**Program1**

import java.awt.\*; import java.awt.event.\*; import javax.swing.\*;

class BuildCalculator extends JFrame implements ActionListener {

JFrame actualWindow;

JPanel resultPanel, buttonPanel, infoPanel;

JTextField resultTxt;

JButton btn\_digits[] = new JButton[10];

JButton btn\_plus, btn\_minus, btn\_mul, btn\_div, btn\_equal, btn\_dot, btn\_clear; char eventFrom;

JLabel expression, appTitle; double oparand\_1 = 0, operand\_2 = 0; String operator = "=";

BuildCalculator() {

Font txtFont = new Font("SansSerif", Font.BOLD, 20);

Font titleFont = new Font("SansSerif", Font.BOLD, 30); Font expressionFont = new Font("SansSerif", Font.BOLD, 15); actualWindow = new JFrame("Calculator");

resultPanel = new JPanel(); buttonPanel = new JPanel(); infoPanel = new JPanel(); actualWindow.setLayout(new GridLayout(3, 1)); buttonPanel.setLayout(new GridLayout(4, 4)); infoPanel.setLayout(new GridLayout(3, 1)); actualWindow.setResizable(false); appTitle = new JLabel("My Calculator");

appTitle.setFont(titleFont);

expression = new JLabel("Expression shown here"); expression.setFont(expressionFont); resultTxt = new JTextField(15); resultTxt.setBorder(null);

resultTxt.setPreferredSize(new Dimension(15, 50));

resultTxt.setFont(txtFont);

resultTxt.setHorizontalAlignment(SwingConstants.RIGHT); for (int i = 0; i < 10; i++) { btn\_digits[i] = new JButton("" + i);

btn\_digits[i].addActionListener(this);

}

btn\_plus = new JButton("+"); btn\_plus.addActionListener(this); btn\_minus = new JButton("-"); btn\_minus.addActionListener(this); btn\_mul = new JButton("\*"); btn\_mul.addActionListener(this); btn\_div = new JButton("/"); btn\_div.addActionListener(this); btn\_dot = new JButton("."); btn\_dot.addActionListener(this); btn\_equal = new JButton("="); btn\_equal.addActionListener(this); btn\_clear = new JButton("Clear"); btn\_clear.addActionListener(this);

resultPanel.add(appTitle); resultPanel.add(resultTxt); resultPanel.add(expression); for (int i = 0; i < 10; i++) {

buttonPanel.add(btn\_digits[i]);

}

buttonPanel.add(btn\_plus); buttonPanel.add(btn\_minus); buttonPanel.add(btn\_mul); buttonPanel.add(btn\_div); buttonPanel.add(btn\_dot); buttonPanel.add(btn\_equal); infoPanel.add(btn\_clear); actualWindow.add(resultPanel); actualWindow.add(buttonPanel); actualWindow.add(infoPanel); actualWindow.setSize(300, 450);

actualWindow.setVisible(true);

}

public void actionPerformed(ActionEvent e) { eventFrom = e.getActionCommand().charAt(0); String buildNumber; if (Character.isDigit(eventFrom)) { buildNumber = resultTxt.getText() + eventFrom; resultTxt.setText(buildNumber);

}

else if (e.getActionCommand() == ".") { buildNumber = resultTxt.getText() + eventFrom; resultTxt.setText(buildNumber);

}

else if (eventFrom != '=') {

oparand\_1 = Double.parseDouble(resultTxt.getText()); operator = e.getActionCommand(); expression.setText(oparand\_1 + " " + operator);

resultTxt.setText("");

}

else if (e.getActionCommand() == "Clear") {

resultTxt.setText("");

} else {

operand\_2 = Double.parseDouble(resultTxt.getText());

expression.setText(expression.getText() + " " + operand\_2); switch (operator) {

case "+":

resultTxt.setText("" + (oparand\_1 + operand\_2)); break; case "-":

resultTxt.setText("" + (oparand\_1 - operand\_2)); break; case "\*":

resultTxt.setText("" + (oparand\_1 \* operand\_2)); break; case "/": try {

if (operand\_2 == 0)

throw new ArithmeticException(); resultTxt.setText("" + (oparand\_1 / operand\_2)); break;

} catch (ArithmeticException ae) {

JOptionPane.showMessageDialog(actualWindow, "Divisor can not be ZERO");

}

}

}

}

}

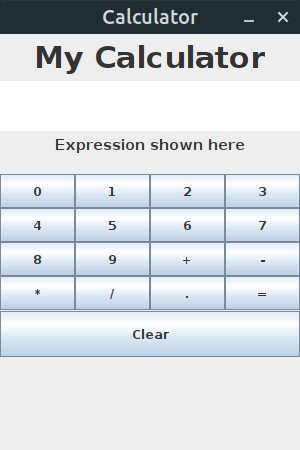
class Calc2 {

public static void main(String[] args) { new BuildCalculator();

}

}

# Output



# Program2

import javax.swing.\*; import javax.swing.event.\*; import java.awt.\*; import java.awt.event.\*;

class A extends JFrame implements ItemListener {

public JLabel l1, l2; public JRadioButton r1, r2, r3; public ButtonGroup bg; public JPanel p, p1;

public A() {

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

setLayout(new GridLayout(2, 1)); setSize(800, 400); p = new JPanel(new FlowLayout()); p1 = new JPanel(new FlowLayout());

l1 = new JLabel();

Font f = new Font("Verdana", Font.BOLD, 60); l1.setFont(f); add(l1);

p.add(l1); add(p);

l2 = new JLabel("Select Lights");

p1.add(l2);

JRadioButton r1 = new JRadioButton("Red Light");

r1.setBackground(Color.red); p1.add(r1); r1.addItemListener(this);

JRadioButton r2 = new JRadioButton("Yellow Light"); r2.setBackground(Color.YELLOW); p1.add(r2); r2.addItemListener(this);

JRadioButton r3 = new JRadioButton("Green Light"); r3.setBackground(Color.GREEN); p1.add(r3); r3.addItemListener(this); add(p1); bg = new ButtonGroup();

bg.add(r1); bg.add(r2); bg.add(r3); setVisible(true);

}

public void itemStateChanged(ItemEvent i) { JRadioButton jb = (JRadioButton) i.getSource();

switch (jb.getText()) { case "Red Light": { l1.setText("BULB"); l1.setForeground(Color.RED);

} break; case "Yellow Light": { l1.setText("BULB");

l1.setForeground(Color.YELLOW);

} break; case "Green Light": { l1.setText("BULB");

l1.setForeground(Color.GREEN);

} break;

}

}

}

public class TLights { public static void main(String[] args) {

A a = new A();

}

}

# Output

