```java
import java.awt.event.*;
import javax.swing.*;
import java.awt.*;
class Calculator extends JFrame implements ActionListener { static JFrame f;
        static JTextField l;
        String s0, s1, s2;
        Calculator() {
                s0 = s1 = s2 = "";
        }
        public static void main(String args[]) {
                f = new JFrame("calculator");
                Calculator c = new Calculator();
                l = new JTextField(16);
                l.setEditable(false);
                JButton b0, b1, b2, b3, b4, b5, b6, b7, b8, b9, ba, bs, bd, bm, be, beq,  beq1;
                b0 = new JButton("0");
                b1 = new JButton("1");
                b2 = new JButton("2");
                b3 = new JButton("3");
                b4 = new JButton("4");
                b5 = new JButton("5");
                b6 = new JButton("6");
                b7 = new JButton("7");
                b8 = new JButton("8");
                b9 = new JButton("9");
                beq1 = new JButton("=");
                ba = new JButton("+");
                bs = new JButton("-");
                bd = new JButton("/");
                bm = new JButton("*");
                beq = new JButton("C");
                be = new JButton(".");
                JPanel p = new JPanel();
                bm.addActionListener(c);
                bd.addActionListener(c);
                bs.addActionListener(c);
                ba.addActionListener(c);
                b9.addActionListener(c);
                b8.addActionListener(c);
                b7.addActionListener(c);
                b6.addActionListener(c);
                b5.addActionListener(c);
                b4.addActionListener(c);
                b3.addActionListener(c);
                b2.addActionListener(c);
                b1.addActionListener(c);
                b0.addActionListener(c);
                be.addActionListener(c);
                beq.addActionListener(c);
                beq1.addActionListener(c);
                p.add(l);
                p.add(ba);
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            p.add(b1);
            p.add(b2);
            p.add(b3);
            p.add(bs);
            p.add(b4);
            p.add(b5);
            p.add(b6);
            p.add(bm);
            p.add(b7);
            p.add(b8);
            p.add(b9);
            p.add(bd);
            p.add(be);
            p.add(b0);
            p.add(beq);
            p.add(beq1);
            p.setBackground(Color.blue);
            f.add(p);
            f.setSize(200, 220);
            f.show();
    }
    public void actionPerformed(ActionEvent e) {
            String s = e.getActionCommand();
            if ((s.charAt(0) >= '0' && s.charAt(0) <= '9') || s.charAt(0) == '.') {
                    if (!s1.equals(""))
                            s2 = s2 + s;
                    else
                            s0 = s0 + s;
                    l.setText(s0 + s1 + s2);
            } else if (s.charAt(0) == 'C') {
                    s0 = s1 = s2 = "";
                    l.setText(s0 + s1 + s2);
            } else if (s.charAt(0) == '=') {
                    double te;
                    if (s1.equals("+"))
                            te = (Double.parseDouble(s0) + Double.parseDouble(s2));
                    else if (s1.equals("-"))
                            te = (Double.parseDouble(s0) – Double.parseDouble(s2));
                    else if (s1.equals("/"))
                            te = (Double.parseDouble(s0) / Double.parseDouble(s2));
                    else
                            te = (Double.parseDouble(s0) * Double.parseDouble(s2));
                            l.setText(s0 + s1 + s2 + "=" + te);
                            s0 = Double.toString(te);
                            s1 = s2 = "";
            } else {
                    if (s1.equals("") || s2.equals(""))
                            s1 = s;
                    else {
                            double te;
                            if (s1.equals("+"))
                                    te = (Double.parseDouble(s0) + Double.parseDouble(s2));
```
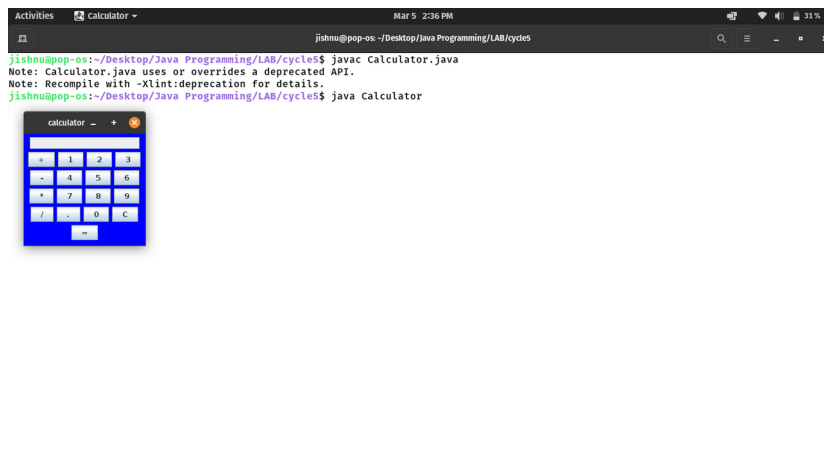
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                    else if (s1.equals("-"))
                            te = (Double.parseDouble(s0) - Double.parseDouble(s2));
                    else if (s1.equals("/"))
                            te = (Double.parseDouble(s0) / Double.parseDouble(s2));
                    else
                            te = (Double.parseDouble(s0) * Double.parseDouble(s2));
                            s0 = Double.toString(te);
                            s1 = s;
                            s2 = "";
                    }
                    l.setText(s0 + s1 + s2);
            }
        }
}
```

```java
import java.awt.*;
import java.awt.event.*;
class Light extends Frame implements ItemListener {
        String clr = "";
        Light() {
                Checkbox c1, c2, c3;
                CheckboxGroup cbg = new CheckboxGroup();
                c1 = new Checkbox("red", true, cbg);
                c2 = new Checkbox("green", true, cbg);
                c3 = new Checkbox("yellow", true, cbg); setSize(500, 500);
                setTitle("Traffic Signal");
                setVisible(true);
                setLayout(new FlowLayout(FlowLayout.CENTER));
                add(c1);
                add(c2);
```

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                add(c3);
                c1.addItemListener(this);
                c2.addItemListener(this);
                c3.addItemListener(this);
                addWindowListener(new WindowAdapter(){
                        public void windowClosing(WindowEvent e){
                                System.exit(0);
                        }
                }
        }
        public static void main(String[] args) {
                new Light();
        }
        public void itemStateChanged(ItemEvent e) {
                clr = (e.getItem()).toString();
                repaint();
        }
        public void paint(Graphics g) {
                g.drawString("Traffic signals", 200, 150);
                g.drawOval(200, 175, 50, 50);
                g.drawOval(200, 250, 50, 50);
                g.drawOval(200, 325, 50, 50);
                g.drawRect(180, 100, 100, 325);
                if (clr.equals("red")) {
                        g.setColor(Color.red);
                        g.fillOval(200, 175, 50, 50);
                }
                if (clr.equals("green")) {
                        g.setColor(Color.green);
                        g.fillOval(200, 250, 50, 50);
                }
                if (clr.equals("yellow")) {
                        g.setColor(Color.yellow);
                        g.fillOval(200, 325, 50, 50);
                }
        }
}
```