Problem 103: Binary Tree Zigzag Level Order Traversal

Problem Information

Difficulty: Medium
Acceptance Rate: 62.71%
Paid Only: No
Tags: Tree, Breadth-First Search, Binary Tree

Problem Description

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`

Code Snippets

C++:

```
/**
* Definition for a binary tree node.
* struct TreeNode {
* int val;
* TreeNode *left;
* TreeNode *right;
* TreeNode() : val(0), left(nullptr), right(nullptr) {}
* TreeNode(int x) : val(x), left(nullptr), right(nullptr) {}
* TreeNode(int x, TreeNode *left, TreeNode *right) : val(x), left(left),
right(right) {}
* };
*/
class Solution {
public:
vector<vector<int>> zigzagLevelOrder(TreeNode* root) {

}
};
```

Java:

```
/**
* Definition for a binary tree node.
* public class TreeNode {
* int val;
* TreeNode left;
* TreeNode right;
* TreeNode() {}
* TreeNode(int val) { this.val = val; }
* TreeNode(int val, TreeNode left, TreeNode right) {
* this.val = val;
* this.left = left;
* this.right = right;
* }
* }
*/
class Solution {
public List<List<Integer>> zigzagLevelOrder(TreeNode root) {

}
}
```

Python3:

```
# Definition for a binary tree node.
# class TreeNode:
# def __init__(self, val=0, left=None, right=None):
# self.val = val
# self.left = left
# self.right = right
class Solution:
def zigzagLevelOrder(self, root: Optional[TreeNode]) -> List[List[int]]:
```