**CIS163 Lab 2**

**Debugging lab:**

**This is an important Lab! Perhaps the most important lab for this semester.**

**Preparation:**

Have completed lab 1 from last week

Attended class and stayed up to date with class material

**Objectives** (after completing the lab you will be able to do:)

* Use the Java Eclipse Debugger to help with your projects

**Activities:**

1. Create a package named debugging, in a given project folder in eclipse.
2. Create a class named Counter. Cut and paste in the following code:

package debugger;

public class Counter {

private int result = 0;

public int getResult() {

return result;

}

public void count() {

for (int i = 0; i < 100; i++) {

result += i + 1;

}

}

}

1. Create a class named Main. Cut and paste in the following code:

public class Main {

/\*\*

\* @param args

\*/

public static void main(String[] args) {

Counter counter = new Counter();

counter.count();

System.out.println("We have counted "

+ counter.getResult());

}

}

1. Watch the instructor use the debugger on the program above
2. Attempt to do what the instructor did using the debugger, in other words, goto and complete the example at: <http://www.vogella.com/tutorials/EclipseDebugging/article.html>  
   (note: the package name on the url is different, but is not a problem)
3. Create a class named SimpleCalculator. Cut and paste in the following code:

public class SimpleCalculator {

int number;

public SimpleCalculator() {

number = 0;

}

public SimpleCalculator(int number) {

this.number = number;

}

public double divideByTen() {

double result = number / 10;

return result;

}

public String toString() {

String numberString = "" + number;

return numberString;

}

}

1. Create a class named TestSimpleCalculator. Cut and paste in the following code:

import static org.junit.Assert.\*;

import org.junit.Test;

public class TestSimpleCalculator {

@Test

public void testDivideByTen() {

SimpleCalculator sc1 = new SimpleCalculator();

assertTrue(sc1.divideByTen() == 0);

SimpleCalculator sc2 = new SimpleCalculator(10);

assertTrue(sc2.divideByTen() == 1);

SimpleCalculator sc3 = new SimpleCalculator(-10);

assertTrue(sc3.divideByTen() == -1);

SimpleCalculator sc4 = new SimpleCalculator(555);

assertTrue(sc4.divideByTen() == 55.5);

}

@Test

public void testToString() {

SimpleCalculator sc5 = new SimpleCalculator();

assertTrue(sc5.toString() == "0");

SimpleCalculator sc6 = new SimpleCalculator(10);

assertTrue(sc6.toString() == "10");

SimpleCalculator sc7 = new SimpleCalculator(-10);

assertTrue(sc7.toString() == "-10");

SimpleCalculator sc8 = new SimpleCalculator(555);

assertTrue(sc8.toString() == "555");

}

}

1. Both test cases in the TestSimpleCalculator fail. Fix the code and the tests so that both test cases pass.

**Debugging does not just end with this lab, you will need to continuously work on debugging. In two weeks, try the following link/debugging exercise**

**http://stackoverflow.com/questions/26312475/java-programming-exercise-debug-program**