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Amazon Interview Experience for SDE-2

- Difficulty Level :\nMedium
- Last Updated :\n25 Nov, 2019

Round 1: DS Algo round

The interviewer asked me about briefly my current experience, but that didnt seem like the goal of the interview round.

Then he started with ds algo questions. Below are the specific questions he asked:

1. Given a string and \xe2\x80\x9cab\xe2\x80\x9d, determine if the string can be generated by \xe2\x80\x9cab\xe2\x80\x9d. If it can form, then return true or else return false.\xc2\xa0Initial assumption is that the given input string will only contain characters \xe2\x80\x98a\xe2\x80\x99 and \xe2\x80\x98b\xe2\x80\x99.
   - Examples:
     - \xe2\x80\x9caaabbb\xe2\x80\x9d \xe2\x80\x93 true
     - \xe2\x80\x9ccaabb\xe2\x80\x9d \xe2\x80\x93 false
     - \xe2\x80\x9cabababab\xe2\x80\x9d \xe2\x80\x93 true
     - \xe2\x80\x9caaabbbb\xe2\x80\x9d \xe2\x80\x93 false
   - Basically the rule is, for each \xe2\x80\x98a\xe2\x80\x99 in the given string, there should be a corresponding \xe2\x80\x98b\xe2\x80\x99 after that \xe2\x80\x98a\xe2\x80\x99.
   - My solution:
     - Have a counter set to 0
     - traverse through the string, for each character, if it is \xe2\x80\x98a\xe2\x80\x99, increment the counter, if it is \xe2\x80\x98b\xe2\x80\x99, decrement the counter.
     - At any point in array, if the counter is less than 0, then return false.
     - Once the array traversal is over, then if the counter is 0, then return true else return false.
   - He then asked to consider the input array having other characters than \xe2\x80\x98a\xe2\x80\x99 and \xe2\x80\x98b\xe2\x80\x99 as well.
   - Asked to write production level code to solve this problem. But I had to only write the method.
2. Reverse every k element set of singly linked list.
   - Examples:
     - list: 1 2 3 4 5 6 7 8 9, k:3 \xe2\x80\x94 output: 7 8 9 4 5 6 1 2 3
     - list: a b c d e f g h i j k l, k : 4 \xe2\x80\x94 output: i j k l e f g h a b c d

Then one more question: What would you do if you have 5 tasks, and a deadline where you can only perform 3 tasks. What would you do?

Round 2: DS Algo (again)

This round also was about ds and algo, but before going to that, he asked a couple of work related questions like:

- Tell me about yourself
- What is the daily work that you have to do, specific to your role and responsibilities

Then he moved to ds algo questions:

1. Consider the number keypad of old mobiles. number 2 will be associated with a, b, c. number 3

is associated with d, e, f. number 4 is associated with g, h, i\xe2\x80\xa6. so on and number 9 is associated with w, x, y, z. Now, the input to your method is\xc2\xa0 a number. You have to print all the strings that can be formed by that number considering the association described.

- Examples:
    - Input is 23 \xe2\x80\x94 output would be { ad, ae, af, bd, be, bf, cd, ce, cf}
    - Input is 259 \xe2\x80\x94 output would be { agw, agx, agy, agz, ahw, ahx, ahy, ahz, aiw, aix, aiy, aiz, bgw, bgx, bgy, bgz, bhw\xe2\x80\xa6\xe2\x80\xa6. ciw, cix, ciy, ciz}

2. Zig zag printing of a binary tree of node type as string, but when you are printing right to left, you need to print string in reverse.
    - Example:

\xe2\x80\x9cabc\xe2\x80\x9d

|\xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0 \xc2\xa0\\

\xe2\x80\x9cdef\xe2\x80\x9d\xc2\xa0 \xc2\xa0 \xc2\xa0 \xe2\x80\x9cghi\xe2\x80\x9d

|\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\\

\xe2\x80\x9cjk\xe2\x80\x9d\xc2\xa0 \xe2\x80\x9clm\xe2\x80\x9d \xe2\x80\x9cno\xe2\x80\x9d\xc2\xa0 \xe2\x80\x9cpq\xe2\x80\x9d

\xc2\xa0

The output would be:

abc

ihgfed

jklmnopq

\xc2\xa0

Round 3:

I was rejected in the second round. I do not know the reason because I had given right answer to all the questions, and wrote working code on paper as well. Anyways, \xe2\x80\x9ckuch koshishen taiyaari ke liye hoti hain\xe2\x80\x9d right? \xf0\x9f\x99\x82 All the best my fellow geeks!!

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