// SimpleCalculator

//IntelliJ IDEA 2023.1

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

public class SimpleCalculator extends JFrame implements ActionListener {

private JTextField firstNumberField;

private JTextField secondNumberField;

private JTextField answerField;

private char operator;

public SimpleCalculator() {

setTitle("Simple Calculator");

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

setLayout(new BorderLayout());

// Panels

JPanel topPanel = new JPanel();

topPanel.setLayout(new GridLayout(3, 2, 10, 10));

JPanel centerPanel = new JPanel();

centerPanel.setLayout(new GridLayout(4, 4, 10, 10));

// Labels and Text Fields

JLabel firstNumberLabel = new JLabel("Enter first number:");

firstNumberField = new JTextField(10);

JLabel secondNumberLabel = new JLabel("Enter second number:");

secondNumberField = new JTextField(10);

JLabel answerLabel = new JLabel("Answer:");

answerField = new JTextField(10);

answerField.setEditable(false);

// Buttons

JButton addButton = new JButton("+");

JButton subtractButton = new JButton("-");

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

JButton divideButton = new JButton("/");

JButton clearButton = new JButton("Clear");

addButton.setFont(new Font("Arial", Font.PLAIN, 20));

subtractButton.setFont(new Font("Arial", Font.PLAIN, 20));

multiplyButton.setFont(new Font("Arial", Font.PLAIN, 20));

divideButton.setFont(new Font("Arial", Font.PLAIN, 20));

clearButton.setFont(new Font("Arial", Font.PLAIN, 20));

addButton.addActionListener(this);

subtractButton.addActionListener(this);

multiplyButton.addActionListener(this);

divideButton.addActionListener(this);

clearButton.addActionListener(this);

centerPanel.add(addButton);

centerPanel.add(subtractButton);

centerPanel.add(multiplyButton);

centerPanel.add(divideButton);

centerPanel.add(clearButton);

// Add components to panels

topPanel.add(firstNumberLabel);

topPanel.add(firstNumberField);

topPanel.add(secondNumberLabel);

topPanel.add(secondNumberField);

topPanel.add(answerLabel);

topPanel.add(answerField);

// Add panels to frame

add(topPanel, BorderLayout.NORTH);

add(centerPanel, BorderLayout.CENTER);

pack();

setLocationRelativeTo(null); // Center the frame on the screen

}

@Override

public void actionPerformed(ActionEvent e) {

String actionCommand = e.getActionCommand();

if (actionCommand.equals("+") || actionCommand.equals("-") || actionCommand.equals("\*") || actionCommand.equals("/")) {

operator = actionCommand.charAt(0);

calculate();

} else if (actionCommand.equals("Clear")) {

clear();

}

}

private void calculate() {

try {

double firstNumber = Double.parseDouble(firstNumberField.getText());

double secondNumber = Double.parseDouble(secondNumberField.getText());

double result = 0;

switch (operator) {

case '+':

result = firstNumber + secondNumber;

break;

case '-':

result = firstNumber - secondNumber;

break;

case '\*':

result = firstNumber \* secondNumber;

break;

case '/':

result = firstNumber / secondNumber;

break;

}

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

} catch (NumberFormatException e) {

answerField.setText("Error: Invalid input");

}

}

private void clear() {

firstNumberField.setText("");

secondNumberField.setText("");

answerField.setText("");

operator = ' ';

}

public static void main(String[] args) {

SwingUtilities.invokeLater(() -> {

SimpleCalculator calculator = new SimpleCalculator();

calculator.setVisible(true);

});

}

}