JAVA MINI PROJECT

Title : Calculator Using Swings

Explanation :

Java Swing is a GUI (graphical user Interface) widget toolkit for Java. Java Swing is a part of Oracle's Java foundation classes . Java Swing is an API for providing graphical user interface elements to Java Programs.Swing was created to provide more powerful and flexible components than Java AWT (Abstract Window Toolkit).

We have created a basic calculator app using java swings. We have the following operations:

1. Addition
2. Subtraction
3. Division
4. Multiplication

Code :

```
import java.awt.event.*;
import javax.swing.*;
import java.awt.*;
class calculator extends JFrame implements ActionListener {
   static JTextField l;
   JButton b0, b1, b2, b3, b4, b5, b6, b7, b8, b9, ba, bs, bd, bm, be, beq, beq1;
   String s0, s1, s2;
   calculator()
   {
      s0 = s1 = s2 = "";
      l = new JTextField(16);
      l.setEditable(false);
      b0 = new JButton("0");
      b0.setBackground(Color.black);
      b0.setForeground(Color.white);
      b1 = new JButton("1");
      b1.setBackground(Color.black);
      b1.setForeground(Color.white);
      b2 = new JButton("2");
      b2.setBackground(Color.black);
```

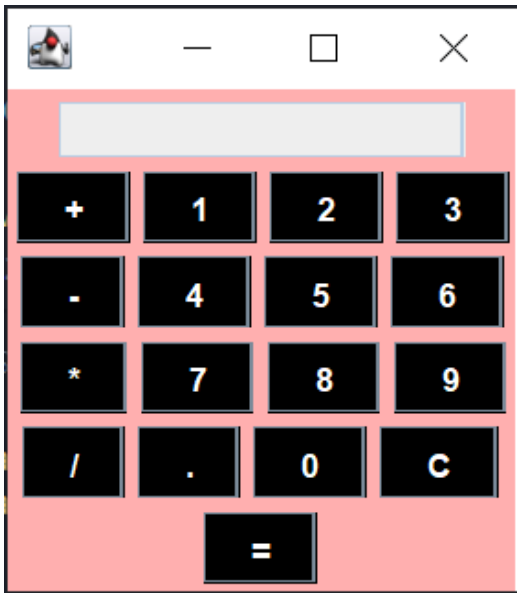
```
b2.setForeground(Color.white);
b3 = new JButton("3");
b3.setBackground(Color.black);
b3.setForeground(Color.white);
b4 = new JButton("4");
b4.setBackground(Color.black);
b4.setForeground(Color.white);
b5 = new JButton("5");
b5.setBackground(Color.black);
b5.setForeground(Color.white);
b6 = new JButton("6");
b6.setBackground(Color.black);
b6.setForeground(Color.white);
b7 = new JButton("7");
b7.setBackground(Color.black);
b7.setForeground(Color.white);
b8 = new JButton("8");
b8.setBackground(Color.black);
b8.setForeground(Color.white);
b9 = new JButton("9");
b9.setBackground(Color.black);
b9.setForeground(Color.white);
beq1 = new JButton("=");
beq1.setBackground(Color.black);
beq1.setForeground(Color.white);
ba = new JButton("+");
ba.setBackground(Color.black);
ba.setForeground(Color.white);
bs = new JButton("-");
bs.setBackground(Color.black);
bs.setForeground(Color.white);
bd = new JButton("/");
```

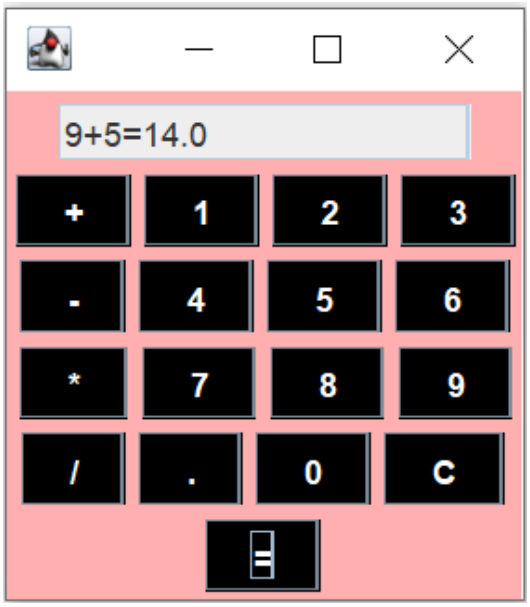
```
bd.setBackground(Color.black);
bd.setForeground(Color.white);
bm = new JButton("*");
bm.setBackground(Color.black);
bm.setForeground(Color.white);
beq = new JButton("C");
beq.setBackground(Color.black);
beq.setForeground(Color.white);
be = new JButton(".");
be.setBackground(Color.black);
be.setForeground(Color.white);
JPanel p = new JPanel();
bm.addActionListener(this);
bd.addActionListener(this);
bs.addActionListener(this);
ba.addActionListener(this);
b9.addActionListener(this);
b8.addActionListener(this);
b7.addActionListener(this);
b6.addActionListener(this);
b5.addActionListener(this);
b4.addActionListener(this);
b3.addActionListener(this);
b2.addAxctionListener(this);
b1.addActionListener(this);
b0.addActionListener(this);
be.addActionListener(this);
beq.addActionListener(this);
beq1.addActionListener(this);

p.add(l);
p.add(ba);
```

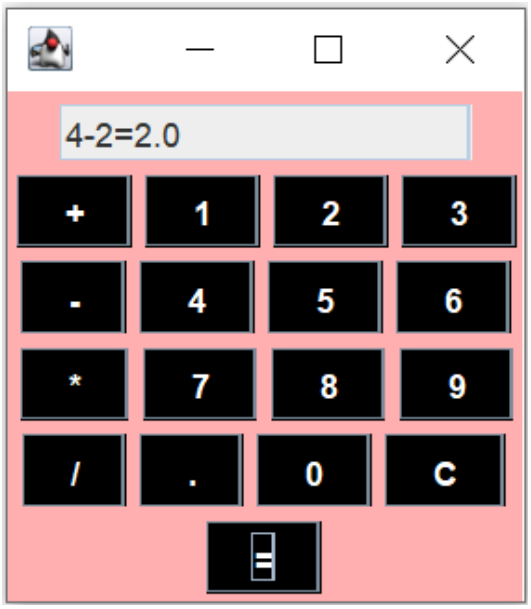
```
        p.add(b1);
        p.add(b2);
        p.add(b3);
        p.add(bs);
        p.add(b4);
        p.add(b5);
        p.add(b6);
        p.add(bm);
        p.add(b7);
        p.add(b8);
        p.add(b9);
        p.add(bd);
        p.add(be);
        p.add(b0);
        p.add(beq);
        p.add(beq1);
        p.setBackground(Color.pink);
        this.add(p);
        this.setSize(200, 220);
        this.setVisible(true);
    }
    public static void main(String args[])
    {
        calculator c = new calculator();
    }
    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
```

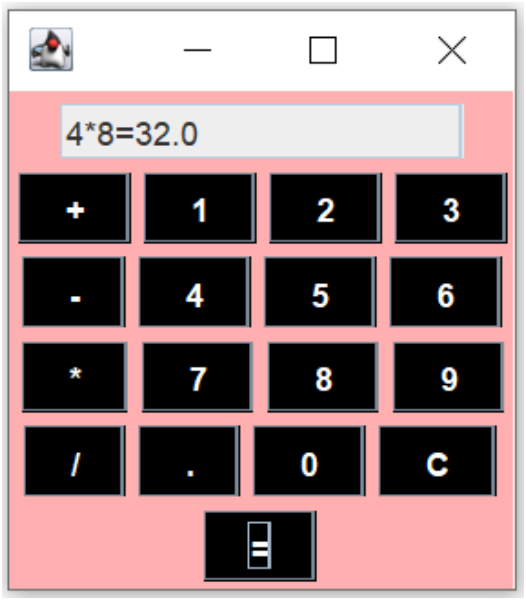
```
            s0 = s0 + s;
        l.setText(s0 + s1 + s2);
      }
      else if (s.charAt(0) == 'C') {
        s0 = s1 = s2 = "";
        l.setText(s0 + s1 + s2);
      }
      else if (s.charAt(0) == '=') {

        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 {
        s1 = s;
        l.setText(s0 + s1 + s2);
      }
    }
}
```

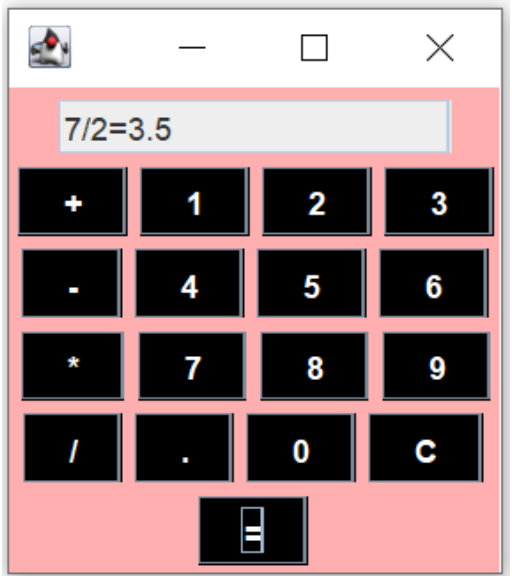
Output :


+ 1 2 3
- 4 5 6
* 7 8 9
/ . 0 C
=


9+5=14.0
+ 1 2 3
- 4 5 6
* 7 8 9
/ . 0 C
=


4-2=2.0
+ 1 2 3
- 4 5 6
* 7 8 9
/ . 0 C
=


4*8=32.0
+ 1 2 3
- 4 5 6
* 7 8 9
/ . 0 C
=


7/2=3.5
+ 1 2 3
- 4 5 6
* 7 8 9
/ . 0 C
=