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Amazon Interview Experience | Set 351 (Off Campus \xe2\x80\x93 For SDE I)

- Difficulty Level :\nMedium
- Last Updated :\n10 Jul, 2019

I attended the referral drive in Delhi, so we had to report to 10:00 AM at Amazon\xe2\x80\x99s office.

ROUND 1: Written \xe2\x80\x93 Pen & Paper (11:00 \xe2\x80\x93 12:00 PM)
You have to write a short description first of your approach, put comments if necessary to explain that line\xe2\x80\x99s logic. Full Optimize Code should be written covering all the edge cases. Also mention the complexities.

1. Sorted Array to Balanced BST.
2. Detect and Remove loop in linked list.

ROUND 2: Face to Face (02:00 \xe2\x80\x93 03:30 PM)
This was the Technical Round, start with your basic approach and then move further to optimized ones. Interviewer will expect you to write fully fledged code (the optimized approach one) covering all the edge cases and also derive it\xe2\x80\x99s complexities. If he\xe2\x80\x99s not satisfied with any of the space and time complexities he will urge you to provide him that solution, and this happens a lot in Amazon\xe2\x80\x99s interviews.

1. Given a number N, you can do three operations like (N-1, N/2, N/3) find the minimum number of steps in which N can be reduced to 1 using these three operations.
   Minimum Steps to reach 1.
   First gave him recursive approach, gave him space time complexities. Then told him dp one and it\xe2\x80\x99s space time. Then he told me to code the dp approach.
2. Max Sum Path across two sorted arrays.
   Gave him the solution using space O(m+n) and time O(m+n), wrote the code for it. Then he demands to solve it in O(1) space and O(m+n) time, spend some time and coded it too.

ROUND 3: Face to Face (05:00 \xe2\x80\x93 06:30 PM)
Again Technical Round, this round was more DS specific, we have to write fully optimized code which will cover all test cases.

1. Width of a Binary Tree
   Gave him many approaches, had discussions on Level Order traversals as well. At the end wrote the code for it.
2. Print Vertical Order Traversal
   Told him the approach using Maps of STL but for that i had to sort it for displaying in the correct order, which would take extra time complexity, so came up with the solution of adding the results direct to array without using Hashmaps. (as the HDs are consecutive -2, -1, 0, 1, 2 so you can also take array and manipulate some insertions there).

Round 4: Hiring Manager Round (07:30 \xe2\x80\x93 09:00 PM)

1. Started with a technical question : Kth largest element in a stream of integers.
   Have to wrote the code using Heap along with all the util functions of Heaps as well.
2. Tell me something about yourself, about your company, what kind of projects did you do, what extraordinary did you do, Was there any kind of appreciation received in your current company.

3. Told me about the work his team is doing, asks me some behavioral questions like, Was there any kind of conflict between you and your manager at some point of time, how did you resolve that ? What would you do if the deadline marked by you to complete a task has been passed ?

After 1 week\xe2\x80\xa6

ROUND 5: Hiring Manager Round (Telephonic : 1 hr)
Started asking about myself and getting to know me by asking deeper about my background. This round was \xe2\x80\x9cdive deep\xe2\x80\x9d anything you utter from your mouth he will drill into it.

1. Technical Question : Have you studied Data Compression. What are it\xe2\x80\x99s various techniques. I listed Huffman and Run Length.
   - [Running Length Encoding](#)
   - [Huffman Coding](#)
   1. He told me to code Run Length.
   2. Then told me to do an in-place Run Length encoding given a string of chars.
      It fails some cases where the original string as many unique characters so that the string length would increase and thus cannot be converted in-place. I told him so and suggested i would take a vector in case of any additions is to be made. He then asks for these strings where compressed length is increase how can we identify that.
   3. Identify the strings which cannot be compressed using this method and compress those which can be. Wrote code and explain it to him.
   4. What can be the practical applications of this algorithm, i told him that warehouses like AWS Redshift already does Data compression, listed him some other useful one\xe2\x80\x99s like they already use for Dates Column.
2. Projects discussions, and have to explain one project to him in detail. he posed several design flaws in my project and asked me for their solutions. This part was very critical as he drilled me to some cases and i had to come up with some technical solution or to correct him if it was a invalid business use case.
   In this way he also checked how much knowledge i have of business apart from technical.

After 5 days : Congratulations from Amazon.com we will be going to offer employment offer for you \xf0\x9f\x99\x82
Status : Selected

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My Personal Notes\n*arrow_drop_up*

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