1. Path Sum

Easy

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Given a binary tree and a sum, determine if the tree has a root-to-leaf path such that adding up all the values along the path equals the given sum.

**Note:** A leaf is a node with no children.

**Example:**

Given the below binary tree and sum = 22,

5  
 / \  
 4 8  
 / / \  
 11 13 4  
 / \ \  
7 2 1

**Solution**

dfs即可，注意简单的代码逻辑就不要拆分成单个函数，会增加运行时间

/\*\*  
 \* 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 {  
private:  
 bool flag = false;  
 int sum;  
public:  
 bool hasPathSum(TreeNode\* root, int sum) {  
 this->sum = sum;  
 if(root)dfs(root, 0);  
 return this->flag;  
 }  
 void dfs(TreeNode\* root, int curSum){  
 if(root == NULL)return;  
 if(!(root->left || root->right) && curSum + root->val == this->sum){  
 this->flag = true;  
 return;  
 }  
 dfs(root->left, curSum+root->val);  
 if(this->flag)return;  
 dfs(root->right, curSum+root->val);  
 if(this->flag)return;  
 }  
};