

```
/* PROGRAM TO IMPLEMENT SIMPLE CALCULATOR USING AWT*/
```

```
import java.awt.*;
import java.awt.event.*;
import java.applet.*;
/*
<applet code="Cal" width=300 height=300>
</applet>
*/
public class Cal extends Applet implements ActionListener{
    String msg=" ";
    int v1,v2,result;
    TextField t1;
    Button b[]=new Button[10];
    Button add,sub,mul,div,clear,mod,EQ;
    char OP;
    public void init(){
        Color k=new Color(120,89,90);
        setBackground(k);
        t1=new TextField(100);
        GridLayout gl=new GridLayout(4,5);
        setLayout(gl);
        for(int i=0;i<10;i++){
            b[i]=new Button(""+i);
        }
        add=new Button("+");
        sub=new Button("-");
        mul=new Button("*");
        div=new Button("/");
        mod=new Button("%");
        clear=new Button("clear");
        EQ=new Button("=");
        t1.addActionListener(this);
        add(t1);
        for(int i=0;i<10;i++) {
            add(b[i]);
        }
        add(add);
        add(sub);
        add(mul);
        add(div);
        add(mod);
        add(clear);
        add(EQ);
        for(int i=0;i<10;i++) {
            b[i].addActionListener(this);
        }
        add.addActionListener(this);
        sub.addActionListener(this);
        mul.addActionListener(this);
        div.addActionListener(this);
        mod.addActionListener(this);
        clear.addActionListener(this);
        EQ.addActionListener(this);
    }
    public void actionPerformed(ActionEvent ae){
        String str=ae.getActionCommand();
```

```

char ch=str.charAt(0);
if (Character.isDigit(ch))
    t1.setText(t1.getText()+str);
else if(str.equals("+")){
    v1=Integer.parseInt(t1.getText());
    OP='+';
    t1.setText("");
}
else if(str.equals("-")) {
    v1=Integer.parseInt(t1.getText());
    OP='-';
    t1.setText("");
}
else if(str.equals("*")) {
    v1=Integer.parseInt(t1.getText());
    OP='*';
    t1.setText("");
}
else if(str.equals("/")) {
    v1=Integer.parseInt(t1.getText());
    OP='/';
    t1.setText("");
}
else if(str.equals("%")){
    v1=Integer.parseInt(t1.getText());
    OP='%';
    t1.setText("");
}
if(str.equals("=")){
    v2=Integer.parseInt(t1.getText());
    if(OP=='+')
        result=v1+v2;
    else if(OP=='-')
        result=v1-v2;
    else if(OP=='*')
        result=v1*v2;
    else if(OP=='/')
        result=v1/v2;
    else if(OP=='%')
        result=v1%v2;
    t1.setText(""+result);
}
if(str.equals("clear")) {
    t1.setText("");
}
}
}

```

**/\*PROGRAM TO IMPLEMENT SIMPLE CALCULATOR USING SWING\*/**

```

import java.awt.*;
import javax.swing.*;
public class Calculator1 implements ActionListener{
    JLabel jlab;
    char OP;
    JTextField t1;
    int v1,v2;
    float result;
    Calculator1( ) {
        JButton b[]=new JButton[10];
        JButton add,sub,mul,div,clear,mod,EQ;
        JFrame jfrm = new JFrame("CALCULATOR");
        jfrm.setSize(300, 180);
        jfrm.setLayout(new GridLayout(5,5));
        jfrm.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        t1=new JTextField(100);
        for(int i=0;i<10;i++) {
            b[i]=new JButton(""+i);
        }
        add=new JButton("+");
        sub=new JButton("-");
        mul=new JButton("*");
        div=new JButton("/");
        mod=new JButton("%");
        clear=new JButton("clear");
        EQ=new JButton("=");
        t1.addActionListener(this);
        for(int i=0;i<10;i++){
            b[i].addActionListener(this);
        }
        add.addActionListener(this);
        sub.addActionListener(this);
        mul.addActionListener(this);
        div.addActionListener(this);
        mod.addActionListener(this);
        clear.addActionListener(this);
        EQ.addActionListener(this);
        jfrm.add(t1);
        for(int i=0;i<10;i++) {
            jfrm.add(b[i]);
        }
        jfrm.add(add);
        jfrm.add(sub);
        jfrm.add(mul);
        jfrm.add(div);
        jfrm.add(mod);
        jfrm.add(clear);
        jfrm.add(EQ);
        jfrm.setVisible(true);
    }

    public void actionPerformed(ActionEvent ae) {
        String str=ae.getActionCommand();
        char ch=str.charAt(0);
        if (Character.isDigit(ch))
            t1.setText(t1.getText()+str);
    }
}

```

```

else if(str.equals("+")) {
    v1=Integer.parseInt(t1.getText());
    OP='+';
    t1.setText("");
}
else if(str.equals("-")){
    v1=Integer.parseInt(t1.getText());
    OP='-';
    t1.setText("");
}
else if(str.equals("*")) {
    v1=Integer.parseInt(t1.getText());
    OP='*';
    t1.setText("");
}
else if(str.equals("/")){
    v1=Integer.parseInt(t1.getText());
    OP='/';
    t1.setText("");
}
else if(str.equals("%")){
    v1=Integer.parseInt(t1.getText());
    OP='%';
    t1.setText("");
}
if(str.equals("=")){
    v2=Integer.parseInt(t1.getText());
    if(OP=='+')
        result=v1+v2;
    else if(OP=='-')
        result=v1-v2;
    else if(OP=='*')
        result=v1*v2;
    else if(OP=='/')
        result=(float)v1/v2;
    else if(OP=='%')
        result=v1%v2;
    t1.setText(""+result);
}
if(str.equals("clear")) {
    t1.setText("");
}
}
}
public static void main(String[] args) {
    // Create the GUI on the event dispatching thread.
    SwingUtilities.invokeLater(new Runnable() {
        public void run() {
            new Calculator1();
        }
    });
}
}
}

```