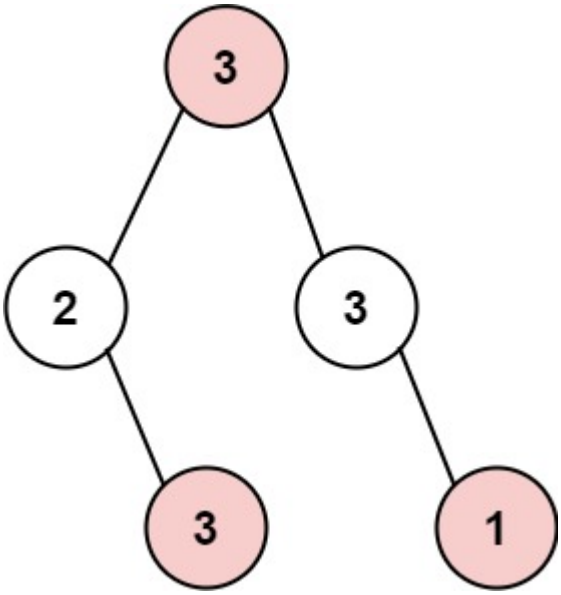
337. House Robber III

The thief has found himself a new place for his thievery again. There is only one entrance to this area, called `root`.

Besides the `root`, each house has one and only one parent house. After a tour, the smart thief realized that all houses in this place form a binary tree. It will automatically contact the police if **two directly-linked houses were broken into on the same night**.

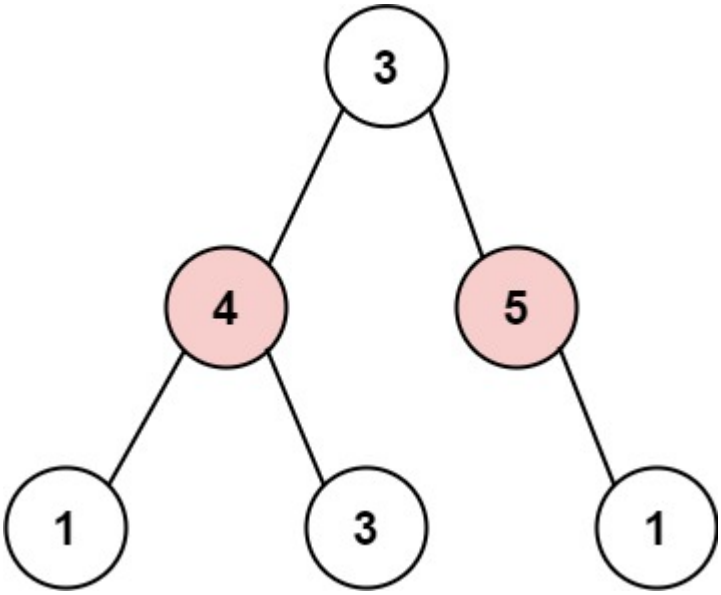
Given the `root` of the binary tree, return *the maximum amount of money the thief can rob* ***without alerting the police***.

Example 1:




```
Input: root = [3,2,3,null,3,null,1]
Output: 7
Explanation: Maximum amount of money the thief can rob = 3 + 3 + 1 = 7.
```

Example 2:




```
Input: root = [3,4,5,1,3,null,1]
Output: 9
Explanation: Maximum amount of money the thief can rob = 4 + 5 = 9.
```

Constraints:

- The number of nodes in the tree is in the range `[1, 10<sup>4</sup>]`.
- `0 <= Node.val <= 10<sup>4</sup>`

```python
# 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 rob(self, root: Optional[TreeNode]) -> int:
        if root is None:
            return 0
        res = self.robHelper(root)
        return max(res)


    def robHelper(self,root):
        if root is None:
            return [0,0]
        left = self.robHelper(root.left)
        right = self.robHelper(root.right)

        # ans = [0,0]
```

```
        withRobbing = left[1]+root.val+right[1]
        withoutRobbing = max(left)+max(right)
        return [withRobbing,withoutRobbing]
```