```
package Unit02;
import javax.swing.*;                       // for JFrame
import java.awt.event.*;                    // for ActionListener
import java.awt.*;                          // for BorderLayout

        /*
        *   ©2017 www.hendermonger.com
        *   This program uses the 5 regions in a basic BorderLayout to create
        *   a basic calculator that will randomly generate 2 numbers and present
        *   the user with 2 buttons ... one will add the two numbers while the
        *   other button will subtract the two numbers. It is important to note
        *   the use of centerPanel.removeAll(); and centerPanel.repaint(); in
        *   order to make the old JLabels to be erased (otherwise each click of
        *   a button will add another JLabel to the screen).
        */

public class MyFirstWindow09 {

    static class Calculate implements ActionListener{           //ActionListener
        public void actionPerformed(ActionEvent e){
            /* EMPTY - Leaving room to have mutliple actions */ //Overrides later
        }
    }
    static class Close implements ActionListener{               //ActionListener
        public void actionPerformed(ActionEvent e){             //close window
            System.exit(0);
        }
    }
    static class Help implements ActionListener{             //ActionListener
        @Override
        public void actionPerformed(ActionEvent e){          //Open Help Window
            JFrame helpWindow = new JFrame("Help");
            helpWindow.setSize(500,500);
            JLabel helpInfo = new JLabel("<html><H2>HELP<BR></H2>The program "
                    + "shows 2 numbers.  Click the button to have the program "
                    + "find your answer");
            helpWindow.add(helpInfo);
            helpWindow.setVisible(true);
        }
    }
    public static void main(String[] args) {

        //Create JFrame for program
        JFrame frame = new JFrame("Interact!");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);   //default close
        frame.setSize(400,200);
```

```
//Create Menu Bar
JMenuBar menu = new JMenuBar();


//Add Menu Bar Options
JMenu file = new JMenu("File");
JMenu help = new JMenu("Help");


//Add Submenu Options
JMenuItem Exit = new JMenuItem("Exit");
Exit.addActionListener(new Close());        //add the Exit Action!!!
JMenuItem getHelp = new JMenuItem("Get Help");
getHelp.addActionListener(new Help());


//Add Menu items and subitems to appropriate objects
menu.add(file);
menu.add(help);
file.add(Exit);
help.add(getHelp);


//Make the Menu Visible
frame.setJMenuBar(menu);


//Create each panel for BorderLayout JFrame
JPanel northPanel = new JPanel();               //NORTH
JPanel westPanel = new JPanel();                //WEST
JPanel centerPanel = new JPanel();              //CENTER
JPanel eastPanel = new JPanel();                //EAST
JPanel southPanel = new JPanel();               //SOUTH


//Add JPanels to the program JFrame
frame.add(northPanel,BorderLayout.NORTH);       //add NORTH to JFrame
frame.add(westPanel, BorderLayout.WEST);        //add WEST to JFrame
frame.add(centerPanel, BorderLayout.CENTER);    //add CENTER to JFrame
frame.add(eastPanel, BorderLayout.EAST);        //add EAST to JFrame
frame.add(southPanel, BorderLayout.SOUTH);      //add SOUTH to JFrame

//Add Program Title to NORTH
JLabel programTitle = new JLabel("My Adding Machine!");   //NORTH JLabel
northPanel.add(programTitle);                             //add title
```

```
        //Create random numbers 1-100 to show up in EAST and WEST JPanels
        final int eastRandom = (int)(Math.random()*100+1);   //final for listener
        String eastRandomString = ""+eastRandom;             //string for JLabel
        JLabel eastNumber = new JLabel(eastRandomString);    //make JLabel
        eastPanel.add(eastNumber);                           //add JLabel to JPanel

        final int westRandom = (int)(Math.random()*100+1);   //final for listener
        String westRandomString = ""+westRandom;             //string for JLabel
        JLabel westNumber = new JLabel (westRandomString);   //make JLabel
        westPanel.add(westNumber);                           //add JLabel to JPanel

        //Create addNumbers JButton and give it an ActionListener
        JButton addNumbers = new JButton("Add");
        addNumbers.addActionListener(new Calculate(){       //add new listener
            @Override
            public void actionPerformed(ActionEvent e) {    //this listener does...
                centerPanel.removeAll();
                centerPanel.repaint();
                final int sum=westRandom+eastRandom;        //add numbers
                String centerSum = ""+sum;                  //String for JLabel
                JLabel centerSumString = new JLabel(centerSum); //make JLabel
                centerPanel.add(centerSumString);           //add JLabel to JPanel
                frame.setVisible(true);                     //make it show up!
            }
        });

        //Create subtractNumbers JButton and give it an ActionListener
        JButton subtractNumbers = new JButton("Subtract");
        subtractNumbers.addActionListener(new Calculate(){
            @Override
            public void actionPerformed(ActionEvent e) {    //this listener does...
                centerPanel.removeAll();
                centerPanel.repaint();
                final int difference=westRandom-eastRandom; //subtract numbers
                String centerDiff = ""+difference;          //String for JLabel
                JLabel centerDiffString = new JLabel(centerDiff); //make JLabel
                centerPanel.add(centerDiffString);          //add JLabel to JPanel
                frame.setVisible(true);                     //make it show up!
            }
        });
        southPanel.add(addNumbers);                         //add add JButton
        southPanel.add(subtractNumbers);                    //add subtract JButton
        frame.setVisible(true);                             //make JFrame Show
    }
}                                       /*  ©2017 www.hendermonger.com  */
```