

Pushdown Automata

```
package PAttry;
import java.util.Stack;
public class PushdownAutomata {
    private Stack<Character> stack;
    public PushdownAutomata() {
        stack = new Stack<>();
    }
    public boolean processInput(String input) {
        for (char symbol : input.toCharArray()) {
            if (symbol == 'a') {
                stack.push('a');
            } else if (symbol == 'b') {
                if (stack.empty() || stack.peek() != 'a') {
                    return false;
                }
                stack.pop();
            } else {
                return false;
            }
        }
        return stack.empty();
    }
    public static void main(String[] args) {
        PushdownAutomata pa = new PushdownAutomata();

        String input1 = "aabb";
        String input2 = "aaabbb";
        String input3 = "aabb";
        String input4 = "aaab";
        System.out.println("Input : " + input1 + " -> " + pa.processInput(input1));
        System.out.println("Input : " + input2 + " -> " + pa.processInput(input2));
        System.out.println("Input : " + input3 + " -> " + pa.processInput(input3));
        System.out.println("Input : " + input4 + " -> " + pa.processInput(input4));
    }
}
```