

```

package Iterators;

import java.util.Stack;

class TreeNode {
    int val;
    TreeNode left, right;
    public TreeNode(int v) {
        val = v;
    }
}

public class PreorderIterator {

    Stack<TreeNode> stack;
    public PreorderIterator(TreeNode root) {
        stack = new Stack<>();
        if (root == null) return;
        stack.push(root);
    }

    public boolean hasNext() {
        return !stack.isEmpty();
    }

    public int next() {
        if (!hasNext()) return -1;

        TreeNode node = stack.pop();
        if (node.right != null) stack.push(node.right);
        if (node.left != null) stack.push(node.left);

        return node.val;
    }
}

```