import javax.swing.\*;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

public class SwingCalculator extends JFrame implements ActionListener {

private JTextField textField;

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

private JButton addButton, subButton, mulButton, divButton, eqButton, clrButton;

private double num1, num2, result;

private char operator;

public SwingCalculator() {

setTitle("Calculator");

setSize(300, 400);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

setLayout(new BorderLayout());

textField = new JTextField();

textField.setEditable(false);

add(textField, BorderLayout.NORTH);

JPanel panel = new JPanel();

panel.setLayout(new GridLayout(4, 4, 5, 5));

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

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

numberButtons[i].addActionListener(this);

panel.add(numberButtons[i]);

}

addButton = new JButton("+");

subButton = new JButton("-");

mulButton = new JButton("\*");

divButton = new JButton("/");

eqButton = new JButton("=");

clrButton = new JButton("C");

JButton[] functionButtons = {addButton, subButton, mulButton, divButton, eqButton, clrButton};

for (JButton button : functionButtons) {

button.addActionListener(this);

panel.add(button);

}

add(panel, BorderLayout.CENTER);

setVisible(true);

}

@Override

public void actionPerformed(ActionEvent e) {

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

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

textField.setText(textField.getText() + i);

}

}

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

num1 = Double.parseDouble(textField.getText());

operator = '+';

textField.setText("");

} else if (e.getSource() == subButton) {

num1 = Double.parseDouble(textField.getText());

operator = '-';

textField.setText("");

} else if (e.getSource() == mulButton) {

num1 = Double.parseDouble(textField.getText());

operator = '\*';

textField.setText("");

} else if (e.getSource() == divButton) {

num1 = Double.parseDouble(textField.getText());

operator = '/';

textField.setText("");

} else if (e.getSource() == eqButton) {

num2 = Double.parseDouble(textField.getText());

switch (operator) {

case '+': result = num1 + num2; break;

case '-': result = num1 - num2; break;

case '\*': result = num1 \* num2; break;

case '/':

if (num2 != 0) {

result = num1 / num2;

} else {

textField.setText("Error");

return;

}

break;

}

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

} else if (e.getSource() == clrButton) {

textField.setText("");

}

}

public static void main(String[] args) {

new SwingCalculator();

}

}