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Amazon Interview | Set 15

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For the position SDE I.

I had an online test through interviewstreet and following were the questions:

1. Inorder Successor in BST
2. K distance from root
3. Clone a linked list with next and random pointer

F2F Interview :
1. Generate all valid permutations using \xe2\x80\x98(\xe2\x80\x98 and \xe2\x80\x98)\xe2\x80\x99. Valid permutation is the general definition of valid sequence of the opening and closing brackets.

I told him a solution where we would generate a combination using a recursive solution and prune the cases where a valid combination is no longer possible. The solution was fine and not that difficult. But the interviewer was very interested in knowing if I can calculate the complexity of the solution. He gave me some hints but it was just not striking me. I told him my approximate answer. We moved on.

2. Create an ancestor matrix for a tree.

The solution would seem simple. But since the matrix is N*N, the interviewer wanted some tricks to reduce the complexity of the write operation on the matrix.

I told him a solution where you can initialize the matrix with all zeros and only write 1 for the ancestor cell using a modifies recursive solution and linkedlist.
He was fine with the solution

F2F 2:

1. Find the maximum weight node in a tree if each node is the sum of the weights all the nodes under it. Obviously tree nodes can have negative weights.

2. Kadane\xe2\x80\x99s algo

F2F 3:

1. Find the diameter of a tree.

2. Link every node of a level to the next node at the same level

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\r\neg:\r\nTree is: \r\n                    1\r\n                2    3\r\n              4   5 6   7\r\nwould be
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3. Find the first subarray which has a zero sum in an array

F2F 4:
Detailed discussion on projects I did in college and about my interests.

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