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package com.example.wk6assignment;

import javax.swing.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JOptionPane;

public class InterestCalculator {
    private JTextField txtPrincipal;
    private JTextField txtRate;
    private JTextField txtTime;
    private JRadioButton btnSimpleInterest;
    private JButton btnCalculate;
    private JLabel lblPrincipal;
    private JLabel lblRate;
    private JLabel lblTime;
    private JLabel lblInterestType;
    private JRadioButton btnCompoundInterest;
    private JLabel lblCalculate;
    private JPanel panel;
    private JTextField txtInterest;
    private JLabel lblInterest;

    public InterestCalculator() {

        // Calculate button action listener
        btnCalculate.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                try {
                    // Check if the values entered by the user are valid
                    double principal = Double.parseDouble(txtPrincipal.getText());
                    double rate = Double.parseDouble(txtRate.getText());
                    double time = Double.parseDouble(txtTime.getText());

                    // Calculate the interest
                    double interest;
                    if (btnSimpleInterest.isSelected()) {
                        interest = principal * rate * time / 100;
                    } else if (btnCompoundInterest.isSelected()) {
                        interest = principal * (Math.pow(1 + rate / 100, time) - 1);
                    } else {
                        // Throw an exception if the user has not selected a type of interest
                        throw new Exception("Invalid interest type");
                    }

                    // Check if the interest calculation failed
                    if (!Double.isNaN(interest)) {
                        // Format the interest to two decimal places
                        txtInterest.setText(String.format("%.2f", interest));
                    } else {
                        // Display a message to the user indicating that the interest calculation failed
                        JOptionPane.showMessageDialog(null, "Interest calculation failed", "Error",
                            JOptionPane.ERROR_MESSAGE);
                    }
                } catch (NumberFormatException exception) {
                    // Display a message to the user indicating that the value entered is invalid
                    JOptionPane.showMessageDialog(null, "Invalid input", "Error",
                        JOptionPane.ERROR_MESSAGE);
                } catch (Exception exception) {
                    // Display a message to the user indicating that the interest calculation failed
                    JOptionPane.showMessageDialog(null, "Interest calculation failed", "Error",

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        JOptionPane.ERROR_MESSAGE);
    }
}
});
//Setting the default radio button
btnSimpleInterest.setSelected(true);
}

//Main method
public static void main(String[] args) {
    JFrame frame = new JFrame("InterestCalculator");
    frame.setContentPane(new InterestCalculator().panel);
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    frame.pack();
    frame.setVisible(true);
}
}
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