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Amazon Interview Experience | Set 267 (8 Months Experienced)

- Difficulty Level :\nMedium
- Last Updated :\n26 May, 2021

Recently, I got a chance to be interviewed by Amazon at Bangalore campus, through referral.\xc2\xa0
I had 8 months of experience in a product based company and 5 months of Internship.\xc2\xa0

1st Round Telephonic :\xc2\xa0
There were two guys, started with a formal introduction.\xc2\xa0
Question 1 : Given an array and a number say \xe2\x80\x9cNum1\xe2\x80\x9d. Find two numbers whose sum is equal to given number \xe2\x80\x9cNum1\xe2\x80\x9d.\xc2\xa0

I told him first Brute Force solution then he asked the time complexity which i told him O(n^2).\xc2\xa0
Then he asked me to optimize the solution and I gave a O(nlogn) solution using sorting.\xc2\xa0
And at last I told him O(n) solution using Hashing.\xc2\xa0

Question 2 : Given an array of stock prices . Determine the maximum profit one can get by buying and selling the stock(Similar to stack span problem).\xc2\xa0
I told him brute force solution of O(n^2) then he asked me if you could give an optimized solution.\xc2\xa0
I told him O(n) solution using stack but code got stuck on some of the test cases and he asked me to modify the code but i couldn\xe2\x80\x99t as they were running out of time.\xc2\xa0
They provided me a link to Colabedit(kind of google shared document) where i had to code.Production ready code was required.\xc2\xa0
After 2 days I got call from Amazon saying that feedback was positive and they asked me to come for face to face interview at Amazon\xe2\x80\x99s office.\xc2\xa0

F2F Round 1 :\xc2\xa0
Started with a brief introduction.\xc2\xa0
Q1: Given a M*N matrix. you have to start from Index(0,0) and reach to Index(M-1,N-1) with maximum sum , given the constraint that you can only move right or down i.e if you are at index (i,j), you can only move to index(i,j+1) or to index(i+1,j)\xc2\xa0
I gave recursive solution for this and there were a lot of discussion on various test cases.\xc2\xa0
He asked me to optimize the code. I gave him Dynamic programming approach . He asked that have you done it before and i said no then he asked me to code it. I had no idea of the code as i haven\xe2\x80\x99t done it before. i struggled to write the correct code 2-3 times and at last i wrote the correct code.\xc2\xa0
Then he said to me i am done with the interview, Do you have any question for me and i asked two question.\xc2\xa0

Production ready code was required.\xc2\xa0

F2F Round2 :\xc2\xa0
Again Started with a brief introduction and some project discussion.\xc2\xa0
Q1: A question similar to LCA(Least Common Ancestor) of Tree and I gave the answer immediately as I have understood the question and didn\xe2\x80\x99t ask any further clarification.\xc2\xa0
Q2: Given some resources in the form of the linked list you have to cancel out all the resources whose sum up to 0(Zero) and return the remaining list.\xc2\xa0

I gave the solution immediately but couldn\xe2\x80\x99t handle some of the corner test cases then he asked me to modify the code accordingly.\xc2\xa0
Then he asked me to write all the test cases for it and i did.\xc2\xa0
For eg; given the resources like this :\xc2\xa0
case 1 : 6 -6 8 4 -12 9 8 -8 It should return 9 as all others get canceled.\xc2\xa0
In the above example lists which gets canceled :\xc2\xa0
6 -6\xc2\xa0
8 4 -12\xc2\xa0
8 -8\xc2\xa0
o/p : 9\xc2\xa0
case 2 : 4 6 8 -9 10 -9\xc2\xa0
o/p : 4 6\xc2\xa0
case 3 : 4 6 -10 8 9 10 -19 10 -18 20 25\xc2\xa0
O/P : 20 25\xc2\xa0

F2F Round3 :\xc2\xa0
Started with a formal introduction and BTW he was the same guy who took my telephonic interview.\xc2\xa0
Q1) He asked me subset sum problem i.e; Given an array find the maximum sum contiguous subarray.\xc2\xa0
I gave O(n) a solution for finding the maximum sum immediately after he asked the question as I knew the solution.\xc2\xa0
Then he asked me to trace the code for some test cases and it passed. Then he asked me to find the starting and end index of the subarray and I modified the code and initially got wrong but after some modification, I got the code right.\xc2\xa0

Q2) Sum of numbers represented by two linked list.\xc2\xa0
And I gave the answer immediately after he finished the question. But I gave the soln for adding two linked list numbers starting from the beginning but he told me to add the numbers as we do in normal addition.\xc2\xa0
And I gave that solution by reversing the linked list and then adding the numbers and finally reversed the resultant list.\xc2\xa0
After 2-3 days I got a call from Amazon that I have cleared the rounds and they asked me to come for Hiring Manager Round.\xc2\xa0
One of the interviewers gave me feedback that he mugged the answer as I gave the answer immediately after the interviewer asked the question as I came to know later which was a major setback for me.\xc2\xa0
So one of the advice would be to all of you that Even though you know the answer pretends that you don\xe2\x80\x99t know. Ask some clarification question, As they also observe your problem-solving skills with coding.\xc2\xa0

Hiring Manager Round F2F :\xc2\xa0
Started with some basic questions and then asked why do you want to leave your current company and then he asked code Of the Fibonacci series.\xc2\xa0
I explained the Fibonacci series and then he asked me to code it.\xc2\xa0
I wrote the code and traced some inputs.\xc2\xa0
Then he had a meeting as I reached late there so he asked me to improve the code as he said there is some bug in the code and I did.\xc2\xa0
After that, he asked me to write recursive code for it.\xc2\xa0
Then he asked the time complexity of the code and I said Exponential.\xc2\xa0
Then he asked me to prove it.\xc2\xa0
I said sir I could do it using Master Theorem or using Mathematical Induction. But right now I remember none of them.\xc2\xa0
Then he told me that you can do it without Master Theorem or MI. Then in my mind, it struck me as

the Recursion Tree Method but at that time I didn\xe2\x80\x99t have any idea of the recursion tree method as well. So I couldn\xe2\x80\x99t tell him.\xc2\xa0
This round wasn\xe2\x80\x99t positive as I knew right after my interview. I got eliminated after this round.\xc2\xa0

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All Practice Problems for Amazon !\xc2\xa0

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