**Exp No. 10 WAP to java program to design a calculator using a java swing components**

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import javax.swing.\*;

import java.awt.event.\*;

class Calc implements ActionListener

{

JFrame f;

JTextField t;

JButton b1,b2,b3,b4,b5,b6,b7,b8,b9,b0,bdiv,bmul,bsub,badd,bdec,beq,bdel,bclr;

static double a=0,b=0,result=0;

static int operator=0;

Calc()

{

f=new JFrame("Calculator");

t=new JTextField();

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");

b0=new JButton("0");

bdiv=new JButton("/");

bmul=new JButton("\*");

bsub=new JButton("-");

badd=new JButton("+");

bdec=new JButton(".");

beq=new JButton("=");

bdel=new JButton("Delete");

bclr=new JButton("Clear");

t.setBounds(30,40,280,30);

b7.setBounds(40,100,50,40);

b8.setBounds(110,100,50,40);

b9.setBounds(180,100,50,40);

bdiv.setBounds(250,100,50,40);

b4.setBounds(40,170,50,40);

b5.setBounds(110,170,50,40);

b6.setBounds(180,170,50,40);

bmul.setBounds(250,170,50,40);

b1.setBounds(40,240,50,40);

b2.setBounds(110,240,50,40);

b3.setBounds(180,240,50,40);

bsub.setBounds(250,240,50,40);

bdec.setBounds(40,310,50,40);

b0.setBounds(110,310,50,40);

beq.setBounds(180,310,50,40);

badd.setBounds(250,310,50,40);

bdel.setBounds(60,380,100,40);

bclr.setBounds(180,380,100,40);

f.add(t);

f.add(b7);

f.add(b8);

f.add(b9);

f.add(bdiv);

f.add(b4);

f.add(b5);

f.add(b6);

f.add(bmul);

f.add(b1);

f.add(b2);

f.add(b3);

f.add(bsub);

f.add(bdec);

f.add(b0);

f.add(beq);

f.add(badd);

f.add(bdel);

f.add(bclr);

f.setLayout(null);

f.setVisible(true);

f.setSize(350,500);

f.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

f.setResizable(false);

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);

b0.addActionListener(this);

badd.addActionListener(this);

bdiv.addActionListener(this);

bmul.addActionListener(this);

bsub.addActionListener(this);

bdec.addActionListener(this);

beq.addActionListener(this);

bdel.addActionListener(this);

bclr.addActionListener(this);

}

public void actionPerformed(ActionEvent e)

{

if(e.getSource()==b1)

t.setText(t.getText().concat("1"));

if(e.getSource()==b2)

t.setText(t.getText().concat("2"));

if(e.getSource()==b3)

t.setText(t.getText().concat("3"));

if(e.getSource()==b4)

t.setText(t.getText().concat("4"));

if(e.getSource()==b5)

t.setText(t.getText().concat("5"));

if(e.getSource()==b6)

t.setText(t.getText().concat("6"));

if(e.getSource()==b7)

t.setText(t.getText().concat("7"));

if(e.getSource()==b8)

t.setText(t.getText().concat("8"));

if(e.getSource()==b9)

t.setText(t.getText().concat("9"));

if(e.getSource()==b0)

t.setText(t.getText().concat("0"));

if(e.getSource()==bdec)

t.setText(t.getText().concat("."));

if(e.getSource()==badd)

{

a=Double.parseDouble(t.getText());

operator=1;

t.setText("");

}

if(e.getSource()==bsub)

{

a=Double.parseDouble(t.getText());

operator=2;

t.setText("");

}

if(e.getSource()==bmul)

{

a=Double.parseDouble(t.getText());

operator=3;

t.setText("");

}

if(e.getSource()==bdiv)

{

a=Double.parseDouble(t.getText());

operator=4;

t.setText("");

}

if(e.getSource()==beq)

{

b=Double.parseDouble(t.getText());

switch(operator)

{

case 1: result=a+b;

break;

case 2: result=a-b;

break;

case 3: result=a\*b;

break;

case 4: result=a/b;

break;

default: result=0;

}

t.setText(""+result);

}

if(e.getSource()==bclr)

t.setText("");

if(e.getSource()==bdel)

{

String s=t.getText();

t.setText("");

for(int i=0;i<s.length()-1;i++)

t.setText(t.getText()+s.charAt(i));

}

}

public static void main(String...s)

{

new Calc();

}

}

**OUTPUT:**

C:\Users\OOP-5>d:

D:\>cd abhishek

D:\abhishek>>javac calculator.java

D:\abhishek>>java Calc

