

SWING IMPLEMENTATION

PROGRAM

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

class Calc implements ActionListener
{
    String op;
    int n1,n2;
    JTextField tf;
    JButton b0,b1,b2,b3,b4,b5,b6,b7,b8,b9,ad,sub,mult,divd,res,clr;

    Calc()
    {
        JFrame f=new JFrame("Calculator");
        JPanel p=new JPanel();
        tf=new JTextField(20);

        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");
        ad=new JButton("+");
        sub=new JButton("-");
        mult=new JButton("X");
        divd=new JButton("/");
        res=new JButton("=");
        clr=new JButton("C");

        p.setLayout(null);
```

```
tf.setBounds(100,100,200,30);  
p.add(tf);
```

```
b1.setBounds(100,140,50,30);  
p.add(b1);
```

```
b2.setBounds(150,140,50,30);  
p.add(b2);
```

```
b3.setBounds(200,140,50,30);  
p.add(b3);
```

```
ad.setBounds(250,140,50,30);  
p.add(ad);
```

```
b4.setBounds(100,170,50,30);  
p.add(b4);
```

```
b5.setBounds(150,170,50,30);  
p.add(b5);
```

```
b6.setBounds(200,170,50,30);  
p.add(b6);
```

```
sub.setBounds(250,170,50,30);  
p.add(sub);
```

```
b7.setBounds(100,200,50,30);  
p.add(b7);
```

```
b8.setBounds(150,200,50,30);  
p.add(b8);
```

```
b9.setBounds(200,200,50,30);  
p.add(b9);
```

```
mult.setBounds(250,200,50,30);  
p.add(mult);
```

```
b0.setBounds(100,230,50,30);
p.add(b0);

clr.setBounds(150,230,50,30);
p.add(clr);

res.setBounds(200,230,50,30);
p.add(res);

divd.setBounds(250,230,50,30);
p.add(divd);

f.setContentPane(p);
f.setSize(400,400);
f.setVisible(true);
```

```
b0.addActionListener(this);
b1.addActionListener(this);
b2.addActionListener(this);
b3.addActionListener(this);
b4.addActionListener(this);
b5.addActionListener(this);
b6.addActionListener(this);
b7.addActionListener(this);
b8.addActionListener(this);
b9.addActionListener(this);
```

```
ad.addActionListener(this);
mult.addActionListener(this);
sub.addActionListener(this);
divd.addActionListener(this);
clr.addActionListener(this);
res.addActionListener(this);
```

```
}
```

```
public void actionPerformed(ActionEvent e)
{
    if(e.getSource()==b0)
    {
```

```
tf.setText(tf.getText()+b0.getText());
}

else if(e.getSource()==b1)
{
    tf.setText(tf.getText()+b1.getText());
}

else if(e.getSource()==b2)
{
    tf.setText(tf.getText()+b2.getText());
}

else if(e.getSource()==b3)
{
    tf.setText(tf.getText()+b3.getText());
}

else if(e.getSource()==b4)
{
    tf.setText(tf.getText()+b4.getText());
}

else if(e.getSource()==b5)
{
    tf.setText(tf.getText()+b5.getText());
}

else if(e.getSource()==b6)
{
    tf.setText(tf.getText()+b6.getText());
}

else if(e.getSource()==b7)
{
    tf.setText(tf.getText()+b7.getText());
}

else if(e.getSource()==b8)
{
```

```

        tf.setText(tf.getText()+b8.getText());
    }

    else if(e.getSource()==b9)
    {
        tf.setText(tf.getText()+b9.getText());
    }

    else if(e.getSource()==ad)
    {
        n1=Integer.parseInt(tf.getText());
        op="+";
        tf.setText("");
    }

    else if(e.getSource()==sub)
    {
        n1=Integer.parseInt(tf.getText());
        op="-";
        tf.setText("");
    }

    else if(e.getSource()==mult)
    {
        n1=Integer.parseInt(tf.getText());
        op="x";
        tf.setText("");
    }

    else if(e.getSource()==divd)
    {
        n1=Integer.parseInt(tf.getText());
        op="/";
        tf.setText("");
    }

    else if(e.getSource()==res)
    {
        n2=Integer.parseInt(tf.getText());
        float r=calc(n1,op,n2);
    }

```

```

        tf.setText(n1+" "+op+" "+n2+" = "+r);
    }

    else if(e.getSource()==clr)
    {
        tf.setText("");
    }
}

float calc(int a,String optr,int b)
{
    float result=0;

    switch(optr)
    {

        case "+":

            result=a+b;
            break;

            case "-":
            result=a-b;
            break;

            case "x":
            result=a*b;
            break;

            case "/":
            result=(float)a/b;
            break;
    }

    return result;
}

}

public class Calculator
{

```

```
public static void main(String[] args)
{
    Calc c=new Calc();
}
```

OUTPUT

