Texas Christian University CoSc 10403 – Spring 2020 Lab # 1

Due Date:

Using D2L, by midnight, Tuesday January 28th.

- 1. You should have your "10403 Lab and Eclipse Introduction" available for reference.
- 2. Run Eclipse and close any previously opened projects. Select a project in the Projects window and select "Close Project" from the File menu.
- 3. Create a new project named Lab1Project in the COSC10403 directory previously created on your W: drive, as done for Lab0Project. (*Refer to Section III-5 of your Eclipse Introduction.*)
- 4. Create a Java **JFrame** source file (with class name "**Lab1**") as described in Section III-6 of your lab intro handout. You should now have the frame skeleton code in the window on the right side.
- 5. <u>ALWAYS</u> document your program. You should include BOTH header comments, similar to those shown below, <u>AND</u> internal documentation. Add the following block of comments to the beginning of your program. Fill in your appropriate information for Student Name, Semester, Section, and Instructor.

Failure to include such a comment block (but modified to reflect the problem currently being solved) will cost you points on this assignment and **ALL future ones!!**

Note, multi-line comments begin with /* and end with the following */.)

If you don't understand what to delete and add, STOP here and ask for assistance.

```
/*
    Program Name: Lab 1
/*
    Student Name: (fill in your name)
Semester: (fill in the semester)
Class-Section: CoSc10403-(fill in your section number)
Instructor: (fill in your instructor)
/*
/*
    Program Overview:
      This program creates a simple Java applet with one
/*
      label and two buttons.
/*
/*
/*
      There is no user input to this program.
    Output:
/*
      An applet displaying a GUI with a label and 2 buttons.
/*
    Program Limitations:
      The buttons are inactive.
/*
    Significant Program Variables:
      lblPress - a label displaying "Press One"
      btnStop - an inactive STOP button
/*
      btnGo - an inactive GO button
/*
```

- 6. Use the Lab0 you created earlier as a starting-point for Lab1. Follow the instructions for doing so in the Eclipse Tutorial.
- 7. In this class, we will be building Java programs that employ graphical user interfaces (GUIs) using **Swing** components. As such, we will be building **JFrames**. Thus, your programs will always need the following 2 "import" statements:

```
import javax.swing.*;
import java.awt.*;
```

8. Using your new **Lab1** (that was created in Step #6 above) modify the code that appears so that it reads exactly as follows:

```
import java.awt.*;
import javax.swing.*;
public class Lab1 extends JFrame
        public JButton startB = new JButton("START");
         public static void main(String args[])
               {
                  new Lab1();
               }
         public Lab1()
               { setTitle("POP UP WINDOW");
                  add(startB);
                  setBounds(200,400,200,100);
                  setLayout(new FlowLayout());
                  setVisible(true);
                  System. out. println("Feedback on the console" + " Button 1 "+
startB.getText());
      }
```

With these changes, when the program is executed, a **START** button will displayed on your **JFrame** window. Run your program to confirm this.

- 9. Next, use your intuition to create and add a 2nd **JButton** (but with a label "**HALT**" appearing on it). (NOTE In object-oriented terminology you just created a 2nd "instance" of the **JButton** class.)
- 10. As you will learn in class shortly, there are many other widgets (components) that can be added to your Graphical User Interface (GUI).
- 11. Now, create and add a <code>Jlabel</code> widget with the two lines of code given below. Type them exactly as shown. Position the <code>Jlabel</code> declaration so that it appears right after the two <code>JButton</code> declarations. Place the "add" for the new label so that it appears BETWEEN the <code>HALT JButton</code> and the <code>CONTINUE JButton</code> "add" statements. Note: When you run the Lab1 JApplet, the label should appear on your applet positioned between the 2 buttons.

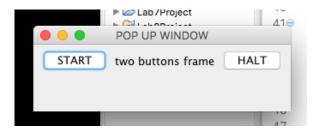
These are the two new statements that you are adding:

JLabel lblPress = new JLabel("Two buttons frame"); add(lblPress);

12. Run Lab1. If everything has been entered correctly you should see the Applet Viewer window open with two buttons, and a label. If you do not get that, stop here, fix your mistakes and rerun the applet until you do. Do NOT continue until this is done.

Notice that the applet is being displayed in a window size of 200 pixels x 100 pixels.

13. Referring to Section III.8.4 of the *Eclipse Introduction tutorial*, change the **Japplet's** size so that it appears within a window of 300 pixels x 200, your JFrame should look like this:



14. Once your program runs perfectly, remember to submit just the source code: i.e lab1.java for grading.