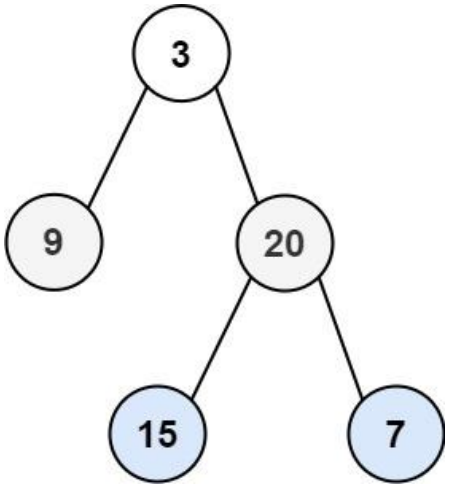
103. Binary Tree Zigzag Level Order Traversal

Given the root of a binary tree, return *the zigzag level order traversal of its nodes' values*. (i.e., from left to right, then right to left for the next level and alternate between).

Example 1:



Input: root = [3,9,20,null,null,15,7]

Output: [[3],[20,9],[15,7]]

Example 2:

Input: root = [1]

Output: [[1]]

Example 3:

Input: root = []

Output: []

Constraints:

- The number of nodes in the tree is in the range [0, 2000].
- -100 <= Node.val <= 100

```
# Definition for a binary tree node.
# class TreeNode(object):
#     def __init__(self, val=0, left=None, right=None):
#         self.val = val
#         self.left = left
#         self.right = right
class Solution(object):
    def zigzagLevelOrder(self, root):
        """
        :type root: TreeNode
        :rtype: List[List[int]]
        """
        levels = []
        def helper(node,level):
            if not node:
                return

            if(len(levels) == level):
                levels.append([])

            if level%2 == 0:
                levels[level].append(node.val)
            else:
                levels[level].insert(0,node.val)

            helper(node.left, level+1)
            helper(node.right, level+1)

        helper(root,0)
        return levels
```