Experiment Name:	Traffic Light		
Experiment No. :	30	**Date :**	21.10.24
Compiler :	javac	**Filename :**	TrafficLight.java
Aim :	To develop a Java program that simulates a traffic light system using a graphical user interface.		

PROGRAM:

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
public class TrafficLight {
   public static void main(String[] args) {
      JFrame frame = new JFrame("Traffic Light Simulator");
      frame.setSize(300, 400);
      frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
      frame.setLayout(new BorderLayout());
      JRadioButton redButton = new JRadioButton("Red");
      JRadioButton yellowButton = new JRadioButton("Yellow");
      JRadioButton greenButton = new JRadioButton("Green");
      ButtonGroup group = new ButtonGroup();
      group.add(redButton);
      group.add(yellowButton);
      group.add(greenButton);
      JPanel buttonPanel = new JPanel();
      buttonPanel.add(redButton);
```

```
buttonPanel.add(yellowButton);
buttonPanel.add(greenButton);
JPanel lightPanel = new JPanel() {
   @Override
   protected void paintComponent(Graphics g) {
      super.paintComponent(g);
      g.setColor(Color.BLACK);
      g.fillRect(100, 50, 80, 240);
      g.setColor(redButton.isSelected() ? Color.RED : Color.DARK_GRAY);
      g.fillOval(110, 60, 60, 60);
      g.setColor(yellowButton.isSelected() ? Color.YELLOW : Color.DARK_GRAY);
      g.fillOval(110, 130, 60, 60);
      g.setColor(greenButton.isSelected() ? Color.GREEN : Color.DARK_GRAY);
      g.fillOval(110, 200, 60, 60);
   }
};
lightPanel.setPreferredSize(new Dimension(300, 300));
ActionListener listener = new ActionListener() {
   @Override
   public void actionPerformed(ActionEvent e) {
      lightPanel.repaint();
   }
};
redButton.addActionListener(listener);
yellowButton.addActionListener(listener);
greenButton.addActionListener(listener);
```

```
        frame.add(buttonPanel, BorderLayout.SOUTH);
        frame.add(lightPanel, BorderLayout.CENTER);
        frame.setVisible(true);
    }
}
```

OUTPUT: