

Description

Solution

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# 563. Binary Tree Tilt

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Given a binary tree, return the tilt of the **whole tree**.

The tilt of a **tree node** is defined as the **absolute difference** between the sum of all left subtree node values and the sum of all right subtree node values. Null node has tilt 0.

The tilt of the **whole tree** is defined as the sum of all nodes' tilt.

## Example:

**Input:**

1  
/  
2 3

**Output:** 1

**Explanation:**

Tilt of node 2 : 0  
Tilt of node 3 : 0  
Tilt of node 1 : |2-3| = 1  
Tilt of binary tree : 0 + 0 + 1 = 1

- Note:**
- The sum of node values in any subtree won't exceed the range of 32-bit integer.
  - All the tilt values won't exceed the range of 32-bit integer.

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Seen this question in a real interview before?

YesNo

JavaAutocomplete

```
1  /**
2   * Definition for a binary tree node.
3   * public class TreeNode {
4   *     int val;
5   *     TreeNode left;
6   *     TreeNode right;
7   *     TreeNode() {}
8   *     TreeNode(int val) { this.val = val; }
9   *     TreeNode(int val, TreeNode left, TreeNode right) {
10    *         this.val = val;
11    *         this.left = left;
12    *         this.right = right;
13    *     }
14    * }
15    */
16    class Solution {
17        private int tiltWeight = 0;
18        public int findTilt(TreeNode root) {
19            binaryTreeTilt(root);
20            return tiltWeight;
21        }
22
23        private int binaryTreeTilt(TreeNode root) {
24
25            if (root == null)
26                return 0;
27            int left = binaryTreeTilt(root.left);
28            int right = binaryTreeTilt(root.right);
29            tiltWeight += Math.abs(left - right);
30
31            // this indicate/return node weight
32            return left + right + root.val;
33        }
34    }
35
```

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