Lab 1 - Vote Counter (java)
Maximum Points = 10

 The purpose of this lab is to review the development of a GUI program using the Java programming language. This lab exercise creates a GUI with two buttons representing two candidates (Red and Blue) in an election or popularity contest. The program computes the number of times each button is pressed. The program uses one listener and its ActionPerformed method will determine which button is pressed.

The files *VoteCounter.java* and *VoteCounterPanel.java* contain code for one candidate - Red. Save them to your directory and do the following:

1. Run the program with the two classes VoteCounter and VoteCounterPanel which should count votes for one candidate.

2. Add variables for Blue - a vote counter, a button, and a label.
3. Add the button and label for Blue to the panel; add the listener to the button.
4. Modify the ActionPerformed method of the VoteButtonListener class to determine which button was pressed and update the correct counter (look at the API for ActionEvent class and find a method that identifies which button is pressed.)
5. Test your program.

6. Now modify the program to add a message indicating who is winning. To do this you need to instantiate a new label, add it to the panel, and add an if statement in actionPerformed that determines who is winning (also test for ties) and sets the text of the label with the appropriate message.

```
//********************************************************
// VoteCounter.java
//
// Demonstrates a graphical user interface and event
// listeners to tally votes for two candidates, Red and Blue.
// [modified from a lab assignment in the Lewis/Loftis lab manual]
//********************************************************
import javax.swing.JFrame;

public class VoteCounter
{
   //---------------------------------------------
   // Creates the main program frame.
   //---------------------------------------------
   public static void main(String[] args)
   {
      JFrame frame = new JFrame("Vote Counter");

      frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
      frame.getContentPane().add(new VoteCounterPanel());
      frame.pack();
      frame.setVisible(true);
   }
}
```

```java
//*******************************************************
// VoteCounterPanel.java
//
// Panel for the GUI that tallies votes for two candidates,
// Red and Blue.
//*******************************************************

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

public class VoteCounterPanel extends JPanel
{
    private int votesForRed;
    private JButton red;
    private JLabel labelRed;

    //----------------------------------------------
    // Constructor: Sets up the GUI.
    //----------------------------------------------
    public VoteCounterPanel()
    {
        votesForRed = 0;
        red = new JButton("Vote for Red");
        red.addActionListener(new VoteButtonListener());
        labelRed = new JLabel("Votes for Red: " + votesForRed);

        add(red);
        add(labelRed);
        setPreferredSize(new Dimension(300, 40));
        setBackground(Color.cyan);
    }

    //*************************************************
    // Represents a listener for button push (action) events
    //*************************************************
    private class VoteButtonListener implements ActionListener
    {
        //----------------------------------------------
        // Updates the appropriate vote counter when a
        // button is pushed for one of the candidates.
        //----------------------------------------------
        public void actionPerformed(ActionEvent event)
        {
            votesForRed++;
            labelRed.setText("Votes for Red: " + votesForRed);
        }
    }
}
```

 (Due before 10 am on Tuesday, January 15, 2013) Submit your .java files containing your program and your timesheet documenting your time to the dropbox in CougarView.

Grades are determined using the following scale:

- Runs correctly...........................:___/2
- Correct output.........................:___/2
- Design of output.......................:___/1.5
- Design of logic........................:___/2
- Standards...............................:___/1.5
- Documentation.........................:___/1

[Grading Rubric](#) ([Word document](#))