**package MiniProject;**

**import java.awt.Color;**

**import java.awt.event.ActionEvent;**

**import java.awt.event.ActionListener;**

**import javax.swing.JButton;**

**import javax.swing.JFrame;**

**import javax.swing.JPanel;**

**import javax.swing.JTextField;**

**import javax.swing.UIManager;**

**public class CalculatorSwing extends JFrame implements ActionListener {**

**// create a frame**

**static JFrame frameToDisplay;**

**// create a textfield**

**static JTextField labeTextField;**

**// it store the operands and operators**

**String string0, string1, string2;**

**// constructor**

**CalculatorSwing() {**

**string0 = string1 = string2 = "";**

**}**

**// main function to java application**

**public static void main(String args[]) {**

**// create the frame to display the screen**

**frameToDisplay = new JFrame("My Calculator");**

**try {**

**// used to set the look and feel for the application**

**UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());**

**} catch (Exception exception) {**

**System.err.println(exception.getMessage());**

**}**

**// create the class object**

**CalculatorSwing calculatorSwing = new CalculatorSwing();**

**// create text field**

**labeTextField = new JTextField(16);**

**// set to the non editable**

**labeTextField.setEditable(false);**

**// declaring numbers buttons and operators buttons**

**JButton button\_0, button\_1, button\_2, button\_3, button\_4, button\_5, button\_6, button\_7, button\_8, button\_9,**

**button\_add, button\_subtract, button\_div, button\_mul, button\_dot, button\_equal1, button\_equal2;**

**// creating numbers buttons**

**button\_0 = new JButton("0");**

**button\_1 = new JButton("1");**

**button\_2 = new JButton("2");**

**button\_3 = new JButton("3");**

**button\_4 = new JButton("4");**

**button\_5 = new JButton("5");**

**button\_6 = new JButton("6");**

**button\_7 = new JButton("7");**

**button\_8 = new JButton("8");**

**button\_9 = new JButton("9");**

**// creating equals buttons**

**button\_equal2 = new JButton("=");**

**// creating operators like +,-,\*,/ buttons**

**button\_add = new JButton("+");**

**button\_subtract = new JButton("-");**

**button\_div = new JButton("/");**

**button\_mul = new JButton("\*");**

**button\_equal1 = new JButton("C");**

**// creating dot(.) buttons**

**button\_dot = new JButton(".");**

**// creating panel**

**JPanel jPanel = new JPanel();**

**// adding action listeners to the buttons**

**button\_mul.addActionListener(calculatorSwing);**

**button\_div.addActionListener(calculatorSwing);**

**button\_subtract.addActionListener(calculatorSwing);**

**button\_add.addActionListener(calculatorSwing);**

**button\_9.addActionListener(calculatorSwing);**

**button\_8.addActionListener(calculatorSwing);**

**button\_7.addActionListener(calculatorSwing);**

**button\_6.addActionListener(calculatorSwing);**

**button\_5.addActionListener(calculatorSwing);**

**button\_4.addActionListener(calculatorSwing);**

**button\_3.addActionListener(calculatorSwing);**

**button\_2.addActionListener(calculatorSwing);**

**button\_1.addActionListener(calculatorSwing);**

**button\_0.addActionListener(calculatorSwing);**

**button\_dot.addActionListener(calculatorSwing);**

**button\_equal1.addActionListener(calculatorSwing);**

**button\_equal2.addActionListener(calculatorSwing);**

**// add all elements to the panel**

**jPanel.add(labeTextField);**

**jPanel.add(button\_add);**

**jPanel.add(button\_1);**

**jPanel.add(button\_2);**

**jPanel.add(button\_3);**

**jPanel.add(button\_subtract);**

**jPanel.add(button\_4);**

**jPanel.add(button\_5);**

**jPanel.add(button\_6);**

**jPanel.add(button\_mul);**

**jPanel.add(button\_7);**

**jPanel.add(button\_8);**

**jPanel.add(button\_9);**

**jPanel.add(button\_div);**

**jPanel.add(button\_dot);**

**jPanel.add(button\_0);**

**jPanel.add(button\_equal1);**

**jPanel.add(button\_equal2);**

**// set background of the panel**

**jPanel.setBackground(Color.darkGray);**

**// add the panel to the frame**

**frameToDisplay.add(jPanel);**

**frameToDisplay.setSize(210, 230);**

**frameToDisplay.show();**

**}**

**//action listener implementation**

**public void actionPerformed(ActionEvent e) {**

**String input = e.getActionCommand();**

**// check if the given value is number**

**if ((input.charAt(0) >= '0' && input.charAt(0) <= '9') || input.charAt(0) == ' ') {**

**// if operand is present then add to second no**

**if (!string1.equals(""))**

**string2 = string2 + input;**

**else**

**string0 = string0 + input;**

**// set the value to the text**

**labeTextField.setText(string0 + string1 + string2);**

**} else if (input.charAt(0) == 'C') {**

**// clearing**

**string0 = string1 = string2 = "";**

**// set the value of the text**

**labeTextField.setText(string0 + string1 + string2);**

**} else if (input.charAt(0) == '=') {**

**double equalsInput;**

**// store the value in the first index**

**if (string1.equals("+"))**

**equalsInput = (Double.parseDouble(string0) + Double.parseDouble(string2));**

**else if (string1.equals("-"))**

**equalsInput = (Double.parseDouble(string0) - Double.parseDouble(string2));**

**else if (string1.equals("/"))**

**equalsInput = (Double.parseDouble(string0) / Double.parseDouble(string2));**

**else**

**equalsInput = (Double.parseDouble(string0) \* Double.parseDouble(string2));**

**// set the value of the text**

**labeTextField.setText(string0 + string1 + string2 + "=" + equalsInput);**

**// converting int to string**

**string0 = Double.toString(equalsInput);**

**string1 = string2 = "";**

**} else {**

**// if no operand is there**

**if (string1.equals("") || string2.equals(""))**

**string1 = input;**

**else {**

**double te;**

**// store the value in the first index**

**if (string1.equals("+"))**

**te = (Double.parseDouble(string0) + Double.parseDouble(string2));**

**else if (string1.equals("-"))**

**te = (Double.parseDouble(string0) - Double.parseDouble(string2));**

**else if (string1.equals("/"))**

**te = (Double.parseDouble(string0) / Double.parseDouble(string2));**

**else**

**te = (Double.parseDouble(string0) \* Double.parseDouble(string2));**

**// converting int to string**

**string0 = Double.toString(te);**

**// put the operator**

**string1 = input;**

**// take the operand as blank**

**string2 = "";**

**}**

**// set the value of the text**

**labeTextField.setText(string0 + string1 + string2);**

**}**

**}**

**}**