

105. Construct Binary Tree from Preorder and Inorder Traversal

题目描述: <https://leetcode.com/problems/construct-binary-tree-from-preorder-and-inorder-traversal/>

给定一棵二叉树的前序遍历和中序遍历。求这棵二叉树。

解题思路:

前序遍历的第一个节点就是根节点。

代码:

```

/**
 * 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:
    TreeNode* createTree(vector<int>& pre, vector<int>& in, int ps, int pe, int is
, int ie){
        if(ie < is){
            return NULL;
        }
        TreeNode *root = new TreeNode(pre[ps]);
        int pos = is;
        for(int i = is; i <= ie; i++){
            if(in[i] == root->val){
                pos = i;
                break;
            }
        }
        int llength = pos - is;
        int rlength = ie - pos;
        root->left = createTree(pre, in, ps+1, ps+llength, is, pos-1);
        root->right = createTree(pre, in, pe-rlength+1, pe, pos+1, ie);
        return root;
    }
    TreeNode* buildTree(vector<int>& pre, vector<int>& in) {
        return createTree(pre, in, 0, pre.size()-1, 0, in.size()-1);
    }
};

```