

## CS302 Loop Tracing Exercise

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Consider the following program, which reads a line of text from the user and then prints either “Yes” or “No”. Under what conditions does it print “Yes”? Under what conditions does it print “No”?

**Hint:** The best way to solve this problem is to try tracing the program on a few example inputs. By “tracing,” I mean writing out the values of the program variables throughout its execution; this will allow you to find the ending value of “result”, which controls what is printed.

```
import java.util.Scanner;

public class StringTester {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        String line = in.nextLine();

        int length = line.length();
        boolean result = true;

        for (int i = 0; i < length / 2; i++) {
            char ch1 = line.charAt(i);
            char ch2 = line.charAt(length - 1 - i);
            if (ch1 != ch2) {
                result = false;
            }
        }

        if (result) {
            System.out.println("Yes");
        } else {
            System.out.println("No");
        }
    }
}
```