

# CPSC 1045: Lab 5 - Loops

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## Introduction

In this lab you will be using loops and nested loops. Loops allows use to repeat code, which is very handy in programming. We can use it to generate tables, draws multiples of the same thing etc.. We can also use it to repeatedly ask the user for input, until they give us the answer we want.

### References:

#### Loops:

<https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/for>

<https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/while>  
[http://www.w3schools.com/js/js\\_loop\\_for.asp](http://www.w3schools.com/js/js_loop_for.asp)

Video:

<http://www.lynda.com/JavaScript-tutorials/Working-loops/81266/87527-4.html>

## Activity

### Part A: loops and canvas

Create a web-app that:

Example app: <http://mylinux.langara.bc.ca/~kimlam/lab5/lab5a.html>

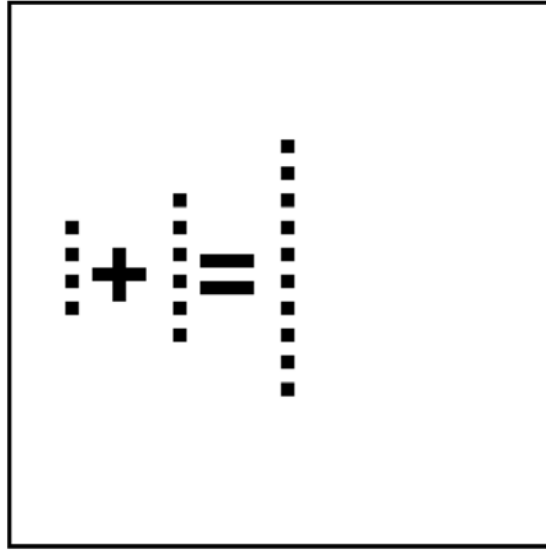
In Part A you will create a web-app that graphically shows addition.

Your app should:

1. Asks the user for two numbers between 1 and 10 with 2 two prompts.
  - a. Repeatedly ask the user for a number until they enter a valid number.
2. On the left, draw the number of squares(or some other shape) specified by the first number.
3. In the middle, draw the number of squares(or some other shape) specified by the second number.
4. On the right, draw a number of squares(or some other shape) equal to the total of the two numbers.
5. Draw an equal sign between the answer and the middle section.
6. Draw an addition sign between the left section and middle section.

For the inputs 4 for the first number and 6 for the second number, your out may look like the picture below.

## Too much math!



You are free to choose the shape, color, and size of the shapes being drawn. You are also free to choose the positioning of the drawing.

### Part B: Creating a Math quiz, aka string building exercise.

For part B you will automatically generate a math quiz for an overworked elementary school teacher.

The app should work similar to the example found at the following link:

<http://mylinux.langara.bc.ca/~kimlam/lab5/lab5b.html>

Your app should:

1. Prompt the user for the number of questions they want
2. Generate the number of addition questions specified by the user
  - a. The numbers should change every time the page is reloaded.
  - b. If you want to make Part B more challenging, you can generate subtraction, multiplication and division questions as well.
3. Display the question along with the answer on the webpage.
4. Use loops to make your life easier!

For an input of 2, your page may look like the following:

# Addition Quiz

## Question 1

$7 + 5 = ?$

Answer: 12

## Question 2

$9 + 6 = ?$

Answer: 15

## Submissions

1. Zip lab5a.js, lab5a.html, lab5b.js and lab5b.html into a single lab5.zip files
2. Upload to the lab5 Dropbox on D2L
3. Lab 5 will be graded by your TA outside of lab time.