112 Path Sum

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.

For example: Given the below binary tree and `sum = 22`,

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

return true, as there exist a root-to-leaf path `5->4->11->2` which sum is 22.

这个题相对来说比较简单，只是需要注意，最好不要每次累加的sum返回，因为，每次二二向上分叉，就会造成要返回的结果较多。

```
/**
 * 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:

    void sum_dfs( TreeNode* root, int sum ,bool& res ){
        if( root->left == NULL && root -> right == NULL  && sum == root->val ){
            res =  true;
            return;
        }

        if(root->left != NULL )   sum_dfs( root->left, sum - root->val,res );
        if( root->right!=NULL ) sum_dfs(root->right,sum -root->val, res);

    }

    bool hasPathSum(TreeNode* root, int sum) {
        if( root == NULL )
           return false;

        bool res = false;
```

```
        sum_dfs(root,sum,res);
        return res;
    }
};
```