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Amazon Interview Experience for SDE-1 | Off-Campus 2021

- Last Updated :\n12 Jan, 2022

Role: SDE1

Source: naukri.com

Online Round: 2 Coding Question with Time Complexity Analysis

1. Similar to nearest K coordinates from Origin. (Heap)
2. Little bit of modification of 2-Sum, but I did in Brute Force way and it passed.

In the Last behavioural based MCQ Test.

After 5 days I got an email in which it mentioned that I will be having a quick connect with HR for Rounds Process.

Round 1:

- Quick Intro
- BST Iterator https://leetcode.com/problems/binary-search-tree-iterator/ (Medium)
- Basic Calculator https://leetcode.com/problems/basic-calculator/ (Hard)
- I Solved both but for last one my code was not 100% complete as we were running out of time but I gave the approach and final Time Complexity.

Round 2:

- Paint House https://www.lintcode.com/problem/515/?_from=[\xe2\x80\x98ladder\xe2\x80\x99]&fromId=[\xe2\x80\x9916\xe2\x80\x99] (Premium on Leetcode, so attaching free Resource)
- BFS on Grid, The question was like you are given 2D Matrix with 0,1 and a starting coordinate from that you have to cover all 1\xe2\x80\x99s and tell how much minimum time it will take to do that and if any 1 is left return -1.

Round 3(Behavioural, taken by SDM III):

- This Round was like brief Introduction, and that started with LP Questions
- A Deadline you missed.
- A Goal that you thought you will not be able to achieve but you did.
- A most Challenging Task you did.
- CS Fundamentals Questions, like difference between HTTP vs HTTPS, Thread vs Process, Memory Leak in Java, Classfull IP and its all Classes.
- After about a week I got an email that I am having my Last Round Next Week.

Round 4:

- A Small Introduction
- LP Questions
- 1 Coding Questions (Now for this I want to share that Interviewer itself was in doubt, the question was like you are given a Binary Tree with atmost 2 child and every child can have atmost 2 Parents, and you have to find a Maximum Path Sum from Root to Leaf)
- I asked what is the structure of that Node, So he said what you think. I wrote this:

Java

```
class Node
\xc2\xa0\xc2\xa0
{
\xc2\xa0\xc2\xa0
int data;
\xc2\xa0\xc2\xa0
Node left;
\xc2\xa0\xc2\xa0
Node right
\xc2\xa0\xc2\xa0
}
```

- So he said Yes this is, (Now I was confused how come this can have links with Parent, maybe I am not able to get!)

  Sample Test Case:

  \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 1

  \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0/ \xc2\xa0 \xc2\xa0 \xc2\xa0\\

  \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 2 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 3

  \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0/ \xc2\xa0 \\ \xc2\xa0 \xc2\xa0 \xc2\xa0 / \xc2\xa0\\

  \xc2\xa0 \xc2\xa0 \xc2\xa04 \xc2\xa0 \xc2\xa0 \xc2\xa0 5 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa06

  ```
  O/P: [1,3,6]
  ```

- So, 1st Solution that I gave was normal dfs based that I try every path from root till every Leaf and in that method I take current_sum and one global_sum and update it accordingly.

Java

```
int ans = 0;
\xc2\xa0\xc2\xa0
List<Integer> finalAns;
\xc2\xa0\xc2\xa0
private void dfs(TreeNode root, int csum, List<Integer> ds)
\xc2\xa0\xc2\xa0
{
\xc2\xa0\xc2\xa0
if(root==null) return;
\xc2\xa0\xc2\xa0
if(root.left==null && root.right==null)
\xc2\xa0\xc2\xa0
{
\xc2\xa0\xc2\xa0
\xc2\xa0if(csum > ans)
\xc2\xa0\xc2\xa0
\xc2\xa0{
\xc2\xa0\xc2\xa0
\xc2\xa0\xc2\xa0ans = csum;
\xc2\xa0\xc2\xa0
\xc2\xa0\xc2\xa0finalAns = ds;
\xc2\xa0\xc2\xa0
\xc2\xa0}
\xc2\xa0\xc2\xa0
\xc2\xa0return;
\xc2\xa0\xc2\xa0
}
\xc2\xa0\xc2\xa0
ds.add(root.val);
\xc2\xa0\xc2\xa0
dfs(root.left,csum+root.val,ds);
\xc2\xa0\xc2\xa0
dfs(root.right,csum+root.val,ds);
\xc2\xa0\xc2\xa0
ds.remove(ds.size()-1)
\xc2\xa0\xc2\xa0
}
\xc2\xa0\xc2\xa0
pubic List<Integer> solve(TreeNode root)
\xc2\xa0\xc2\xa0
{
\xc2\xa0\xc2\xa0
this.ans = 0;
\xc2\xa0\xc2\xa0
this.finalAns = new ArrayList<Integer>();
\xc2\xa0\xc2\xa0
this.dfs(root,0,new ArrayList<Integer>());
\xc2\xa0\xc2\xa0
return this.finalAns;
\xc2\xa0\xc2\xa0
}
```

- Time Complexity: O(more than N) I was not able to figure out but it is I guess O(N^2)
- So, he told me to optimise it I told him that I will do something Post Order type Traversal and from left and right I will bring answer. But he told me that this will not work, So I was not able to find something better.

Conclusion: Be Confident in LP Questions, discuss Brute Force first.

Verdict: Rejected

My Personal Notes\n*arrow_drop_up*

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