**Lab 2** (25 points total)

The purpose of this lab is to continue learning the BlueJ Integrated Development Environment (IDE) in addition to Chapter 2 concepts. There are several learning objectives to this assignment

* Use Variables and Expressions along with the String class.
* Obtaining keyboard I/O from users
* Incorporating documentation and style into your code

Assignments are from Savitch textbook

**Lab 2 Part 1 (13pts)**

**Problem 1 – pg127 (2pts)**

Note ensure that what you input as x is a floating point number (number with a decimal)-this can be either a float or double primitive type

1. 12345.6789

**Problem 1 – pg130 (2pts)**

Using Add Three Numbers from last week, convert this to a program that will calculate the average of three numbers. Ensure that your result is a floating point number (either a float or more commonly double in java). Pitfalls – if your result is always xx.0, ensure that you are properly casting the right hand side of your calculation.

At a minimum, use the following numbers as input n1=2, n2=3, n3=3.

**Problem 4 (3pts)**

See Hint in the book (division and remainder operations)

**Problem 5 (3pts)**

Use String methods for this version.

*NOTE: The adventurist ones in the class will do this with a for loop, but ok to have four separate lines for now.*

**Problem 6 (3pts)**

Ensure that output is limited to one decimal point. Hint you will need to use printf to modify the number of decimal points.

Test the following user input temps 1) 100F 2) 32F 3) 212F

**Lab 2 Part 2 (12pts)**

**Problem 7 (6pts)**

Enter the following line of text.

<4 spaces>I really like Java<3 spaces> // Hint: you will need to clean up *(or trim)* the extra spaces before you do any other manipulations. There is a String method for this.

Your output should display

I have rephrased “I really like Java”

with String methods to read: I really LOVE Java

the output is xx chars long (Hint: use a string method to figure out the number of chars)

Do not hard code your answer so that if the phrase “I really, really, really like Java” was used instead your program would still work (ie get user input). Also, DO NOT USE the replace(), use substring().

**Problem 11** (2pts extra credit)

**Problem 12 (6pts)**

Do not hard code getting user input(ie provide prompt and obtain radius from user)

Create a constant for **π** that is equal to 3.14159 (ie public static final double….)

1ft3 = 7.48 gallons of water

Compute the volume based on the formula: **π**\*radius^2\*height

Output a double value and use type casting to convert the number to an integer

Complete at least one use case that includes  
1) int radius = 4; // radius is in inches, int height = 100; // height is in feet

*Answer the following question - Based on the volume of this well, will the family of four require a holding tank (not required if well is greater than 250 gallons).*

**Submitting your work**

For all labs you will need to provide a copy of all .java files. **DO NOT PROVIDE .class files. I cannot grade, what I cannot read.** In addition to your .java files, you will need to produce a pix of the screen output in .png or .jpg format for each project that covers all use cases in the lab. For persons using Windows 7 and above OS, you can use the built in snipping tool. Mac OS users, you can see how to take screenshots using the following url - <http://www.wikihow.com/Take-a-Screenshot-in-Mac-OS-X>

You will need to zip your files into a single container. **DO NOT USE .rar for Mac OS.** Therefore for Lab2 Part1, students should submit a Lab2Pt1.zip file with four java files as well as appropriate number of pix in either .png or .jpg format. For Lab2Pt2 a .zip with two (or three with XC) java files as well as appropriate number of pix in either .png or .jpg format.