337. House Robber III

题目描述： **https://leetcode.com/problems/house-robber-iii/**

发现房屋都是按照二叉树形式的，每次只能偷不直接连接的两家。求最多的钱数。
例如：

Example 1:

```
   3
  / \
 2   3
  \   \
   3   1
Maximum amount of money the thief can rob = 3 + 3 + 1 = 7.
```

Example 2:

```
    3
   / \
  4   5
 / \   \
1   3   1
Maximum amount of money the thief can rob = 4 + 5 = 9.
```

解题思路：

dfs，求如果抢root和root的孙子 或者 抢root的孩子们分别哪个挣钱多

代码：

```cpp
/**
 * Definition for a binary tree node.
 * struct TreeNode {
 *     int val;
 *     TreeNode *left;
 *     TreeNode *right;
 *     TreeNode(int x) : val(x), left(NULL), right(NULL) {}
 * };
 */
class Solution {
public:
    int robTree(TreeNode *root, int &l, int &r) {
        if(root == NULL) {
            return 0;
        }
        int ll = 0, lr = 0, rl = 0, rr = 0;
        l = robTree(root->left, ll, lr);
        r = robTree(root->right, rl, rr);
        return max(root->val + ll + lr + rl + rr, l + r);
    }
    int rob(TreeNode* root) {
        int l, r;
        return robTree(root, l, r);
    }
};
```