

## Lab04

This lab has you practicing writing more advanced loops and defining and calling your own functions. If a problem restricts you to a certain type of loop, you must use that loop. This is intentional because it would be easier to use another type of loop and we want to give you experience challenging yourself a bit :)

The instructions for submitting this lab are the same as the past several labs, and we'll start omitting them from the labs in the future. As always, create a project called Lab04, use separate classes for each program, and submit the zipped project folder to Canvas.

**Task 1 Lines** Ask the user to input a number and draw a horizontal line of number length. Use a while loop to do this.

Sample run (user input in bold and italics):

```
Enter a number: 4
****
```

**Task 2 Squares** Ask the user to input a number and draw a square of number length sides. Use for loops to do this.

Sample run (user input in bold and italics):

```
Enter a number: 4
****
****
****
****
```

**Task 3 Rectangles** Ask the user to enter two numbers and draw a rectangle having sides of those lengths. For a challenge, you're encouraged to try this with a do-while loop, but you don't have to.

Sample run (user input in bold and italics):

```
Enter length: 4
Enter width: 5
****
****
****
****
****
```

**Task 4** Ask the user to input a number n and a number m and print the multiplication table for n rows and m columns.

Sample run:

```
Enter n: 4
Enter m: 3
X | 1  2  3
-----
1 | 2  2  3
2 | 2  4  6
3 | 3  6  9
4 | 4  8  12
```

**Task 5** Write a function that takes in two numbers and returns their sum. Write separate code to take input from the user, call the function, and print the return value.

**Task 6** Write a function that takes in a String and returns the same String with a newline character, `\n`, between each character using a loop. Call the function with at least three different inputs and print the results in main. For example, if you inputted the String "Methods" and printed the result, it would appear in the console as:

```
M
e
t
h
o
d
s
```

*Hint: use the `.charAt()` method on a String to get the character at a specified index.*