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Amazon Interview Experience | Set 258 (Off-Campus for SDE-1)

- Difficulty Level : \nMedium
- Last Updated : \n04 Jul, 2019

I recently had interviews with Amazon at Hyderabad for SDE 1. I had around 1 year and 9 months of experience.

Telephonic Interview :

It started with a brief introduction of mine and my work. Then he asked me a coding question

1) Given a linked list eg : 1->2->3->4->5->6, make the following changes 1->6->2->5->3->4

Easy but it was lengthy. Had to write production level code.

After 2-3 hours, I got an invitation for in house interview at Amazon campus:

Round 1 : Face 2 Face

It started with a discussion about my previous work and projects. After the discussion he asked the following technical questions:

1) Given a pre-order traversal, construct a binary search tree.

Simple solution. Asked me to code it.

2) Given an alien dictionary, find the order of the alphabets in the dictionary.

Only the approach was required. I explained him the approach and he was satisfied.

3) Connect n ropes with minimum cost

I was asked to write production level code for the above problem.

Round 2 : Face to Face

Again the interview started with a discussion about my projects and then he asked a technical question.

1) Given m sorted arrays with n elements, merge these arrays into one sorted array of size m*n

I did hear about this question before but never really saw the optimized solution so I gave a $O(m*m*n)$ solution. He asked me to optimize it, but I wasn't able to do so, hence he asked me to code the $O(m*m*n)$ solution. I took a lot of time to code it as I wanted to handle all the edge cases. Finally I coded it. He didn't find any issues but he asked me to make it better. And then I suggested using heaps to get the minimum of all the m arrays.

Lot of questions on why heap and why not BST. Asked me to prove it mathematically.

But he was satisfied once I gave the solution using heaps.

<https://www.geeksforgeeks.org/merge-k-sorted-arrays/>

Round 3 Bar Raiser : Telephonic

Discussion on my previous projects and asked some behavioral questions like why are you leaving your current company, conflicts with your manager etc

Technical questions:

1) Find the maximum element in an array which is first increasing and then decreasing

2) Find the Pythagoras triplet in an array

Gave an $O(n^3)$ solution then made it $O(n^2 \log n)$. He asked me to optimise it even further.

Finally came up with $O(n^2)$ solution

3) Given a very large binary number which cannot be stored in a variable, determine the remainder of the decimal equivalent of the binary number when divided by 3

I had no clue about this question. He gave me a hint, with which I was able to solve it. But later, he asked me to find the remainder for any number k . Again he gave a hint and I was able to solve it.

Basically when we append a digit to a binary number, the previous binary number gets doubled, hence the remainder also gets doubled.

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\r\nFor example :      101  -> 5\r\n                      1010 -> 2*5 + 0 = 10\r\n                      1011 -> 2*5 + 1 = 11\r\n\r\nI
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By keeping track of the remainder of the previous binary number, the current remainder can be determined.

Round 4 Hiring Manager: Face to Face

Behavioral questions along with some questions about my previous projects.

Then he gave me a technical question:

1) Given a number say 1234, return the number in words i.e One thousand two hundred and thirty four

Was able to cover all the scenarios. He was satisfied with my approach

Suggestions:

Think loud and be confident. It's okay if you don't know the answer at first. They mostly see how you solve questions for which you don't know the solution.

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