Microsoft Internship Experiences

Name *

Bhavin Kotak

Group Fly Round

Longest palindromic sub-string: Find all odd length & even length palindromes and take maximum of both, another approach is to reverse the original string and take longest common sub-string of both original and reversed string. I discussed both the approach with the mentor and wrote the code for 1st approach.

Spiral traversal of a matrix: Wrote a pseudo code for the problem. First print the outer ring of matrix i.e. top row, right column, bottom row, left column and recursively print the inner matrix.

Interview - 1

Two questions were asked in this round.
Q1 - You have a juicer in which in you can process fruits of size less than equal to 'b'. If the size of fruit is greater than 'b' then discard it. Once the juicer is filled upto 'd' , drain it and continue processing remaining fruits. Find the number of times juicer is drained.

Sol: The question was very simple, just a single iteration in O(n).

Q2. You are given 'n' cards where n is an even number. Each card has a number on it (not necessarily unique) . There are n/2 players and your task is to assign two cards to each of them such that sum of cards given to each player is always same. Given that the solution is always possible, print the indices of the card that is assigned to each player.

Sol: I gave a hashmap (int, vector<int>) based approach. First find the sum of all cards and divide it by number of players. You will get the partition size. Now iterate through the array and insert into map the element of the array as key and index as value. Also maintain a 'taken' boolean array which maintains the index of element already taken.
For each element in array which is NOT taken, find an element (parition size - element) in hashmap and print the index. Update the hashmap and taken array.

Interview - 2

Q1: A variation of zig-zag traversal of tree similar to this
https://www.geeksforgeeks.org/zigzag-tree-traversal/

Q2: Create a height balanced BST from sorted array
https://www.geeksforgeeks.org/sorted-array-to-balanced-bst/

I explained the approaches for both the question and was asked to pen down the solution considering all the edge cases. The interviewer did a dry run and seemed to be satisfied with the solution.

Interview - 3

The last round was taken by a seemingly senior recruiter. She scanned through my resume and asked questions related to the project. I was asked to write codes for Serialization and De-Serialization of binary tree.

Interview - 4

Remarks

In your opinion, how one should prepare for Microsoft?

Microsoft focus majorly on Linked List and Tree based questions. For each round the interviewer was looking for optimal and neat code and make sure to consider the corner cases.