GROUP FLY ROUND

In the group fly round we were expected to write a clean code for two problems given to us. Following were the two problems:

1. Given a string, find the longest substring which is palindrome. Ex: xyzabccbaty. Answer is abccba.
   They were expecting O(n^2) solution with O(1) extra space , though it can be solved in O(n) time as well.
2. Given a matrix we were to print its content in spiral form.

Our papers were collected to be checked by their team. Selected ones moved to further rounds.

ROUND 1

In the first interview round the interviewer asked me my favourite data structure to which I replied graphs.

So his first question was a problem the solution to which was the topological ordering of the graph. He immediately moved to the next question skipping the first, on hearing the word topological ordering. His next question was given a number represented in linked list such that each digit corresponds to a node in linked list , add 1 to it. For example 1999 is represented as (1-> 9-> 9 -> 9) and adding 1 to it should change it to (2->0->0->0). Return the head of new linked list. I told him two different approaches to which he was not satisfied. Then finally moved to the solution which he wanted. His next question was “Given arrival and departure times of all trains that reach a railway station, find the minimum number of platforms required for the railway station so that no train waits.We are given two arrays which represent arrival and departure times of trains that stop”.

Next he asked this problem “Given an array containing only 0s and 1s, find the largest subarray which contain equal no of 0s and 1s. Expected time complexity is O(n).”

ROUND 2

First problem was given a string of distinct letters print all possible combinations. Ex: if string is abc answer is a,b,c,ab,bc,ac, abc.

Next problem was Sort a linked list of 0s, 1s and 2s.

Next he had some discussion on how would a malloc be implemented.

FINAL ROUND

In this round I was given a single problem. The problem was “A Tic-Tac-Toe board is given after some moves are played. Find out if the given board is valid, i.e., is it possible to reach this board position after some moves or not”. This problem included many cases to be covered so it took a little longer to solve. Also code became a great mess due to regular insertions in between but she was considerate of that.

Interviewer in all of the rounds were very friendly. They listened patiently to the solution even when my solution differed from what they were expecting (which happened in most of the problems though time and space complexity were same). They even asked for proofs of correctness to some of my solutions if it was not clear to them. They had discussion on various approaches to solve each one of the problems.

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