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Lab Assignment-12

Q1: Create a Stack class object, utilize a Stack collection and demonstrate the use of both List and Stack methods. Display the result in the console.

Input:

```
package CoreJava;
import java.util.LinkedList;
import java.util.List;
import java.util.Stack;
public class StackExample {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        // Create a Stack object
        Stack<Integer> stack = new Stack<>();
        // Add elements to the stack using the push() method
        stack.push(1);
        stack.push(2);
        stack.push(3);
        stack.push(4);
        stack.push(5);
        // Display the elements of the stack using the toString() method
        System.out.println("Stack elements: " + stack);
        // Create a List object
        List<Integer> list = new LinkedList<>();
        // Add elements to the list using the add() method
        list.add(1);
        list.add(2);
        list.add(3);
        list.add(4);
        list.add(5);
        // Display the elements of the list using the toString() method
        System.out.println("List elements: " + list);
    }
}
```

```
// Use the peek() method to retrieve the top element of the stack without
removing it
System.out.println("Top element of the stack: " + stack.peek());
// Use the pop() method to remove and return the top element of the stack
System.out.println("Removed top element of the stack: " + stack.pop());
// Use the size() method to get the number of elements in the stack
System.out.println("Size of the stack: " + stack.size());
// Use the isEmpty() method to check if the stack is empty
System.out.println("Is the stack empty? " + stack.isEmpty());
// Use the clear() method to remove all elements from the stack
stack.clear();
// Use the isEmpty() method to check if the stack is empty
System.out.println("Is the stack empty? " + stack.isEmpty());
}

}
```

Output:

Stack elements: [1, 2, 3, 4, 5]
List elements: [1, 2, 3, 4, 5]
Top element of the stack: 5
Removed top element of the stack: 5
Size of the stack: 4
Is the stack empty? false
Is the stack empty? true