```
import java.awt.Color;
import java.awt.Container;
import java.awt.Graphics;
import java.awt.GridLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

import javax.swing.JComponent;
import javax.swing.JFrame;
import javax.swing.JPanel;
import javax.swing.Timer;

/**
 * The Emoticon class constructs a GUI that will be displayed with four faces that
alternate in which one is visible
 * @author Evan Williams
 *
 */
public class Emoticon extends JFrame{


	private final int FRAME_WIDTH = 1800;
	private final int FRAME_HEIGHT = 600;
	private Face face;
	private int count = 1;

	/**
	 * Constructor for the Emoticon class, constructs the GUI
	 */
	Emoticon(){
		setSize(FRAME_WIDTH, FRAME_HEIGHT);
		setDefaultCloseOperation(EXIT_ON_CLOSE);
		setResizable(false);

		Timer t = new Timer(500, new TimeEventListener());
		t.start();
		face = new Face("Happy");
		add(face);


	}

	/**
	 * This class will cause events to occur after a certain amount of time has
passed
	 * Uses the method actionPerformed to do that
	 * @author Evan Williams
	 *
	 */
	class TimeEventListener implements ActionListener {

		/**
		 * The actionPerformed method has a requirement of their being a
variable count to change
		 * it changes the type of faces being displayed and increase the count
variable, once the count
		 * variable would leave the range of face types it gets reset to 1
		 */
		@Override
```

```
            public void actionPerformed(ActionEvent e) {
                  if(count == 1) {
                        face.type = "Happy";
                        repaint();
                        count++;
                  }else if(count == 2) {
                        face.type = "Sad";
                        repaint();
                        count++;
                  }else if(count == 3) {
                        face.type = "Surprised";
                        repaint();
                        count++;
                  }else{
                        face.type = "Wink";
                        repaint();
                        count=1;
                  }

            }

      }

      /**
       * The Face class has all of the details of how the four different faces are
to be constructed, it has an instance variable that determines
       * which type of face will be displayed, those faces being Happy, Sad,
Surprised, and Winky
       * @author Evan Williams
       *
       */
      class Face extends JComponent{
            private int width = 300;
            private int height = 300;
            private int x = 125;
            private int y = 125;
            private String type;

            /**
             * Constructor for the Face class, type is used to determine which face
type to use when painting the component
             * @param type
             */
            Face(String type){
                  this.type = type;
            }

            /**
             * Builds the four different faces depending on face type and properly
positions them
             */
            @Override
            protected void paintComponent(Graphics g) {
                  if(this.type.equals("Happy")) {
                        g.setColor(Color.YELLOW);
                        g.fillOval(x, y, width, height);
                        g.setColor(Color.BLUE);
                        g.fillOval(x+75,y+50, 50, 50);
                        g.fillOval(x+175,y+50, 50, 50);
```

```
                        g.setColor(Color.RED);
                        g.drawArc(x+75, y+150, 150, 100, 0, -180);
                        super.paintComponent(g);
                  }else if(this.type.equals("Sad")) {
                        g.setColor(Color.YELLOW);
                        g.fillOval(x+400, y, width, height);
                        g.setColor(Color.BLUE);
                        g.fillOval(x+475,y+50, 50, 50);
                        g.fillOval(x+575,y+50, 50, 50);
                        g.setColor(Color.RED);
                        g.drawArc(x+475, y+150, 150, 100, 0, 180);
                        super.paintComponent(g);
                  }else if(this.type.equals("Surprised")) {
                        g.setColor(Color.YELLOW);
                        g.fillOval(x+800, y, width, height);
                        g.setColor(Color.BLUE);
                        g.fillOval(x+875,y+50, 50, 50);
                        g.fillOval(x+975,y+50, 50, 50);
                        g.setColor(Color.RED);
                        g.drawOval(x+925, y+150, 50, 50);
                        super.paintComponent(g);
                  }else if(this.type.equals("Wink")) {
                        g.setColor(Color.YELLOW);
                        g.fillOval(x+1200, y, width, height);
                        g.setColor(Color.BLUE);
                        g.fillOval(x+1275,y+50, 50, 50);
                        g.drawLine(x+1375, y+75, x+1425, y+75);
                        g.setColor(Color.RED);
                        g.drawArc(x+1275, y+150, 150, 100, 0, -180);
                        super.paintComponent(g);
                  }
            }
      }
}
```