# CPSC 1100 – LAB 11

LOOPS

This lab will deal with using loops in java to implement different tasks. The tasks will be assigned from the textbook. **PLEASE COMMENT YOUR CODE.** You will have points taken off if you do not comment your code. Keep your code neat.

**Some useful links:**

BlueJ tutorial [www.bluej.org/tutorial/tutorial-201.pdf](http://www.bluej.org/tutorial/tutorial-201.pdf)

Java tutorial home page: <http://docs.oracle.com/javase/tutorial/>

Start here: <http://docs.oracle.com/javase/tutorial/java/index.html>

variables <http://docs.oracle.com/javase/tutorial/java/nutsandbolts/variables.html>

data types <http://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html>

relational operators <http://docs.oracle.com/javase/tutorial/java/nutsandbolts/op2.html>

if-then <http://docs.oracle.com/javase/tutorial/java/nutsandbolts/if.html>

java math library <http://docs.oracle.com/javase/7/docs/api/java/lang/Math.html>

Simple Video on BlueJ Debugger <http://www.youtube.com/watch?v=LUUPTbWV0g8>

**Some helpful tips:**

1. Compile often – do it.
2. Perform the tasks by hand to verify your work.
3. It may be helpful to use the Debugger to verify your loops.

## Tasks: Follow the directions below to complete your lab assignment

***Make sure in your solutions that you use AT LEAST one “while-loop”and one “for-loop” throughout your code.*** (You will need to write several loops, but I need to see AT LEAST one of each type of loop in your final .java files).

Create a tester class called Lab11Tester that constructs an object of each class detailed below, and then calls the methods appropriately.

**Complete the following tasks.**

***Task01***: Problem E6.2 a,b,c,d from the Book (not e). (Listed as E6.1 in the images at the end of this document). Create a class called LoopsComputer. Use the following method names for each part. A) computeEvenSum(), B) computeSquareSum(), C) printPowers(), D) oddSum(). For part d, you will use two input parameters “a” and “b” as ints. Each method should print your answer. (All these methods should have a return type of void).

***Task02***: Problem E6.3 a,b,c,d from the Book. (Listed as E6.3 in the images at the end of this document). Create a class called InputAnalyzer. Use the following method names for each part of the problem. A) findSmallLarge(), B) countEvenOdd(), C) cumulativeTotal(), D) findAdjDuplicates(). Each method should create a scanner and ask the user for input. You should continue to read input while the user enters integers. (i.e. if the user enters “Q”, then you should exit your loop. The hasNextInt()method from the Scanner class returns true if the user enters an int, and false otherwise. You can use the return value from this method as your loop condition). A single prompt will work in this case as well. Ask the user for a list of numbers, and then process them accordingly in each loop.

***Task03***: Problem E6.4 a,b,c,d,e from the Book. (Listed as E6.3 in the images at the end of this document). Create a class called StringManipulator. Create a single instance variable of type String for this class called line. (Because it will store a line of text). Create a constructor for this class that accepts a single parameter as a String, and initializes the instance variable line to this parameter. In your main method of your tester class you will prompt the user for a line of text as a String (you can use the nextLine() method from the Scanner class), and use this String to construct a new StringManipulator object. Then you will call your methods. Use the following method names for each part of the problem. A) printUpper(), B) printEveryOther(), C) vowelsToUnderscore(), D) printVowelCount(), E) printVowelPositions(). These methods should each print the solution to each part of the problem, using the instance variable line for the calculations.

***Task04***: Take a capture of your final output, which should show output for Task01, Task02, and Task03.

## To Turn In via Google Drive

You should turn in your java files and a document with your output.





