



TRABAJO: AUTÓNOMO

COLABORATIVO

TEMA: Calculadora Científica usando NeatBeans

ASIGNATURA: Programación Orientada a Objetos

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Nivel: 3 Semestre

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Calificación:

Fecha: 06/11/2023

Crear una Calculadora Científica en base al código empleado en clase:

Clase Logica:

```
7 private boolean resetDisplay;
8
9 public CalculadoraLogica() {
10     result = 0;
11     lastInput = 0;
12     currentOperation = "";
13     resetDisplay = false;
14 }
15
16 public String calculos(double input) {
17     lastInput = input;
18     switch (currentOperation) {
19         case "+":
20             result += lastInput;
21             break;
22         case "-":
23             result -= lastInput;
24             break;
25         case "x":
26             result *= lastInput;
27             break;
28         case "/":
29             if (lastInput != 0) {
30                 result /= lastInput;
31             } else {
32                 return "Error: No se puede dividir entre 0";
33             }
34             break;
35         case "sin":
36             result = Math.sin(Math.toRadians(lastInput));
37             break;
38         case "cos":
39             result = Math.cos(Math.toRadians(lastInput));
40             break;
41         case "tan":
42             result = Math.tan(Math.toRadians(lastInput));
43             break;
44         case "sqrt":
45             if (lastInput >= 0) {
46                 result = Math.sqrt(lastInput);
47             } else {
48                 return "Error: No se puede calcular la raíz cuadrada de un número negativo";
49             }
50             break;
51     }
52     return String.valueOf(result);
53 }
```





Clase Calculadora Guia:

```
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Source
4 import java.awt.*;
5 import java.awt.event.ActionEvent;
6 import java.awt.event.ActionListener;
7
8 public class CalculadoraGUI extends JFrame {
9     private JTextField display;
10    private CalculadoraLogica calculadora;
11    private String currentInput;
12
13    public CalculadoraGUI() {
14        calculadora = new CalculadoraLogica();
15        currentInput = "";
16
17        // Configuración de la ventana
18        setTitle("Calculadora");
19        setSize(400, 500);
20        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
21        setLayout(new BorderLayout());
22
23        // Pantalla de visualización
24        display = new JTextField();
25        display.setFont(new Font("Times New Roman", Font.BOLD, 24));
26        display.setHorizontalAlignment(SwingConstants.RIGHT);
27        display.setEnabled(false);
28        add(display, BorderLayout.NORTH);
29
30        JPanel buttonPanel = new JPanel();
31        buttonPanel.setLayout(new GridLayout(5, 4));
32
33        // Botones
34        String[] buttons = {
35            "7", "8", "9", "/",
36            "4", "5", "6", "*",
37            "1", "2", "3", "-",
38            "sin", "cos", "tan", "+",
39            "sqrt", "C", "CE", "="
40        };
41    }
```

```
49    }
50
51    private class ButtonClickListener implements ActionListener {
52        @Override
53        public void actionPerformed(ActionEvent e) {
54            String command = e.getActionCommand();
55            if (command.equals("C")) {
56                currentInput = "";
57                calculadora.reset();
58                display.setText("");
59            } else if (command.equals("=")) {
60                try {
61                    double input = currentInput.isEmpty() ? 0 : Double.parseDouble(currentInput);
62                    String result = calculadora.calcular(input);
63                    display.setText(result);
64                    currentInput = "";
65                } catch (NumberFormatException ex) {
66                    display.setText("Error");
67                }
68            } else if (command.equals("+") || command.equals("-") || command.equals("%") || command.equals("/") ||
69                command.equals("sin") || command.equals("cos") || command.equals("tan") || command.equals("sqrt") || command.equals("C") || command.equals("CE") || command.equals("=")) {
70                try {
71                    double input = currentInput.isEmpty() ? 0 : Double.parseDouble(currentInput);
72                    calculadora.calcular(input);
73                    calculadora.setOperator(command);
74                    display.setText("");
75                    currentInput = "";
76                } catch (NumberFormatException ex) {
77                    display.setText("Error");
78                }
79            } else {
80                if (calculadora.ResetDisplay()) {
81                    calculadora.setResetDisplay(false);
82                }
83                currentInput += command;
84                display.setText(currentInput);
85            }
86        }
87    }
```





Clase Main

```
Source History
package CalculadoraGuia;

import javax.swing.SwingUtilities;

public class Main {
    public static void main(String[] args){
        SwingUtilities.invokeLater(()->{
            CalculadoraGUI calculator= new CalculadoraGUI();
            calculator.setVisible(true);
        });
    }
}
```





Resultados Obtenidos:



