Lab 2
Java Fundamentals

The following exercises are to be completed during lab class. They must be completed and submitted to CANVAS by the end of the lab time period.

Set-Up

- Create a new project in named **Lab02**
- In the *src* folder, create a package named **edu.ilstu**
- Download the Errors.java file from CANVAS
- Reference the Lab01 instructions as needed to help you do this.

Work through the following problems. Consult with those close to you in the lab and of course your lab instructor and lab assistant.

Problem 1: First Class (7 points)

Create a class named **FirstClass**. Enter your solution to the first pre-lab problem. Test it to make sure it works correctly.

Problem 2: Correcting Errors (6 points)

Import the **Errors.java** file into your project. Fill in the comment at the top with the correct information and add your name to the @author clause.
Correct all of the errors so that the program runs correctly with the following output:

Hello, IT 168 STUDENT
Can you find all of the errors in this program?
Sure!
Can you fix them and make the program run correctly?
Yes I can!

There are both syntax errors and logic errors in the program.

Problem 3: Experimenting with Types and Arithmetic in Java (12 points)

- Create a new Java class called **Experiments** with a main.
- Be sure to include the appropriate comment blocks.
- Create the following variables, initializing each of them to an initial value:
    - A short named aShort with value 6
    - A long named aLong with value 105

    - Two ints named int1 and int2 with values 10 and 11
    - A float named aFloat with value 1.5 (remember to use 1.5f)
    - A double named aDouble with value 100.3
- Experiment with all of the variables to see which ones can be assigned to which other variables. Add a comment to your program that tells what the valid assignments are, based on your experiments. Make sure your comment covers all combinations.
- After your comment is written, remove all of these assignments from the program file, both correct and incorrect.
- Add the following assignment statements to your program, along with a println statement that prints the variable that was assigned into along with a label after each assignment statement. You are encouraged to predict the result of each assignment before you see the result.
    - aDouble = int2 / 2;
    - aDouble = int2 / 2.0;
    - aLong = int1 % 2;
    - aLong = int1 % 4;
    - int1 = int2 % 2;
    - int1 = int2 % 3;
    - int1 = int2 % 4;
    - int1 = 2 + 3 * 4;
    - int1 = (2 + 3) * 4;

**** Example print statement to follow the first assignment statement: ****
System.out.println("aDouble = int2 / 2; results in: " + aDouble);

Each of the above variable equations should have an output statement.

To Be Submitted

The following files should be zipped together into a file called Lab02.zip and submitted to CANVAS by the beginning of your next lab.

- FirstClass.java
- Errors.java
- Experiments.java