**PROJECT – 3**

**PROJECT NAME :**  **SIMPLE CALCULATOR**

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**PROJECT SUMMARY :**

Calculator in Java is used to calculate addition, subtraction, multiplication, division, modulus, power of numbers, etc.. Calculator in java can be developed with the help of AWT/swing with event handling. A basic calculator is able to add, subtract, multiply or divide two numbers. This is done using a switch case.

By Using Switch Case,there are 3 steps to follow to create or develop simple calculator:

Step 1: User enters the character for which operation wants to perform like “+”, “-”, “\*”, “/”, “%”, “^” etc..

Step 2: Within the switch case, we have implemented logic for each character.

Step 3: Based on character operation performed like addition, subtraction, multiplication, division, modulus (finds remainder) and power of the number.

These statements compute the product of two numbers and print the output. Finally, the break statement ends the switch statement.Similarly, for different operators, different cases are executed.

**INPUT :**

**package sourcecode;**

**import javax.swing.\*;**

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

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

**public class CALCI implements ActionListener{**

**JFrame frame;**

**JTextField textfield;**

**JButton[] numberButtons = new JButton[10];**

**JButton[] functionButtons = new JButton[9];**

**JButton addButton,subButton,mulButton,divButton;**

**JButton decButton, equButton, delButton, clrButton, negButton;**

**JPanel panel;**

**Font myFont = new Font("Calbiri",Font.BOLD,50);**

**double num1=0,num2=0,result=0;**

**char operator;**

**CALCI(){**

**frame = new JFrame("Calculator");**

**frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);**

**frame.setSize(420, 550);**

**frame.setLayout(null);**

**textfield = new JTextField();**

**textfield.setBounds(50, 25, 300, 50);**

**textfield.setFont(myFont);**

**textfield.setEditable(false);**

**addButton = new JButton("+");**

**subButton = new JButton("-");**

**mulButton = new JButton("\*");**

**divButton = new JButton("/");**

**decButton = new JButton(".");**

**equButton = new JButton("=");**

**delButton = new JButton("Del");**

**clrButton = new JButton("Clr");**

**negButton = new JButton("(-)");**

**functionButtons[0] = addButton;**

**functionButtons[1] = subButton;**

**functionButtons[2] = mulButton;**

**functionButtons[3] = divButton;**

**functionButtons[4] = decButton;**

**functionButtons[5] = equButton;**

**functionButtons[6] = delButton;**

**functionButtons[7] = clrButton;**

**functionButtons[8] = negButton;**

**for(int i =0;i<9;i++) {**

**functionButtons[i].addActionListener(this);**

**functionButtons[i].setFont(myFont);**

**functionButtons[i].setFocusable(false);**

**}**

**for(int i =0;i<10;i++) {**

**numberButtons[i] = new JButton(String.valueOf(i));**

**numberButtons[i].addActionListener(this);**

**numberButtons[i].setFont(myFont);**

**numberButtons[i].setFocusable(false);**

**}**

**negButton.setBounds(50,430,100,50);**

**delButton.setBounds(150,430,100,50);**

**clrButton.setBounds(250,430,100,50);**

**panel = new JPanel();**

**panel.setBounds(50, 100, 300, 300);**

**panel.setLayout(new GridLayout(4,4,10,10));**

**panel.add(numberButtons[1]);**

**panel.add(numberButtons[2]);**

**panel.add(numberButtons[3]);**

**panel.add(addButton);**

**panel.add(numberButtons[4]);**

**panel.add(numberButtons[5]);**

**panel.add(numberButtons[6]);**

**panel.add(subButton);**

**panel.add(numberButtons[7]);**

**panel.add(numberButtons[8]);**

**panel.add(numberButtons[9]);**

**panel.add(mulButton);**

**panel.add(decButton);**

**panel.add(numberButtons[0]);**

**panel.add(equButton);**

**panel.add(divButton);**

**frame.add(panel);**

**frame.add(negButton);**

**frame.add(delButton);**

**frame.add(clrButton);**

**frame.add(textfield);**

**frame.setVisible(true);**

**}**

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

**CALCI calc = new CALCI();**

**}**

**@Override**

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

**for(int i=0;i<10;i++) {**

**if(e.getSource() == numberButtons[i]) {**

**textfield.setText(textfield.getText().concat(String.valueOf(i)));**

**}**

**}**

**if(e.getSource()==decButton) {**

**textfield.setText(textfield.getText().concat("."));**

**}**

**if(e.getSource()==addButton) {**

**num1 = Double.parseDouble(textfield.getText());**

**operator ='+';**

**textfield.setText("");**

**}**

**if(e.getSource()==subButton) {**

**num1 = Double.parseDouble(textfield.getText());**

**operator ='-';**

**textfield.setText("");**

**}**

**if(e.getSource()==mulButton) {**

**num1 = Double.parseDouble(textfield.getText());**

**operator ='\*';**

**textfield.setText("");**

**}**

**if(e.getSource()==divButton) {**

**num1 = Double.parseDouble(textfield.getText());**

**operator ='/';**

**textfield.setText("");**

**}**

**if(e.getSource()==equButton) {**

**num2=Double.parseDouble(textfield.getText());**

**switch(operator) {**

**case'+':**

**result=num1+num2;**

**break;**

**case'-':**

**result=num1-num2;**

**break;**

**case'\*':**

**result=num1\*num2;**

**break;**

**case'/':**

**result=num1/num2;**

**break;**

**}**

**textfield.setText(String.valueOf(result));**

**num1=result;**

**}**

**if(e.getSource()==clrButton) {**

**textfield.setText("");**

**}**

**if(e.getSource()==delButton) {**

**String string = textfield.getText();**

**textfield.setText("");**

**for(int i=0;i<string.length()-1;i++) {**

**textfield.setText(textfield.getText()+string.charAt(i));**

**}**

**}**

**if(e.getSource()==negButton) {**

**double temp = Double.parseDouble(textfield.getText());**

**temp\*=-1;**

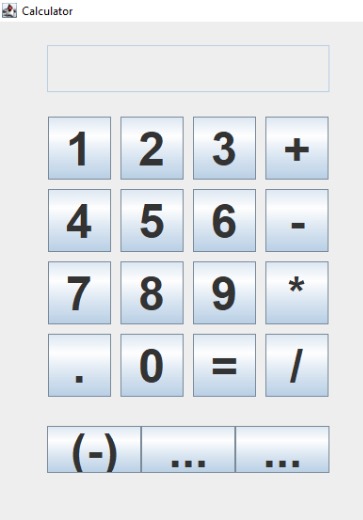
**textfield.setText(String.valueOf(temp));**

**}**

**}**

**}**

**OUTPUT :**

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Project by D.Ankitha