

Problem 1315: Sum of Nodes with Even-Valued Grandparent

Problem Information

Difficulty: Medium

Acceptance Rate: 85.83%

Paid Only: No

Tags: Tree, Depth-First Search, Breadth-First Search, Binary Tree

Problem Description

Given the `root` of a binary tree, return `the sum of values of nodes with an even-valued grandparent`. If there are no nodes with an even-valued grandparent, return `0`.

A `grandparent` of a node is the parent of its parent if it exists.

Example 1:



Input: `root = [6,7,8,2,7,1,3,9,null,1,4,null,null,null,5]` **Output:** `18` **Explanation:** The red nodes are the nodes with even-value grandparent while the blue nodes are the even-value grandparents.

Example 2:



Input: `root = [1]` **Output:** `0`

Constraints:

* The number of nodes in the tree is in the range `[1, 104]`. * `1 <= 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:
    int sumEvenGrandparent(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 int sumEvenGrandparent(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 sumEvenGrandparent(self, root: Optional[TreeNode]) -> int:
```