Construct Binary Search Tree from Preorder Traversal

Solution

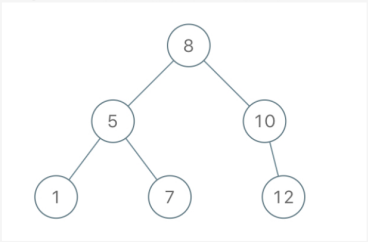
Return the root node of a binary **search** tree that matches the given `preorder` traversal.

(Recall that a binary search tree is a binary tree where for every node, any descendant of `node.left` has a value `< node.val`, and any descendant of `node.right` has a value `> node.val`. Also recall that a preorder traversal displays the value of the `node` first, then traverses `node.left`, then traverses `node.right`.)

It's guaranteed that for the given test cases there is always possible to find a binary search tree with the given requirements.

Example 1:

```
Input: [8,5,1,7,10,12]
Output: [8,5,10,1,7,null,12]
```



Constraints:

- `1 <= preorder.length <= 100`
- `1 <= preorder[i] <= 10^8`
- The values of `preorder` are distinct.

Java

```java
/**
 * Definition for a binary tree node.
 * public class TreeNode {
 *     int val;
 *     TreeNode left;
 *     TreeNode right;
 *     TreeNode(int x) { val = x; }
 * }
 */
class Solution {
    public TreeNode bstFromPreorder(int[] preorder) {

        if(preorder.length == 0) return null;

        Stack<TreeNode> stack = new Stack();
        TreeNode root = new TreeNode(preorder[0]);
        stack.push(root);

        for(int i = 1; i < preorder.length; i++) {
            TreeNode node = stack.peek();
            TreeNode child = new TreeNode(preorder[i]);

            while(!stack.isEmpty() && stack.peek().val < child.val) {
                node = stack.pop();
            }

            if(node.val < child.val) {
                node.right = child;
            }
            else {
                node.left = child;
            }
            stack.push(child);
        }
        return root;
    }
}
```

Custom Testcase (Contribute)

Run Code Submit