Paytm Interview Experience

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Coding Round

Platform : *CoCubes*
Language : *C,C++,C#,Java,Golang*
Time: *70 minutes*
Number of questions : *3*

1. **Convert the number, given in the decimal number system, according to the following number system.**

   0 -> 9

   1 -> 8

   2 -> 7

   3 -> 6

   .

   .

   9 -> 0

   Input : 7845

   Output: 2154

2. **Rearrange the given array in such a way that odd numbers appear at odd indices and even numbers appear at even indices only. The relative ordering of numbers should remain the same.**

   Input : A = {3,8,23,16,17,24}

   Output : A = {8,3,16,23,24,17}

3. **Given two binary trees, T1 and T2, check whether T2 is a subtree of T1 or not. If either of the trees is NULL, return -1. If T2 is not a subtree in T1, return 0. If T2 is the subtree in T1, return the number of nodes in T2.**
- ***Only basic test cases were available and rigorous ones were hidden, so try to cover all possible edge cases before final submission.***
- ***Choose either CPP or java as your coding language and don't rely completely on STL because some companies allow STL while some don't.***

Technical Round 1 (45 minutes)

- The interviewer started with his introduction and then asked me for mine. He then asked me to mail my resume to him (Although he didn't ask anything from it).
- After that, he asked me if I am comfortable with the tree data structure and gave me the following question.

  Print all k-sum paths in a binary tree
- I gave the intuitive recursive approach and then he asked me to check if my code is covering all test cases.
- After checking my code thoroughly, I submitted the code and then he told me that vectors are always passed by reference so you must have popped the last element out of the vector after exploring a node. **I told him that in CPP, arrays are always passed by reference, not vectors but he didn't agree with me**. I tried to explain to him but he said, we can't spend more time on this question now and asked the time complexity of my code.
- He then asked if I am comfortable with arrays and gave me the following question.

  https://leetcode.com/problems/best-time-to-buy-and-sell-stock-iii/
- I asked for one example to better understand the question. I wanted to do this question using DP so, I gave him the recurrence relation and then he asked the time complexity of this recursive approach while writing the code.
- I wrote the code and told the time complexity.
- He then asked me how we can optimize this code. I replied, "with memoization".

  Stick to your point if you are confident enough with your fact. The interviewer might try to fool you with concepts of some other language.

Technical Round 2 (45 minutes)

- The interview started with warm greetings and then he asked me the following question:

  Minimum number of platforms
- I asked for one example to better understand the problem and then I proposed my approach through that example (greedy approach).

- He was satisfied with my approach and asked me for a suitable data structure for this problem. He didn't ask me to write a code for this problem.
- He then asked me the following question:

  https://leetcode.com/problems/reverse-only-letters/

- I gave him a linear approach and he asked me to write the code for it on Ideone and check the output for the given input.
- He was satisfied with the code and asked me if I am familiar with SQL. He then asked me different types of join in SQL and then tried to trick me by asking "difference between left inner join and right inner join" to which I replied "There is no left/right inner join" and then explained with the definition of inner join and concept of the outer join.
- He then asked me the following theoretical questions:
  - ➔ Difference between TCP and UDP.
  - ➔ Difference between compiler and interpreter.
  - ➔ Difference between the high-level language and low-level language and why is it called low-level language?
  - ➔ What is a kernel?
- He then asked me the following question :

  https://www.geeksforgeeks.org/check-if-given-sudoku-board-configuration-is-valid-or-not/

- He said this question is just for discussion only. So, take 3-4 minutes and tell me whatever comes into your mind. I told him the brute-force approach and then we discussed the optimal one.

  Do not take core CS subjects for granted. You should be familiar with the basics of core subjects.

Technical Round 3 (30 minutes)

- This round started with a quick introduction and then he asked me what challenges I faced during my ACMS project. I explained all the challenges I had encountered during that project and then he asked me the following coding question:

  https://www.geeksforgeeks.org/nth-node-from-the-end-of-a-linked-list/

- I gave him an approach using mathematical formula but he asked me another approach using a lesser number of comparisons to which I gave two pointers approach. He was satisfied with my approach and asked me to code for the same.
- After that, He asked me if I am aware of the Arogya Setu App and asked me how the Arogya Setu app sends alerts to the users when they are in the range of a COVID patient like how does the app identify the users to which it has to send alerts? (Hint: Range is depicted as a circle)
- I asked some examples for a better understanding and gave him the approach.
- He then gave me another variation. Suppose you are at position (x,y) and there are Billions of people around you with a given chance of having COVID infection. How will you identify the region where the chances of having COVID infection are minimum?

- I took some time to think about this problem and gave him a divide and conquer approach.

  Final Verdict: I got FTE along with 5 others.

Happy to help!!