Name: Somnath R. Shintre Roll No:

Class: TE CSE Batch:

**Title: - Develop** a Swing GUI based standard calculator program. Use event handling, Layout of swing package.

**Program: -**

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.\*;

public class NewCalculator extends JFrame {

// Instance variables

private JButton button1;

private JButton button2;

private JButton button3;

private JButton button4;

private JButton button5;

private JButton button6;

private JButton button7;

private JButton button8;

private JButton button9;

private JButton button0;

private JButton buttonS;

private JButton buttonE;

private JButton buttonP;

private JButton buttonM;

private JButton buttonMu;

private JButton buttonDi;

private JTextField jTextField1;

private JTextField jTextField2;

String query = "";

String enter = "";

int result = 0;

// Constructor

public NewCalculator(){

button1 = new JButton("1");

button2 = new JButton("2");

button3 = new JButton("3");

button4 = new JButton("4");

button5 = new JButton("5");

button6 = new JButton("6");

button7 = new JButton("7");

button8 = new JButton("8");

button9 = new JButton("9");

button0 = new JButton("0");

buttonS = new JButton("CE");

buttonE = new JButton("=");

buttonP = new JButton("+");

buttonM = new JButton("-");

buttonMu = new JButton("X");

buttonDi = new JButton("/");

jTextField1 = new JTextField(7);

jTextField2 = new JTextField(25);

// add textfield to frame

add(jTextField2);

add(jTextField1);

// add buttons to frame

add(button7);

add(button8);

add(button9);

add(buttonDi);

add(button4);

add(button5);

add(button6);

add(buttonMu);

add(button3);

add(button2);

add(button1);

add(buttonM);

add(buttonS);

add(button0);

add(buttonE);

add(buttonP);

// set properties for textfiedl

jTextField2.setFont(new Font("MV Boli", 0, 18));

jTextField2.setHorizontalAlignment(JTextField.RIGHT);

jTextField2.setBorder(null);

jTextField2.setOpaque(false);

jTextField2.setEditable(false);

jTextField1.setFont(new Font("MS Reference Sans Serif", 0, 60));

jTextField1.setHorizontalAlignment(JTextField.RIGHT);

jTextField1.setText("0");

jTextField1.setBorder(null);

jTextField1.setOpaque(false);

// set dimensions to duttons

Dimension D = new Dimension(94,50);

button7.setPreferredSize(D);

button8.setPreferredSize(D);

button9.setPreferredSize(D);

buttonDi.setPreferredSize(D);

button4.setPreferredSize(D);

button5.setPreferredSize(D);

button6.setPreferredSize(D);

buttonMu.setPreferredSize(D);

button1.setPreferredSize(D);

button2.setPreferredSize(D);

button3.setPreferredSize(D);

buttonM.setPreferredSize(D);

buttonS.setPreferredSize(D);

button0.setPreferredSize(D);

buttonE.setPreferredSize(D);

buttonP.setPreferredSize(D);

// add ActionListener to each button

buttonS.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

query = "";

enter = "";

result = 0;

jTextField1.setText("0");

jTextField2.setText(query);

}

});

button0.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "0";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "0";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

buttonE.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if( result == 0){

query = "";

jTextField2.setText(query);

} else if(result == Integer.parseInt(jTextField1.getText())){

query = "";

jTextField2.setText(query);

jTextField1.setText(String.valueOf(result));

result = 0;

} else if (result != Integer.parseInt(jTextField1.getText())){

char O = query.charAt(query.length() -1);

if( O == '+'){

result = result + Integer.parseInt(jTextField1.getText());

} else if( 0 == '-'){

result = result - Integer.parseInt(jTextField1.getText());

} else if(0 == 'X'){

result = result \* Integer.parseInt(jTextField1.getText());

} else if(0 == '/'){

result = result / Integer.parseInt(jTextField1.getText());

}

query = "";

jTextField2.setText(query);

jTextField1.setText(String.valueOf(result));

result = 0;

}

}

});

buttonP.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(query)){

String s = jTextField1.getText();

enter = "";

query = s + "+";

jTextField2.setText(query);

result += Integer.parseInt(s);

jTextField1.setText(String.valueOf(result));

} else {

String s = jTextField1.getText();

enter = "";

query += s + "+";

jTextField2.setText(query);

result += Integer.parseInt(s);

jTextField1.setText(String.valueOf(result));

}

}

});

button1.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "1";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "1";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

button2.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "2";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "2";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

button3.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "3";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "3";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

buttonM.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(query)){

String s = jTextField1.getText();

enter = "";

query = s + "-";

jTextField2.setText(query);

result = Integer.parseInt(s);

jTextField1.setText(s);

} else {

String s = jTextField1.getText();

enter = "";

query += s + "-";

jTextField2.setText(query);

result -= Integer.parseInt(s);

jTextField1.setText(String.valueOf(result));

}

}

});

button4.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "4";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "4";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

button5.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "5";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "5";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

button6.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "6";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "6";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

buttonMu.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(query)){

String s = jTextField1.getText();

enter = "";

query = s + "X";

jTextField2.setText(query);

result = Integer.parseInt(s);

jTextField1.setText(String.valueOf(result));

} else {

String s = jTextField1.getText();

enter = "";

query = s + "X";

jTextField2.setText(query);

result \*= Integer.parseInt(s);

jTextField1.setText(String.valueOf(result));

}

}

});

button7.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "7";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "7";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

button8.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "8";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "8";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

button9.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(enter)){

enter = "9";

jTextField1.setText(enter);

} else {

String s = jTextField1.getText();

enter = s + "9";

jTextField1.setText("");

jTextField1.setText(enter);

}

}

});

buttonDi.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent evt) {

if("".equals(query)){

String s = jTextField1.getText();

enter = "";

query = s + "/";

jTextField2.setText(query);

result = Integer.parseInt(s);

jTextField1.setText(String.valueOf(result));

} else {

String s = jTextField1.getText();

enter = "";

query += s + "/";

jTextField2.setText(query);

result /= Integer.parseInt(s);

jTextField1.setText(String.valueOf(result));

}

}

});

// set properties for frame

setBackground(new java.awt.Color(51, 51, 51));

setTitle("Caculator");

setLayout(new FlowLayout());

setSize(424,400);

setVisible(true);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

}

public static void main(String[] args) {

new NewCalculator();

}

}

**Output: -**





