

113. Path Sum II

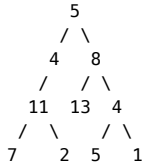
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Given a binary tree and a sum, find all root-to-leaf paths where each path's sum equals the given sum.

For example:

Given the below binary tree and sum = 22 ,



return

```
[
  [5,4,11,2],
  [5,8,4,5]
]
```

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C++



```
1 /**
2  * Definition for a binary tree node.
3  * struct TreeNode {
4  *     int val;
5  *     TreeNode *left;
6  *     TreeNode *right;
7  *     TreeNode(int x) : val(x), left(NULL), right(NULL) {}
8  * };
9  */
10 class Solution {
11 public:
12     vector<vector<int>> pathSum(TreeNode* root, int sum) {
13         vector<vector<int>> res;
14         vector<int> path;
15         helper(root,sum,res,path);
16         return res;
17     }
18 private:
19     void helper(TreeNode* root, int sum, vector<vector<int>>& res, vector<int>& path){
20         if(root==NULL) return;
21         path.push_back(root->val);
22         sum -= root->val;
23         if(sum==0&&!root->left&&!root->right)
24             res.push_back(path);
25         else{
26             helper(root->left,sum,res,path);
27             helper(root->right,sum,res,path);
28         }
29         path.pop_back();
30     }
31 };
```

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