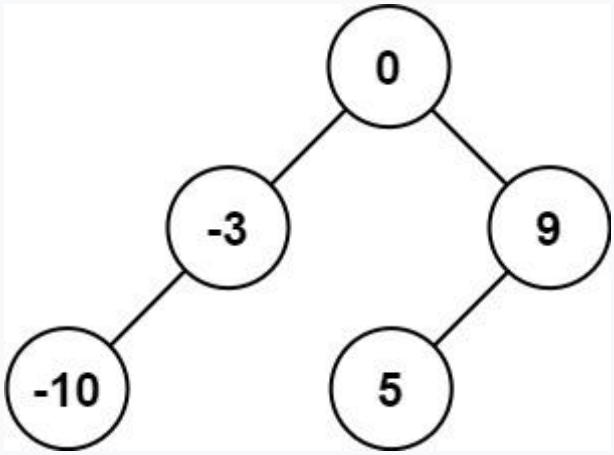
Week 12- Day 5 : Coding Challenge

(Maximum marks -15)
Q-1) Convert Sorted Array to Binary Search Tree
https://leetcode.com/problems/convert-sorted-array-to-binary-search-tree/
(5 marks)
(Easy)

Given an integer array nums where the elements are sorted in ascending order, convert *it to a height-balanced binary search tree*.

A height-balanced binary tree is a binary tree in which the depth of the two subtrees of every node never differs by more than one.

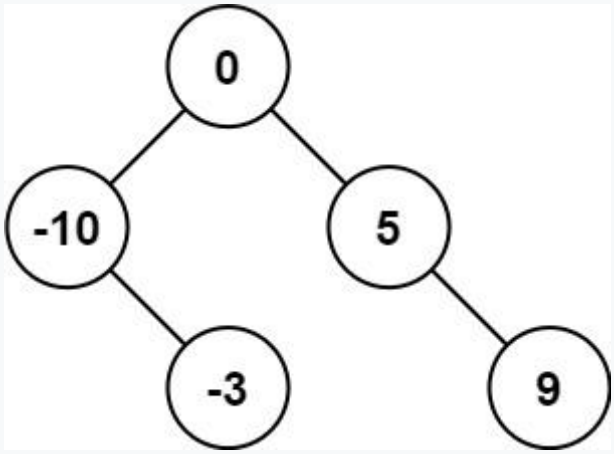
Example 1:



Input: nums = [-10,-3,0,5,9]

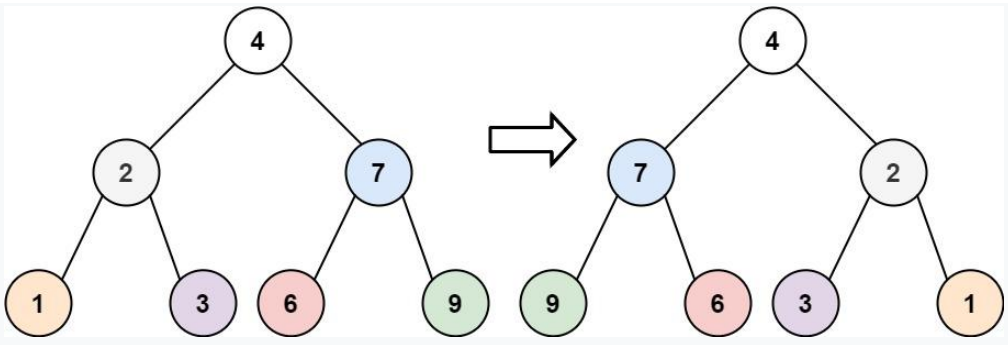
Output: [0,-3,9,-10,null,5]

Explanation: [0,-10,5,null,-3,null,9] is also accepted:



Q-2) Invert Binary Tree (5 marks)
https://leetcode.com/problems/invert-binary-tree/
(Easy)
Given the root of a binary tree, invert the tree, and return *its root*.

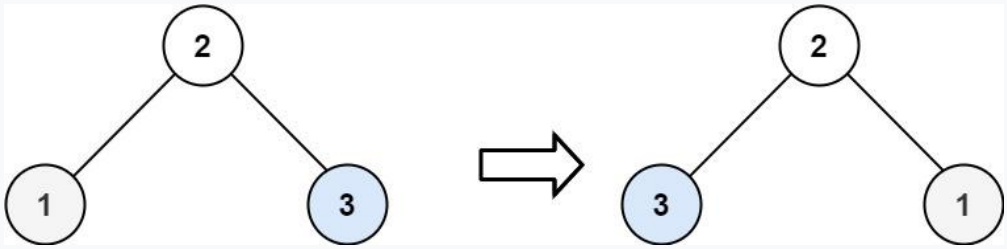
Example 1:



Input: root = [4,2,7,1,3,6,9]

Output: [4,7,2,9,6,3,1]

Example 2:



Input: root = [2,1,3]

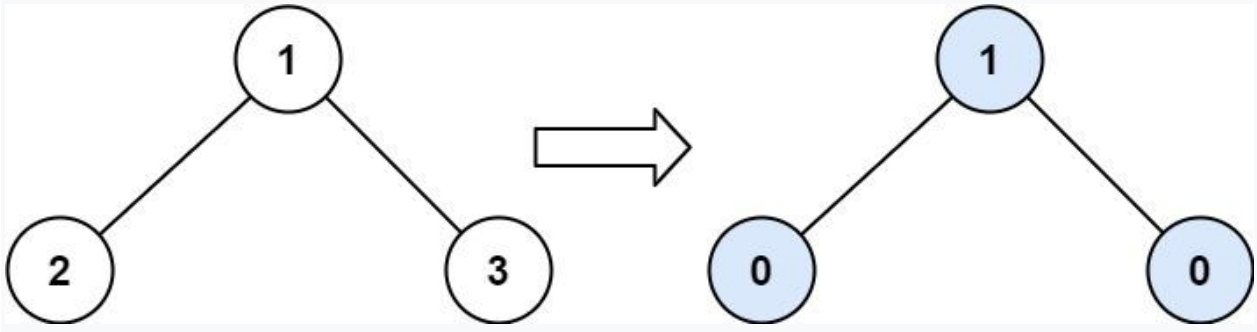
Output: [2,3,1]

Q-3) Binary Tree Tilt (5 marks)
https://leetcode.com/problems/binary-tree-tilt/
(Easy)

Given the root of a binary tree, return *the sum of every tree node's tilt.*

The tilt of a tree node is the absolute difference between the sum of all left subtree node values and all right subtree node values. If a node does not have a left child, then the sum of the left subtree node values is treated as 0. The rule is similar if there the node does not have a right child.

Example 1:



Input: root = [1,2,3]

Output: 1

Explanation:

Tilt of node 2 : |0-0| = 0 (no children)

Tilt of node 3 : |0-0| = 0 (no children)

Tilt of node 1 : |2-3| = 1 (left subtree is just left child, so sum is 2; right subtree is just right child, so sum is 3)

Sum of every tilt : 0 + 0 + 1 = 1

Marks distribution:

Question 1,2 and 3 carry 5 marks each.