solved within 90 minutes. They carried 100, 200 and 300 points.
The first was the easiest. Given the first n natural numbers, arrange them in a sequence to maximise the sum of absolute differences of the adjacent elements.
Link: https://www.geeksforgeeks.org/maximum-sum-difference-adjacent-elements/

The second question was to be solved using trie. Given a list of strings, return the first string which is a prefix of any other string or has the prefix as any other string already processed. It was similar to this: https://www.geeksforgeeks.org/strings-from-an-array-which-are-not-prefix-of-any-other-string/

The third question was : there are n fountains, and for each fountain, its beauty and cost are given. There are two types of currencies: coins and diamonds, so the cost for each fountain can be either in coins or diamonds. You start with a given amount of coins and diamonds. The aim is to maximise the total beauty by buying two fountains within your budget.
Link: https://codeforces.com/problemset/problem/799/C

After completing the codes, I had some time left so I added descriptive comments to my code and resubmitted them. I've heard that some companies check the submitted code for good coding practices, not sure if that was the case here as well.
I think that only those who had a perfect score in this test were shortlisted for interviews (13 people). There were 3 interviews, 45 minutes each.
Round 1 (Coding Interview):
After a brief introduction, the interviewers asked me my preferred programming language. Then they provided the problem statement for building a flight booking system. They asked me to explain my approach before starting to code. They were actively listening to my approach and ideas, while making useful suggestions wherever required. Honestly, I had not expected an OOP-based coding problem. They had provided some functionalities to be included in the solution, like: list all flight bookings for a given passenger ID, list all flights from a given source, create a booking only if the flight's capacity has not been reached, etc. I clearly stated and justified any assumptions I made. It was a fairly lengthy code and I could not finish some operations that they had listed. But I explained my approach for whatever was left, to which they posed a few questions. I answered their questions and they seemed satisfied with my answers. At the end they asked me if I had any questions for them.
Round 2 (Problem Solving Interview):
The interviewer was more experienced than the interviewers of the first round. We started with a brief introduction, after which he gave me a problem involving dynamic programming. There is a bookshelf

having n books, and the number of pages in each book is given. Two people, Alice and Bob, play a game of picking a book from either left or right side of the bookshelf in every turn, and reading it with an aim to maximise the total number of pages read. Alice starts the game. You have to return the maximum number of pages Alice can read given that (a) Bob is clever (plays optimally to maximise his pages); (b) Bob is dumb (cannot maximise his number of pages). Link to a similar question: https://www.geeksforgeeks.org/optimal-strategy-for-a-game-dp-31/
I first explained my approach and performed a dry run on a sample test case. I suggested solutions using recursion as well as dynamic programming. After writing the code, I also ran it on my test case. Then I analysed the time complexity for both the solutions that I had suggested.
Then he gave me another question involving the vertical sum of a binary tree. The question was fairly simple. I explained the approach and wrote the code in 5 minutes.
Link: https://www.geeksforgeeks.org/vertical-sum-in-a-given-binary-tree/
At the end, he asked if I had any questions for him. I asked a few, and the round ended.
Round 3 (Hiring Manager Round):
The interviewer had close to 10 years of experience in the industry. The questions were mostly about my resume, projects and internships. Very detailed answers were expected. After discussing the resume, she asked some usual HR questions like: describe your strengths and weaknesses, how do you generally handle conflicts, how do you handle criticism, what do you like about Uber, etc. This round also ended with me asking a few questions to the interviewer.

Important Topics and Subtopics to Remember

Courses:
Data structures and Algorithms
Object oriented programming

Sources of Preparation

For coding practice, I found Interviewbit to be quite useful (only for topic coverage, Leetcode's interface is better). I also practiced questions on Codechef, Leetcode and Codeforces.
For learning different algorithms, I referred to GeeksForGeeks and Youtube videos by Abdul Bari.
I revised DBMS from Youtube videos by Sanchit Jain (Link: https://www.youtube.com/watch?v=eTiP-H9GQ30&list=PLmXKhU9FNesR1rSES7oLdJaNFgmuj0SYV)
For revising OOP, I referred to the lecture slides.

Additional comments

Try doing a project related to machine learning/deep learning either as a part of PS1 or as a personal project.

Uber

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IT

Stipend Offered: 1,60,000 per month

Software Engineering Intern

Recruitment Procedure

Round 0 (Coding Test- 90 minutes):
It was a 90 minutes coding round with 3 questions to be solved.

Question 1 (100 points): It was a simple question in which we had to find a formula to maximise the sum of the absolute difference of adjacent elements in an array.
Link: https://www.geeksforgeeks.org/maximum-sum-difference-adjacent-elements/

Question 2 (200 points): Trie question in which we had to find the first string out of n strings which is neither a prefix of other strings nor there is any other string which is a prefix of it.
Link (Not this but similar to this):
https://www.geeksforgeeks.org/strings-from-an-array-which-are-not-prefix-of-any-other-string/

Question 3 (300 points): Standard DP question where we had to maximise the sum of beauty of 2 fountains given some amount of coins and diamonds.
Link: https://codeforces.com/problemset/problem/799/C

13 students were shortlisted on the basis of this round, all having a perfect score of 600 points. There were more students with 600 points but they didn't get shortlisted because the selection was also based on code clarity and efficiency.

Round 1 (Problem-solving Round- 45 minutes):
It started off with a formal introduction. We directly started with DSA questions after that:

Question 1: It was an optimal game strategy question. There is an array of books with some number of pages and a player can pick a book from either end. The players pick the book turn wise and player A starts the game. The task was to maximise the number of pages A can collect. I was asked to solve the question for 2 different conditions: 1. Both the players play optimally and 2. Player A plays optimally and Player B is dumb (selects all the wrong books).
Link (similar to this): https://www.geeksforgeeks.org/optimal-strategy-for-a-game-dp-31/.

Question 2: A surprisingly simple tree question. Find the vertical sum of a given binary tree.
Link: https://www.geeksforgeeks.org/vertical-sum-in-a-given-binary-tree/

Even though I knew how to solve both the questions, I didn't straight away start coding it. I spent a considerable amount of time in making sure they understand the DP formula I'm going to use or why I chose this particular data structure. I was told that the clarity with which I explained my thought process

impressed them the most.

Round 2 (Coding Round- 45 minutes):
It started off similar to the previous round (formal introduction) but with a different interviewer. Then he asked me to code an Employee Management Software, with proper consideration given to OOP concepts. The software had to maintain the database of all the employees with their details, manager, subordinates, etc. Along with this, there were some functions like changeManager, hireEmployee, fireEmployee, which only admins (a special type of Employees) can call and one general function like getSubordinates which anyone can call.
The problem was lengthy so I briefly explained what I was thinking and started coding. The interviewer in this round was very helpful and we had a constant discussion on the problem for the whole 45 minutes. I was stuck a few times and was also missing some corner cases (eg: Employee that you're trying to fire doesn't exist) but I was able to correct them as soon as he pointed out that I'm missing something here.

Round 3 (HR + Technical Round- 45 minutes):
Around 9 out of 13 were selected for technical round.
The interviewer was a senior person with a very solid profile. We had a long discussion on my resume where he wanted to me explain my previous internship experiences and projects that I've done.
It was followed by standard HR questions like why Uber, what are your weaknesses, your biggest failure and how did you cope up with it, how did you handle problems with team members/ manager during the internship, etc.
In the end, he gave me a dots and boxes game and asked me to select a particular data structure that should be used to store the state of the game. I was not very sure with my answer but I gave him around 2-3 different approaches and explained the benefits of each one of them.

At the end of all the interviews, the interviewers asked if I had any questions for him. I had prepared 5-6 questions beforehand related to Uber and had a warm and healthy discussion for around 15 minutes with each one of them.
After all the rounds, 6 students were offered an internship role and I was one of them.

Overall, I really enjoyed my Uber interview experience. Unlike the general trend where you are asked a lot of theory questions on OOP and DBMS, Uber interviews were more on the practical implementation of these concepts. The main focus was on the quality of code, thinking abilities and thought to the implementation process.

Feel free to contact me if you have any query.
All the best!

Important Topics and Subtopics to Remember

DSA and OOP
One may also expect some System Design questions.
No questions on DBMS or OS were asked.

Sources of Preparation

DSA: Interviewbit (for topic-wise preparation), Codeforces (for time-bound contests practice), Geeks for Geeks (for understanding the solutions to some standard problems)
OOP: College coursework slides are very good for developing fundamentals. Other than that, do spend a considerable amount of time on Geeks for Geeks to get in-depth knowledge of various practical OOP concepts like singleton classes, etc.
System Design: Youtube Videos

Additional comments

If you are applying to the Upraised program, you can prep yourself by being familiar with data analysis (Hypothesis testing), design(wireframes), SQL, Aptitude/Reasoning questions. Once selected, you would be training for interviews with a small cohort.

If you are applying for product roles off campus, and want to make up for the lack of specifically product related work that many companies favour, you can make a portfolio of your work, comprising of (product) case studies or a sample PRD that you could prepare for a hypothetical product feature you would like to add, say to your favourite product.

Uber

WFH

IT

Stipend Offered: 1,60,000 per month

Software Engineering Intern

Recruitment Procedure

Round 1: Coding Test.
I got to skip this round, as I had cleared the UberShe++ test. A total of 13 students were shortlisted for the next round

Round 2: Technical Interview 1
The round began with a general introduction, and proceeded with the interviewer presenting a coding question which entailed creating a "Flight booking system". Other than clarifications regarding the question, the interviewer didn't provide any hints or leads on how to proceed. In the question, the airport admin could create and add flights based on source, destination, capacity. Passengers could book flights based on preference and availability. There were a list of other functionalities to be incorporated into the system. I used constructs of object oriented programming such as classes and methods, alongside appropriate data structures like ordered/ unordered maps. It was very important to take care of corner cases in each of the methods

Round 3: Technical Interview 2
The interviewer was very friendly and enthusiastic. This was a problem-solving round in which I was given a 2d DP question.
Given an array of books, each book containing some positive integer number of pages. Alice picks one of the books from either end of the array followed by Bob, and then Alice and so on in alternation. Each time a player picks a book, that book will not be available for the next player. Alice being the first mover, the goal was not only to make Alice win, but also to maximize the number of pages read by Alice (maximize the gap between Alice and Bob's scores). This could be solved by maintaining a 2d grid to keep track of the difference between scores, maximizing it at each step. I had practiced variants of this problem on Leetcode

Round 4: Managerial Interview
An interaction with a senior level manager.
I was asked a series of HR questions such as why do you want to intern at Uber, your biggest failure, weakness, strengths, dealing with conflicts, etc
This was followed by resume related questions regarding a past internship and a project
Finally I was asked a design question: to decide upon which data structure would be ideal to store a manager-employee related database pertaining to certain characteristics. I decided upon a graph data structure, and had to elaborate on traversal/ complexity of a search

Important Topics and Subtopics to Remember

DSA and OOP

Sources of Preparation

DSA: Interviewbit, Leetcode, Hackerearth, Coding Blocks
OOP: Geeks for geeks, Lecture slides

Additional comments

Competition Wins and Server related projects

Upraised - Pepper Content

WFH

Non-Core

Stipend Offered: 30,000 per month

APM

Recruitment Procedure

Round 1 & 2
Around 70 MCQ each, covering data analysis, technical (software) proficiency, quantitative aptitude, logical reasoning, and product sense.

Round 3
Some subjective questions aimed at valuating an applicant's soft skills and a few MCQs involving hypothetical workplace situations involving conflict etc.

Training:
They provide a 3 week self serve learning program comprised of worksheets with questions aimed to prep you for the interview as well as a product role in general. Peer to peer interviews are also arranged (with other students in the cohort).

Interview with target companies:
The process of shortlisting for company interviews was handled by Upraised, with the students mostly unsure of the criteria and timeline for the same.
Once you are shortlisted for a company (Pepper Content, in my case), you have a mock interview with an Upraised staff member prior to the actual interview.

Interview (Pepper Content):
Call 1 (Founding Member)
Q. Introduction - Tell me about yourself.
Q. Why Product Management?
Q. What is your favourite product? Why? How would you improve it?
Q. Explain the Software Development Lifecycle (briefly).
Q. Imagine you were to to develop a text editor to compete with google docs, name 3 features which would be essential to developing a competent product.
Q. Name one feature you wish was present on either Instagram/Whatsapp. Why do you think this feature hasn't been implemented yet.

Call 2 (Head of Product)
Walkthrough of my resume/previous experiences that led me to pursue a role in product management, no specific questions were asked.

Important Topics and Subtopics to Remember

Be fairly confident in the following:
Guestimates
Product Design Questions
Product Improvement Questions
Your favourite product (software preferably), and ways you would improve it
Product Metrics

Sources of Preparation

Cracking the PM Interview (book) - a well recommended book, not personally used.
stellarpeers.com & productmanagementexercises.com - Interview questions and sample solutions.
Exponent (YouTube Channel) - Sample interview questions and solutions from successful product managers
Swipe to Unlock (book) - light reading for a little technical familiarity.
Case Interview Secrets (book) - For guesstimates

Additional comments

If you are applying to the Upraised program, you can prep yourself by being familiar with data analysis (Hypothesis testing), design(wireframes), SQL, Aptitude/Reasoning questions. Once selected, you would be training for interviews with a small cohort.

If you are applying for product roles off campus, and want to make up for the lack of specifically product related work that many companies favour, you can make a portfolio of your work, comprising of (product) case studies or a sample PRD that you could prepare for a hypothetical product feature you would like to add, say to your favourite product.

WalmartLabs

WFH

IT

Stipend Offered: 80,000 per month

Intern

Recruitment Procedure

There were only 2 rounds

Round 1: Online Test
25 MCQs on DSA, DBMS, OOP, and problem solving
1 coding question -
You are given a number A. Convert A into B such that B contains exactly 1 occurrence of A 's prime factors.
Consider C such that C is the product of all divisors of B.
Count the number of divisors of C.

Round 2: HM interview
The interviewer seemed very chill and polite.
First he asked me to introduce myself. Then we discussed on my projects and my previous internships/PS1. He asked me about my college life, hobbies, interests etc. He asked two ezpz programming questions -
Q1. Print -
1
1 2
1 2 3
.
.
Q2. You are given 99 numbers from the range 1-100. Find the missing number.
The round went on for 30 mins

Important Topics and Subtopics to Remember

DSA
OOP
DBMS

Sources of Preparation

GeeksForGeeks archives
Interviewbit
Leetcode

Additional comments

1)Don't start writing the code without agreeing on an approach with your interviewer.

2)Think loudly. Don't just sit silently when you are stuck on an approach/writing your code. Take hints from your interviewer if needed but keep him engaged in a conversation.

3)Give some mock interviews on InterviewBit.

4)Work on some good development projects that you can talk about in the interview.

5)Apart from DSA, prepare OOP and DBMS well. I was lucky enough that I wasn't asked any question apart from DSA but most of my friends were asked some tough questions on them.

6) Prepare your introduction well along with some basic HR questions like your strengths and weaknesses, why should we hire you, etc.

7)Your CG doesn't matter in the interview, your skills do. But having less CG closes many opportunities for you. Try maintaining a CG >= 8 and at worst >=7.

8)Smile and be cheerful during your interview.

WalmartLabs

WFH

IT

Stipend Offered: 80,000 per month

Intern

Recruitment Procedure

Round 1: 26 questions - 25MCQs + 1 Coding question (1hr)
MCQs were a mix of Aptitude(Simple and Compound Interest, premise type questions), Oop, DBMS, DSA and Time complexity questions.
Coding question was more of a number theory question.

Round 2 (1 hr) : Was an HR round. Few easy technical questions were asked. The entire discussion was resume centric and focussed on projects. It was more of a test of communication skills than technical. Standard questions like why should we hire you and why Walmart.

Important Topics and Subtopics to Remember

Oop, DBMS, DSA, TIme Complexity

Sources of Preparation

Practice MCQ type questions in a timed environment. Geeks for geeks, InterviewBit and Leetcode are enough for a good understanding.

Additional comments

Competitive programming experience definitely helps a lot. The nature of the first round, i.e, the coding round highly benefits the students who are proficient in solving challenging algorithmic questions in a restrictive time frame.
So do participate in coding contests held on sites such as Codechef or Codeforces once a week .

WalmartLabs

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IT

Stipend Offered: 80,000 per month

Intern

Recruitment Procedure

Round 1: Online test
50 MCQ on CS topics and simple maths (simple and compound interest)
1 Coding question which was based on basic number theory
I have heard from others that a suboptimal solution (which should not have passed according to constraints) did pass.

Optimal method was figuring out the formula using elementary number theory and applying Sieve of Erathosthenes followed by modular exponentiation.

Round 2: Hiring Manager
Resume based questions, some behavioural questions. No pure technical questions were asked.

Important Topics and Subtopics to Remember

DSA for coding test

Sources of Preparation

Geeks for Geeks, Leetcode, InterviewBit

Additional comments

Code quality was a major focus. Making wrapper functions and helper functions for everything is important in interviews. Space and time complexities were also focused upon a lot. The pros, cons and tradeoffs of data structures were also discussed while coding in interviews, so it is important to know why are you choosing a particular data structure in your code and why not something else.

Communicating effectively with the interviewer is very important especially in a virtual interview so that the interviewer is constantly in touch with your though process.

WalmartLabs

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IT

Stipend Offered: 80,000 per month

Intern

Recruitment Procedure

Round1: written test
60 minutes long: MCQ+one code
This was comprised of multiple MCQs which tested numerical ability, a bunch of Simple interest+compound interest questions, DSA theory, DBMS (not sure), Programming basics, etc. You had to be really quick and accurate
One code: WAP to find the prime factors of an input number. There were a bunch of test cases and we could choose any coding language.
Round2: interview
There was one simple dsa question which I unfortunately don't remember, I think it was based on arrays. There was a discussion about my background, what kind of role I might be interested in at walmart, how I'll be able to contribute to it.
As I had heard from seniors and friends in other colleges, walmart usually always has more HR-ish questions in their interview and give a lot of weightage to resume. Infact I think most people weren't asked any dsa in their interview.

Important Topics and Subtopics to Remember

DSA, CP. Some computers theory. Numerical and Mathematical ability.

Sources of Preparation

Geeksforgeeks

Additional comments

I would highly recommend everyone to see interview experiences of the company in the past year or so. I would also like to be very clear on that fact that whatever you speak during the interview can be used against you. I was asked ML the whole round in one of my interviews of another company as I told my interviewer that I had done projects in it. Be very careful in introducing yourself as you don’t want to say something just because it sounds good. It can come to bite you. Do the standard questions of each and every topic. And the most important thing is to not give up. Even if you don’t know the answer to a problem, try to think out loud and form a solution keeping the interviewer involved.

WalmartLabs

WFH

IT

Stipend Offered: 80,000 per month

Intern

Recruitment Procedure

Round 1: Coding Test
A mathematical coding problem for 50 marks.
MCQs on aptitude, OOP, DBMS, DSA for 50 marks.

Round 2: Hiring Manager Round
Started with the review of the coding test followed by detailed questions (technical as well as non technical) related to my work experience and projects. A few aptitude puzzles. Questions related to my interest in CS field being from an electronics background.

Important Topics and Subtopics to Remember

DSA, OOP, DBMS

Sources of Preparation

gfg

Additional comments

Utilize your summer vacation properly, since many of the students with CS background start DSA from 2nd semester of 2nd year so it is essential that you put in a lot of effort during the summer vacation. Always study topic wise at the start and for that InterviewBit, GeeksForGeeks and LeetCode are the best sources. When you feel like you have a grip over a considerable number of topics then shuffle them. Remember that it is essential to brush up on all concepts. Understand and code all famous questions. Don't just skip a question because it is tough, the interviewer might just ask that same question. Also do not lie on your resume. Remember your resume does not need to be fancy.
Lastly, don't be stressed and remember to enjoy the process.

Feel free to ping me if you have any doubts

WalmartLabs

WFH

IT

Stipend Offered: 80,000 per month

Intern

Recruitment Procedure

Round1 : Coding Test
Coding Test had 1 DSA Medium-Hard. 50% weightage. Rest questions were based on OOP, Mathematics and DBMS
Round2: Technical Interview: There were 4 questions:
1) Write a functions that takes n as an input and generates a number randomly between (0,n) with equal probability. You are given a helper function that generates 5 or 7 with equal probability .You also have to prove all numbers in (0,n) have equal probability.
2) For strings of size<=5 write a hash function that does not exceed INT_MAX and also show that for 2 different strings their hash value is different.
3)Given ABCD*4 = DCBA. Find ABCD.
4)Give a strategy to play tic tac toe that always result in a win or draw.
The interview was 45 mins long.This was the only interview

Important Topics and Subtopics to Remember

DSA,DBMS,OOP ,Some concepts of maths like simple and compound interests

Sources of Preparation

InterviewBit, College Curriculum

Additional comments

Just be cool and keep smiling. Having positive vibes always helps and don't stress too much on one thing. Don't give up, just keep grinding.

WalmartLabs

WFH

IT

Stipend Offered: 80,000 per month

Intern

Recruitment Procedure

Round 1: Online Assessment (Total = 100 marks)
Platform : HackerEarth
1 coding qn : 50 marks on Number Theory. The difficulty was comparable to ~1600 rated problems on Codeforces.
25 MCQs: 2 marks each and was based on core CS concepts like OOP, DSA etc. and aptitude as well.

Round 2: Interview
Platform: Zoom
This was the lightest interview a person could hope for. I introduced myself and then he asked me about my hobbies and to describe the projects mentioned in my CV. Most of the talk went on discussing the project work. Then he asked me a super easy coding question that was to print a simple pattern . After this he asked me why I wanted to join Walmart to which I answered based on what I had read about the company in the pdf that was given to us by them. The most important thing that worked in my favour was the interviewer's attitude. He was very chill and supportive during our conversation.
This was luckily the final round and the selected folks were contacted in a few hours.

Important Topics and Subtopics to Remember

DSA, OOP, DBMS.

Sources of Preparation

DSA: Leetcode, Interviewbit, Codeforces
OOP: Lectures slides , GFG
DBMS: Sanchit Jain videos and some parts from UC Berkley CS186 playlist. Both are on Youtube

WDC

WFH

Electronics
Summer Intern

Stipend Offered: 35,000 per month

Recruitment Procedure

Since the company came for the internship process really late (sometime in December) we didnt have a written round.
Round 1: Resume shortlisting
I just made sure my profile was electronics oriented and I included all the relevant projects and courses I had completed by then

Round 2: Interview
My interview last for around an hour, it was a phone-call interview. This was basically like a combination of the technical and HR round. I was asked questions based on DD and MuP (my understanding and general questions on flags, interrupts, FFs, and state flow diagrams).
After this he moved on to more project-specific questions. Just know your projects in detail and you'll be good to go.
Once the project based questions were completed, we moved on to more generic questions, I was asked about my interests, about my future plans and what I expect from this internship.

(in my opinion, its always a good thing to think out loud because then the interviewer will know about your thought process and thats very important. You dont have to necessarily always give the final answer)

Important Topics and Subtopics to Remember

Digital design, Microprocessors and Interfacing

Sources of Preparation

Resources shared by PU, Gate questions online for practice, class notes

THANK YOU!

If you have any concerns or doubts, please feel free to reach out to us at: puqueries@goa.bits-pilani.ac.in.

We wish you the best for your preparation and hope that you scale even greater heights with the help of your seniors!

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