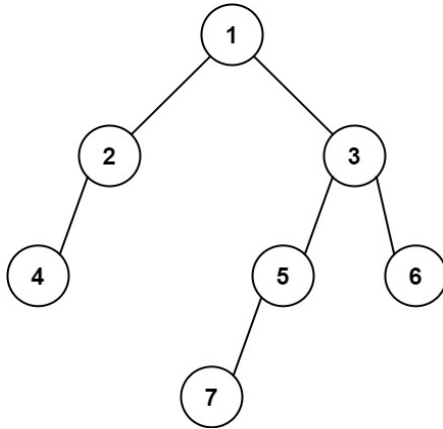## LATIHAN

1. Given a binary tree, find the maximum value in each level of the tree

Input: [1, 2, 3, 4, null, 5, 6, null, null, 7]

Output: 1, 3, 6, 7

On the first level, the maximum value is 1

On the second level, the maximum value between 2 and 3 is 3

On the third level, the maximum value between 4, 5, and 6 is 6

On the fourth level, the maximum value is 7

2. Given a binary tree and target node. By setting fire to the target node, causing the flames to spread throughout the entire tree. Print the sequence in which the nodes of the binary tree catch fire.

   Rules:

   - Fire spreads evenly to all connected nodes
   - Each node takes the same amount of time to burn and burns only once
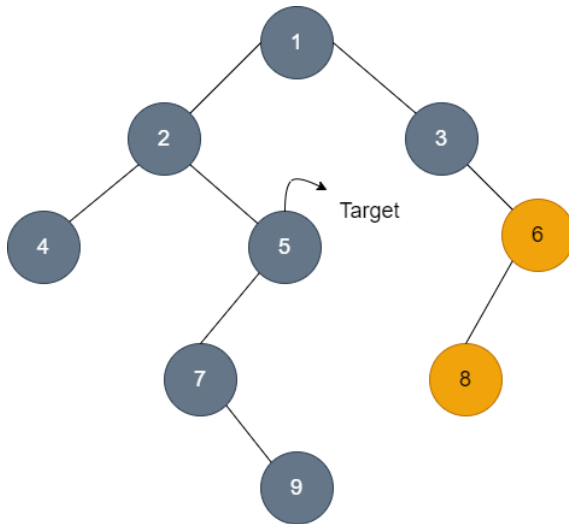
Input: [1, 2, 3, 4, 5, null, 6, null, null, 7, null, 8, null, null, 9]

Target node: 5
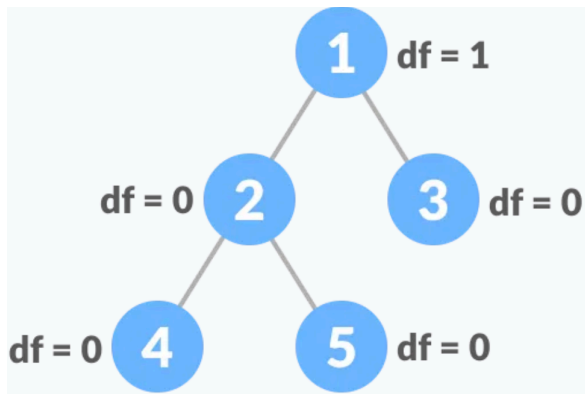
Output:

5

2, 7

1, 4, 9

3

6

8

The fire starts with node 5, then it gives fire to its neighbors (2, 7) and so on. This process continues until the whole tree burns
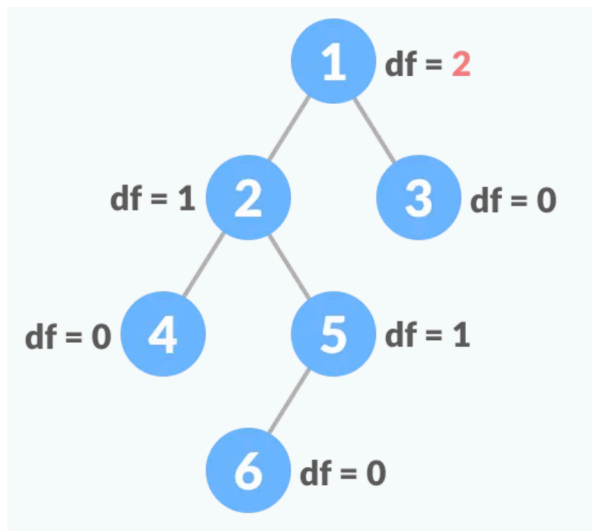
3. Given a binary tree, determine if it is height-balanced. To check if a binary tree is balanced, we need to check three conditions:
   a. Absolute difference between heights of left and right subtrees at any node should be not more than 1

b. For each node, its left subtree should be a balanced binary tree

c. For each node, its right subtree should be a balanced binary tree

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

Output: true

Input:[1, 2, 3, 4, 5, null, 6]

Output: false