1   Before Getting Started on the Exercises

Review the class examples we discussed this past week and make sure you understand the drawing commands we covered in class.

Remember to do the Shift+Ctrl+F to format the program and to put the standard comments at the top. Submit the java code files through MyClasses. The program must include header comments with at least your name, date, and short description of the program.

2   Paired Programming Exercise

Write a program that will display a smiley face, a frowny face and the infamous "Have a Day" face. The template for the program is below. The main program should not need to be altered in any way. Insert the needed code into the GraphicsJPanel class so that when the appropriate button is pressed the corresponding image will be displayed. The output of the program is below. Make sure that the fonts are semitransparent so that you can see the face behind the text.

2.1   GraphicsJPanel.java

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

public class GraphicsJPanel extends JPanel {

    public GraphicsJPanel() {
        setBackground(Color.white);
    }

    public void clearScreen() {
        Graphics g = getGraphics();

        g.setColor(Color.WHITE);
        g.fillRect(0, 0, getWidth(), getHeight());
    }

    public void drawSmile() {
        Graphics g = getGraphics();

        // Insert Code
    }

    public void drawFrown() {
        Graphics g = getGraphics();

        // Insert Code
    }

    public void drawDay() {
        Graphics g = getGraphics();

        // Insert Code
    }

    public void paint(Graphics g) {
        super.paint(g);
        clearScreen();
    }
}
```

2.2 Lab11.java

```java
import java.awt.*;
import java.awt.event.*;

import javax.swing.*;
import javax.swing.border.*;

public class Lab11 extends JFrame {

    private static Lab11 prog;
    private GraphicsJPanel canvas;

    public static void main(String[] args) {
        prog = new Lab11(args);
        prog.setTitle("Have a Day");

        prog.setBounds(20, 20, 500, 500);
        prog.setVisible(true);
        prog.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        prog.toFront();
    }

    public Lab11(String[] args) {
        canvas = new GraphicsJPanel();

        JButton OK_Button = new JButton("OK");
        OK_Button.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
                System.exit(0);
            }
        });

        JButton Clear_Button = new JButton("Clear");
        Clear_Button.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
                canvas.clearScreen();
            }
        });

        JButton Smile_Button = new JButton("Smile");
        Smile_Button.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
                canvas.drawSmile();
            }
        });

        JButton Frown_Button = new JButton("Frown");
        Frown_Button.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
                canvas.drawFrown();
            }
        });

        JButton Day_Button = new JButton("Day");
        Day_Button.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent evt) {
                canvas.drawDay();
            }
        });

        JPanel buttons = new JPanel();
        buttons.add(OK_Button);
        buttons.add(Clear_Button);
        buttons.add(Smile_Button);
        buttons.add(Frown_Button);
        buttons.add(Day_Button);
        buttons.setBorder(new LineBorder(Color.BLACK));

        getContentPane().setLayout(new BorderLayout());
        getContentPane().add(canvas, BorderLayout.CENTER);
        getContentPane().add(buttons, BorderLayout.SOUTH);
    }
}
```