ASSIGNMENT 04

TO: MA’AM MADIHA

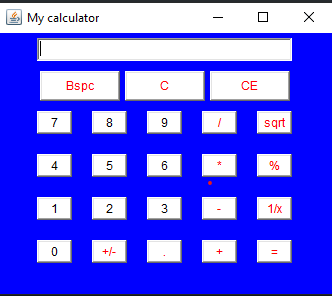
FASIH UR REHMAN MALIK

18-SE-86

***ASSIGNMENT 04:***

***JAVA AWT CALCULATOR:***

**IMAGE:**

****

**CODE:**

**package calculator;**

**import java.awt.\*;**

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

**import java.awt.event.WindowListener;**

**public class CALC implements ActionListener**

**{**

**int c,n;**

**String s1,s2,s3,s4,s5;//DECLARING INPUT AND OUTPUT STRINGS**

**Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16,b17,b18,b19,b20,b21,b22,b23;//DWCLARING BUTTONS**

**Panel pan;//DECLARING PANEL**

**TextField txtfl;//DECLARIING TEXTFIELD**

**GridLayout grid;//DECLARING GRID**

**double test;**

**CALC()**

**{**

**Frame frame = new Frame("My calculator");//CREATING FRAME**

**pan = new Panel();//PUTTING PANEL ON FRAME**

**frame.setLayout(new FlowLayout());//SETING FLOWLAYOUT FOR FRAME**

**frame.setBackground(Color.DARK\_Blue);**

**b1 = new Button("0");//CREATING SETING AND GIVING COLOR TO BUTTONS**

**b1.setForeground(Color.BLACK);**

**b1.setBackground(Color.WHITE);**

**b1.addActionListener(this);**

**b2 = new Button("1");**

**b2.setForeground(Color.BLACK);**

**b2.setBackground(Color.WHITE);**

**b2.addActionListener(this);**

**b3 = new Button("2");**

**b3.setForeground(Color.BLACK);**

**b3.setBackground(Color.WHITE);**

**b3.addActionListener(this);**

**b4 = new Button("3");**

**b4.setForeground(Color.BLACK);**

**b4.setBackground(Color.WHITE);**

**b4.addActionListener(this);**

**b5 = new Button("4");**

**b5.setForeground(Color.BLACK);**

**b5.setBackground(Color.WHITE);**

**b5.addActionListener(this);**

**b6 = new Button("5");**

**b6.setForeground(Color.BLACK);**

**b6.setBackground(Color.WHITE);**

**b6.addActionListener(this);**

**b7 = new Button("6");**

**b7.setForeground(Color.BLACK);**

**b7.setBackground(Color.WHITE);**

**b7.addActionListener(this);**

**b8 = new Button("7");**

**b8.setForeground(Color.BLACK);**

**b8.setBackground(Color.WHITE);**

**b8.addActionListener(this);**

**b9 = new Button("8");**

**b9.setForeground(Color.BLACK);**

**b9.setBackground(Color.WHITE);**

**b9.addActionListener(this);**

**b10 = new Button("9");**

**b10.setForeground(Color.BLACK);**

**b10.setBackground(Color.WHITE);**

**b10.addActionListener(this);**

**b11 = new Button("+");**

**b11.setForeground(Color.RED);**

**b11.setBackground(Color.WHITE);**

**b11.addActionListener(this);**

**b12 = new Button("-");**

**b12.setForeground(Color.RED);**

**b12.setBackground(Color.WHITE);**

**b12.addActionListener(this);**

**b13 = new Button("\*");**

**b13.setForeground(Color.RED);**

**b13.setBackground(Color.WHITE);**

**b13.addActionListener(this);**

**b14 = new Button("/");**

**b14.setForeground(Color.RED);**

**b14.setBackground(Color.WHITE);**

**b14.addActionListener(this);**

**b15 = new Button("%");**

**b15.setForeground(Color.RED);**

**b15.setBackground(Color.WHITE);**

**b15.addActionListener(this);**

**b16 = new Button("=");**

**b16.setForeground(Color.RED);**

**b16.setBackground(Color.WHITE);**

**b16.addActionListener(this);**

**b17 = new Button("CE");**

**b17.setForeground(Color.RED);**

**b17.setBackground(Color.WHITE);**

**b17.addActionListener(this);**

**b18 = new Button("sqrt");**

**b18.setForeground(Color.RED);**

**b18.setBackground(Color.WHITE);**

**b18.addActionListener(this);**

**b19 = new Button("1/x");**

**b19.setForeground(Color.RED);**

**b19.setBackground(Color.WHITE);**

**b19.addActionListener(this);**

**b20 = new Button("+/-");**

**b20.setForeground(Color.RED);**

**b20.setBackground(Color.WHITE);**

**b20.addActionListener(this);**

**b21 = new Button(".");**

**b21.setForeground(Color.RED);**

**b21.setBackground(Color.WHITE);**

**b21.addActionListener(this);**

**b22 = new Button("Bspc");**

**b22.setForeground(Color.RED);**

**b22.setBackground(Color.WHITE);**

**b22.addActionListener(this);**

**b23 = new Button("C");**

**b23.setForeground(Color.RED);**

**b23.setBackground(Color.WHITE);**

**b23.addActionListener(this);**

**txtfl = new TextField(33);//CREATING TEXT FIELD**

**frame.add(txtfl);//PUTTING TEXT FIELD ON FRAME**

**Panel firstPanel = new Panel();//CREATING A PANEL FOR IRREGULAR BUTTONS**

**b17.setPreferredSize(new Dimension(80, 30));//SETTING SIZE OF IRREGULAR BUTTONS**

**b22.setPreferredSize(new Dimension(80, 30));**

**b23.setPreferredSize(new Dimension(80, 30));**

**firstPanel.add(b22);**

**firstPanel.add(b23);**

**firstPanel.add(b17);//ADDING BUTTONS TO PANEL**

**frame.add(firstPanel);//ADDING BFIRST PANEL TO FRAME**

**grid = new GridLayout(4,40,20,20);//SETTING GRID SIZE**

**pan.setLayout(grid);//SETING GRID ON PANEL**

**txtfl.setBackground(Color.white);//SETTING TEXT FIELD COLOR**

**pan.add(b8);**

**pan.add(b9);**

**pan.add(b10);**

**pan.add(b14);**

**pan.add(b18);**

**pan.add(b5);**

**pan.add(b6);**

**pan.add(b7);**

**pan.add(b13);**

**pan.add(b15);**

**pan.add(b2);**

**pan.add(b3);**

**pan.add(b4);**

**pan.add(b12);**

**pan.add(b19);**

**pan.add(b1);**

**pan.add(b20);**

**pan.add(b21);**

**pan.add(b11);**

**pan.add(b16);//ADDING BUTTONS TO PANEL**

**frame.add(pan);//ADDING PANEL TO FRAME**

**frame.setSize(350,300);//SETTING FRAME SIZE**

**frame.setVisible(true);//SETTING VISIBILITY**

**frame.addWindowListener(new WindowAdapter() {//EVENT TO CLOSE WINDOW**

**@Override**

**public void windowClosing(WindowEvent e)**

**{**

**System.exit(0);**

**}**

**});**

**}**

**public void actionPerformed(ActionEvent e)//HANDLING BUTTONS CLICKED**

**{**

**if(e.getSource()==b1)**

**{**

**s3 = txtfl.getText();**

**s4 = "0";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b2)**

**{**

**s3 = txtfl.getText();**

**s4 = "1";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b3)**

**{**

**s3 = txtfl.getText();**

**s4 = "2";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}if(e.getSource()==b4)**

**{**

**s3 = txtfl.getText();**

**s4 = "3";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b5)**

**{**

**s3 = txtfl.getText();**

**s4 = "4";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b6)**

**{**

**s3 = txtfl.getText();**

**s4 = "5";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b7)**

**{**

**s3 = txtfl.getText();**

**s4 = "6";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b8)**

**{**

**s3 = txtfl.getText();**

**s4 = "7";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b9)**

**{**

**s3 = txtfl.getText();**

**s4 = "8";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b10)**

**{**

**s3 = txtfl.getText();**

**s4 = "9";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b11)**

**{**

**s1 = txtfl.getText();**

**txtfl.setText("");**

**c=1;**

**}**

**if(e.getSource()==b12)**

**{**

**s1 = txtfl.getText();**

**txtfl.setText("");**

**c=2;**

**}**

**if(e.getSource()==b13)**

**{**

**s1 = txtfl.getText();**

**txtfl.setText("");**

**c=3;**

**}**

**if(e.getSource()==b14)**

**{**

**s1 = txtfl.getText();**

**txtfl.setText("");**

**c=4;**

**}**

**if(e.getSource()==b15)**

**{**

**s1 = txtfl.getText();**

**txtfl.setText("");**

**c=5;**

**}**

**if(e.getSource()==b18)**

**{**

**s1 = txtfl.getText();**

**txtfl.setText("");**

**c=6;**

**}**

**if(e.getSource()==b19)**

**{**

**s1 = txtfl.getText();**

**txtfl.setText("");**

**c=7;**

**}**

**if(e.getSource()==b21)**

**{**

**s3 = txtfl.getText();**

**s4 = ".";**

**s5 = s3+s4;**

**txtfl.setText(s5);**

**}**

**if(e.getSource()==b22)**

**{**

**s3 = txtfl.getText();**

**txtfl.setText(txtfl.getText().substring(0, txtfl.getText().length() - 1));**

**}**

**if(e.getSource()==b23)**

**{**

**s3 = "0";**

**s4 = "0";**

**txtfl.setText(s3);**

**}**

**if(e.getSource()==b16)//DECIMAL VALUES**

**{**

**s2 = txtfl.getText();**

**if(c==1)**

**{**

**if(s1.contains(".") || s2.contains("."))**

**{**

**test= Double.parseDouble(s1) + Double.parseDouble(s2);**

**txtfl.setText(String.valueOf(test));**

**}**

**else**

**{**

**n = Integer.parseInt(s1)+Integer.parseInt(s2);**

**txtfl.setText(String.valueOf(n));**

**}**

**}**

**else**

**if(c==2)**

**{**

**if(s1.contains(".") || s2.contains("."))**

**{**

**test= Double.parseDouble(s1) - Double.parseDouble(s2);**

**txtfl.setText(String.valueOf(test));**

**}**

**else**

**{**

**n = Integer.parseInt(s1)-Integer.parseInt(s2);**

**txtfl.setText(String.valueOf(n));**

**}**

**}**

**else**

**if(c==3)**

**{**

**if(s1.contains(".") || s2.contains("."))**

**{**

**test= Double.parseDouble(s1) \* Double.parseDouble(s2);**

**txtfl.setText(String.valueOf(test));**

**}**

**else**

**{**

**n = Integer.parseInt(s1)\*Integer.parseInt(s2);**

**txtfl.setText(String.valueOf(n));**

**}**

**}**

**if(c==4)**

**{**

**try//DEALING WITH DIVIDED BY ZERO EXCEPTION**

**{**

**int p=Integer.parseInt(s2);**

**if(p!=0)**

**{**

**if(s1.contains(".") || s2.contains("."))**

**{**

**test= Double.parseDouble(s1) / Double.parseDouble(s2);**

**txtfl.setText(String.valueOf(test));**

**}**

**else**

**{**

**n = Integer.parseInt(s1)/Integer.parseInt(s2);**

**txtfl.setText(String.valueOf(n));**

**}**

**}**

**else**

**txtfl.setText("infinite");**

**}**

**catch(Exception i){}**

**}**

**if(c==5)**

**{**

**if(s1.contains(".") || s2.contains("."))**

**{**

**test= Double.parseDouble(s1) % Double.parseDouble(s2);**

**txtfl.setText(String.valueOf(test));**

**}**

**else**

**{**

**n = Integer.parseInt(s1)%Integer.parseInt(s2);**

**txtfl.setText(String.valueOf(n));**

**}**

**}**

**else**

**if(c==6)**

**{**

**if(s1.contains("."))**

**{**

**test= Double.parseDouble(s1) \* Double.parseDouble(s1);**

**txtfl.setText(String.valueOf(test));**

**}**

**else**

**{**

**test= Double.parseDouble(s1) \* Double.parseDouble(s1);**

**txtfl.setText(String.valueOf(test));**

**}**

**}**

**else**

**if(c==7)**

**{**

**try**

**{**

**int p=Integer.parseInt(s1);**

**if(p!=0)**

**{**

**double n1 = 1/(double)Integer.parseInt(s1);**

**txtfl.setText(String.valueOf(n1));**

**}**

**else**

**txtfl.setText("infinite");**

**}**

**catch(Exception i){}**

**}**

**}**

**if(e.getSource()==b17)**

**{**

**txtfl.setText("");**

**}**

**}**

**public static void main(String[] abc)**

**{**

**CALC mathCal = new CALC();//making an object of class calculator**

**}**

**}**