Week 14- Day 1 : Coding Challenge

(Maximum marks -15)

Q-1) Diameter of a binary tree

https://leetcode.com/problems/diameter-of-binary-tree/description/

(5 marks)

(Easy)

Given the root of a binary tree, return the length of the diameter of the tree.

The diameter of a binary tree is the length of the longest path between any two nodes in a tree. This path may or may not pass through the root.

The length of a path between two nodes is represented by the number of edges between them.

Example 1:

Input: root = [1,2,3,4,5]

Output: 3

Explanation: 3is the length of the path [4,2,1,3] or [5,2,1,3].

Q-2) Find the Town Judge **(5 marks)**

https://leetcode.com/problems/find-the-town-judge/

(Easy)

In a town, there are `n` people labelled from `1` to `n`. There is a rumor that one of these people is secretly the town judge.

If the town judge exists, then:

1. The town judge trusts nobody.
2. Everybody (except for the town judge) trusts the town judge.
3. There is exactly one person that satisfies properties 1 and 2.

You are given `trust`, an array of pairs `trust[i] = [a, b]` representing that the person labelled `a` trusts the person labelled `b`.

If the town judge exists and can be identified, return the label of the town judge. Otherwise, return `-1`.

Example 1:

```
Input: n = 2, trust = [[1,2]]
Output: 2
```

Example 2:

```
Input: n = 3, trust = [[1,3],[2,3]]
Output: 3
```

Q-3) Find Center of Star Graph **(5 marks)**

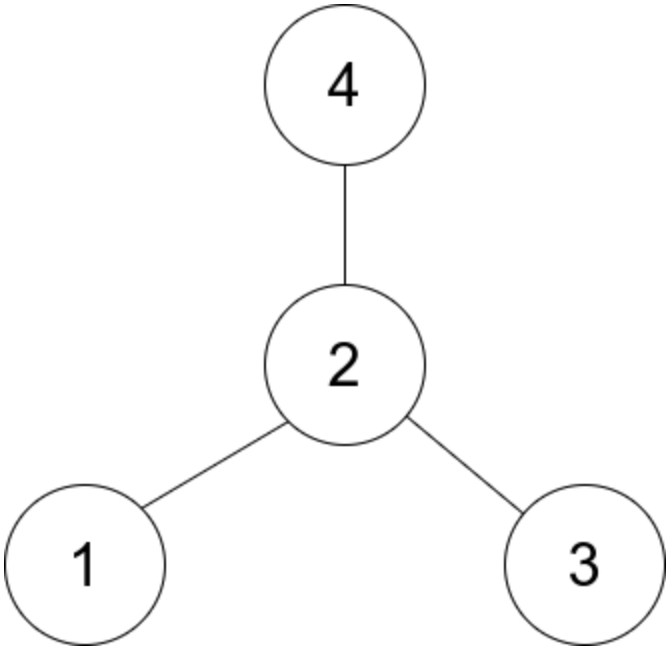
https://leetcode.com/problems/find-center-of-star-graph/

(Easy)

There is an undirected star graph consisting of `n` nodes labeled from `1` to `n`. A star graph is a graph where there is one center node and exactly `n - 1` edges that connect the center node with every other node.

You are given a 2D integer array `edges` where each `edges[i] = [ui, vi]` indicates that there is an edge between the nodes `ui` and `vi`. Return the center of the given star graph.

Example 1:



Input: edges = [[1,2],[2,3],[4,2]]
Output: 2
Explanation: As shown in the figure above, node 2 is connected to every other node, so 2 is the center.

Marks distribution:
Question 1,2 and 3 carry 5 marks each.