Kaushal Raj
Q. 1. Given a binary tree print path between two nodes in a Binary Tree if exist in o(n) time.
Q. 2. Given two array profit, capital and two int k and initial_capital we have to maximise the profit by spending in k capital with given initial_capital.

Saurav Dudhate
Q.1. Construct Binary Tree from String with bracket representation
Q.2 Divide a string into partitions such that the characters appearing inside the partitions are mutually exclusive

Ayush Gupta
Q.1. Given a string partition it such that no two partitions have same character (You need to return the maximum no of partitions that can be formed by this way)
like
'abc' can have 3 partitions['a','b','c']
'aba' can have only 1 partition['aba']
'abac' can have 2 partitions : ['aba','c']

Q.2. Given a binary tree, convert it into a linked list(preorder traversal) such that the left pointer is null and the right pointer points to the next element in the linked list(Use only the nodes and do not initialise new nodes).

Pranita Pawar
Q.1 Given an array, find the maximum (j-i) such that arr[j]>arr[i].
(Hint: For nlogn complexity use a prefix array that is max element while travelling backwards)
Q. 2 Grid m×n given consisting of zeros and ones. 1 and 0 are obstacles and safe places respectively. Can not move from obstacles. Move either right or down(by one unit) and reach till end(m-1, n-1). Find the number of ways you can reach till the end starting from (0, 0).
(Use recursion then optimise it with dp) .

Aman Jha
1. Is the tree a binary search tree? Space complexity? Time complexity?
2. Reverse linked list in a group of size K?

Kanak
1. Given a 2D binary matrix filled with `0`'s and `1`'s, find the largest rectangle containing all ones and return its area.

Bonus if you can solve it in O(n^2) or less.

Example :

```
A : [  1 1 1
```

```
    0 1 1
    1 0 0
]

Output : 4
```

2. Given a list **arr[]** of everyday temperatures. For each day, the task is to find the count of days remaining for the next day with warmer temperatures. If there is no such day for which warmer temperature is possible then print **0**.

Gnaneshwar -

1. Given infinite array we need to find median upto the the index we reach in efficient way,there can also be duplicates in the array

Eg :-input - 5,15,1,3……..(infinite array)
Output - 5,10,5,4……

+ Project discussion.

Sanju

1. Given a matrix of n*m with values -1,1 or 0. In one time you can Transverse left, right , up , down and replace -1 with 1. If the cell is 0, you can't move from that cell. Output min time to convert all 1s to -1 s.
2. Partition a given string such that the partitions do not have any common elements.

Dashrath

1 given an array you need to arrange the elements of array in such a way so that elements at odd index should be greater than its neighbour elements (in o(n))

Ex

Input 4 1 3 5 8

output 1 5 4 8 3

1 given a tree and in this tree one extra node is added so that the resultant graph is forming 1 cycle so you need to return the edge which if i remove then the graph again will be a tree .

Animesh:

1. Given a binary tree (pointer to the root node), find the time taken to burn the entire tree if we burn the root at t=0 and the fire spreads to adjacent nodes every second. [Hint: Deepest path]
2. Follow up: Find the time to burn the entire tree if at t=0 we burn a given node (not necessarily root).

[Hint: Use 2 traversals, 1st to store the deepest path in each subtree, find the answer in the 2nd one]

Shivam krishna:

1. Rotate linked list k times(k can be negative also)
2. Given an array, find the maximum (j-i) such that arr[j]>arr[i].
   (asked both (o(n2) and o(nlogn) approach, coded nlogn approach)

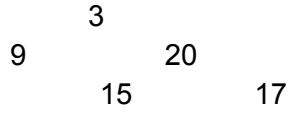
Khushi

1. There are n cities in a town connected by roads between some of the cities. After a flood, the roads get broken/damaged. The government wants to build schools and repair roads so that each city has access to school. Given the cost of building a school and repairing a road, find the minimum cost of doing so.

   Input:
   n = 7// no of cities
   c_school = 3 //cost of building a school
   c_road = 2 // cost of building a road
   connected_cities = [(1,7), (1,2), (1,3), (2,3), (5,6), (6,8)]

   Output = 3*3 + 2*5 = 19

2. Given a binary tree, print it's nodes in level order traversal but in a zigzag manner.
   Eg:



   Output - 3, 20, 9, 17, 15

Yash pant:
Given a grid of rotten and fresh eggs apart from some empty cells.
Find the minimum time to infect all rotten eggs.

Find if the bst is a valid bst.

Siddhant Gupta

1. Sort a linked list without using arrays (Merge Sort)
2. Implement a balanced bst if given a sorted linked list.

Surmai

1. Find the next greater element to the right in the given array
2. In a party of N people, only one person is known to everyone. Such a person may be present in the party, if yes, (s)he doesn't know anyone in the party. We can only ask

questions like “does A know B? “. Find the stranger (celebrity) in the minimum number of questions.
We can describe the problem input as an array of numbers/characters representing persons in the party. We also have a hypothetical function HaveAcquaintance(A, B) which returns true if A knows B, false otherwise. How can we solve the problem?

Ashutosh Kumar:

1. Given a boolean 2D array, where each row is sorted. Find the row with the maximum number of 1s.
2. Given a grid of dimension nxm where each cell in the grid can have values 0, 1 or 2 which has the following meaning:
   0 : Empty cell
   1 : Cells have fresh oranges
   2 : Cells have rotten oranges
   We have to determine what is the minimum time required to rot all oranges. A rotten orange at index [i,j] can rot other fresh oranges at indexes [i-1,j], [i+1,j], [i,j-1], [i,j+1] (up, down, left and right) in unit time.
3. Find two numbers whose sum and product is given.

Neha Jadhav

1. Same as to Surmai's 1st question
2. Same as to Ashutosh Kumar's 2nd question

Medha Singh

1. In a given array find the max sum of subarray.
   Ex: [-100,-10,50,49] array was given and the required output should be 99.
2. Interview asked if I had any questions to ask from him ?

Aditya Kumar

1. Given an m*n binary matrix. An island is a group of 1’s(representing land) connected 4-directionally(horizontal or vertical). The area of an island is the number of cells with a value 1 in the island. Return the maximum area of an island in the grid. If there is no island, return 0.(Use BFS or DFS)

2. Given a list **arr[]** of everyday temperatures. For each day, the task is to find the count of days remaining for the next day with warmer temperatures. If there is no such day for which warmer temperature is possible then print **0**. (Hint: Next greater to the right implementation).

3. Minimum cost to reach bottom right from top left in a grid.(Hint: DP on grids).