Hash Table Questions

Question 1 :

Bottom View of a Binary Tree

The top view of a binary tree is the set of nodes visible when the tree is viewed from the top. Given a binary tree, print the top view of it. The output nodes can be printed in any order.

Sample Input :

Sample Output : 5 10 3 14 25

Hint : Use the concept of Vertical Order

Question 2 :

Two Sum

Given an array of integers arr[ ]and an integer target, return indices of the two numbers such that they add up to target.

You may assume that each input would have exactly one solution, and you may not use the same element twice. You can return the answer in any order. [Go to Qs]

Sample Input 1 : arr = [2, 7, 11, 15], target = 9

Sample Output 1 : [0, 1]

As arr[0] + arr[1] == 9, we return [0, 1].

Sample Input 2 : arr = [3,2,4], target = 6

Sample Output 2 : [1, 2]

Question 3 :

Sort by Frequency

Given a string s, sort it in decreasing order based on the frequency of the characters. The frequency of a character is the number of times it appears in the string.

Return the sorted string. If there are multiple answers, return any of them. [Go to Qs]

Sample Input 1 : s = "cccaaa"
Sample Output 1 : "aaaccc"
Both 'c' and 'a' appear three times, so both "cccaaa" and "aaaccc" are valid answers.
Note that "cacaca" is incorrect, as the same characters must be together.

Sample Input 2 : s = "tree"
Sample Output 2 :"eert"
'e' appears twice while 'r' and 't' both appear once.
So 'e' must appear before both 'r' and 't'. Therefore "eetr" is also a valid answer.

Question 4 :

Bulls & Cows

You are playing a game with your friend. You write down a secret number and ask your friend to guess what the number is. When your friend makes a guess, you provide a hint with the following info:

- The number of "bulls", which are digits in the guess that are in the correct position.
- The number of "cows", which are digits in the guess that are in your secret number but are located in the wrong position. Specifically, the non-bull digits in the guess that could be rearranged such that they become bulls.

Given the secret number secret and your friend's guess guess, return the hint for your friend's guess.

The hint should be formatted as "xAyB", where x is the number of bulls and y is the number of cows. Note that both secret and guess may contain duplicate digits. [Go to Qs]

Sample Input 1 : secret = "1807", guess = "7810"
Sample Output 1 : "1A3B"
Explanation: Bulls are highlighted with orange and cows are underlined:
"1**8**07", "7810"

Sample Input 2 : secret = "1123", guess = "0111"
Sample Output 2 : "1A1B"
Explanation: Bulls are highlighted with orange and cows are underlined:
"0**1**11", ("011" or "011")