

Lab Exercise for Assignment 3

Intro to Programming: Lab Exercise 3

- Due Nov 10 23:30

Goals

This assignment will give you practice at writing methods with:

- methods that call methods in the same class
- methods that return values
- for loops

Resources and links

- [Download Zip file](#) of necessary code and data. Please note that the zip file also contains code and data for the assignment.
- [Source Code and data Files](#) (for viewing online)
- [Description of the Assignment](#)

Summary

- [Method Parameters exercise](#):
➡ Write programs that perform repetitive tasks.
- [Foreach loops exercise](#):
➡ Write little programs that have for loop.

Preparation

Download the zip file for assignment 3 and extract it to the COMP102-2017T2-Assig3 folder in your home folder. It should contain templates for the programs you are to complete. Read through the exercises and run the demos so that you know what you need to do.

Look at the model answers to assignment 2, and make sure you understand all the components of the programs. Also, go over the code examples from the lectures that used **for** loops.

Exercise Series 1: Defining and Using Methods with parameters

The first series of exercises is given in the `MethodParametersExercise` class. It contains three methods that each perform some repetitive task. The repetitive component is done by calling a separate method several times (with different arguments each time).

- `doNameTags()` prints out a series of nametags for workshop participants. Each nametag has the participant's name and workshop ID number.
You must complete the `printNameTag` method including defining the parameters.
- `doBottleSong()` prints out the words to a traditional repetitive song.
You must complete the `bottleSongVerse` method including defining the parameters.

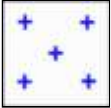
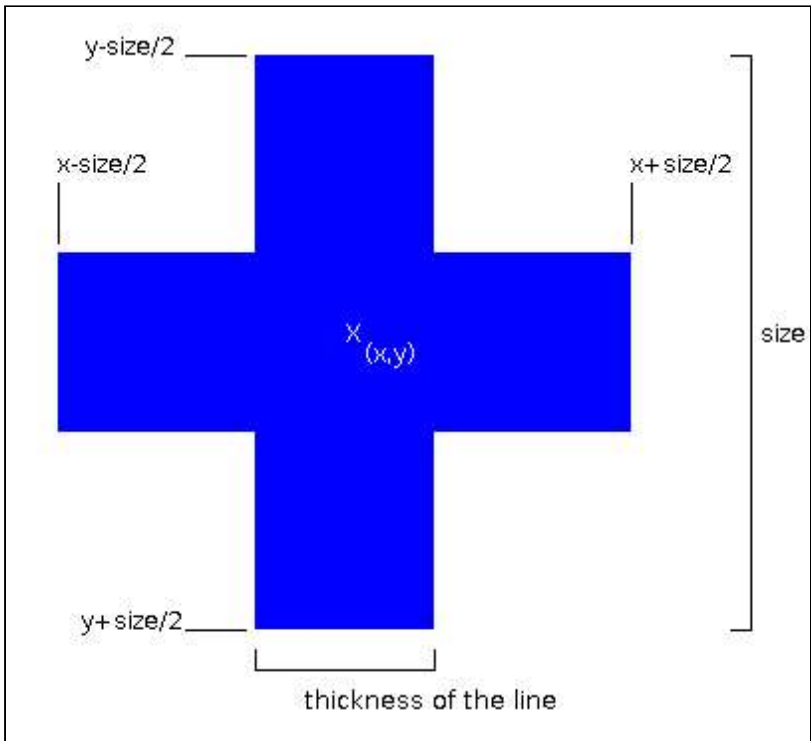
10 green bottles, hanging on the wall,
 10 green bottles, hanging on the wall,
 And if one green bottle, should accidentally fall,
 There'd be 9 green bottles, hanging on the wall,

9 green bottles, hanging on the wall,
 9 green bottles, hanging on the wall,
 And if one green bottle, should accidentally fall,
 There'd be 8 green bottles, hanging on the wall,

...

2 green bottles, hanging on the wall,
 2 green bottles, hanging on the wall,
 And if one green bottle, should accidentally fall,
 There'd be 1 green bottles, hanging on the wall,

- `doSignalZeroFlag()` draws the flag used by the US navy to signal the value "zero", which is a white square with five small blue crosses, laid out like the dots on the "5" side of ordinary dice. You must complete the `drawCross` method including defining the parameters.

signal zero flag	instructions to draw one cross
	

For each method (`printNameTag`, `bottleSongVerse`, `drawCross`)

- Define the parameters of the method.
- Define the body of the method, using the parameters appropriately.

Exercise Series 2: Programming with for loops

For the second series of exercises, you must complete methods that use **for** loops to repeat actions.

Complete the following methods in the `ForeachLoopsExercise.java` file.

- `doSquareNumbers()` should read a sequence of numbers, using `UI.askNumbers()`, then print out the squares of each number.
 For example, if they enter
 4 21 20 9 done
 it should print

16 441 400 81
(either on one line or on separate lines).

- `doAddBigNumbers()` should read a sequence of numbers, using `UI.askNumbers()`, then print the sum of all the numbers that are bigger than 9.
For example, if they enter
4 21 20 9 12 done
it should add up $21+20+12$ and print
53
- `doTHWords()` should read a sequence of words, using `UI.askStrings()`, then print out all the words containing "th".
For example, if they enter
Mathilde is the happiest person other than Matthew
it should print out
Mathilde the other than Matthew
- `doDrawDots()` should read a sequence of x coordinates, using `UI.askNumbers()`, then draw dots (10 pixels diameter) centered at each x coordinate, as long as it is between 0 and 300.