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

public class SimpleExpertSystemGUI {

    public static void main(String[] args) {
        // Create the frame
        JFrame frame = new JFrame("Hospital Expert System");
        frame.setSize(400, 350);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        // Create components
        JLabel label = new JLabel("Welcome to the Hospital Expert System!");
        JTextArea textArea = new JTextArea();
        textArea.setEditable(false);
        JScrollPane scrollPane = new JScrollPane(textArea);

        // User inputs
        JTextField feverField = new JTextField();
        JTextField coughField = new JTextField();
        JTextField soreThroatField = new JTextField();
        JTextField chestPainField = new JTextField();
        JTextField jointPainField = new JTextField();

        // Submit Button
        JButton submitButton = new JButton("Submit");

        // Result display
        JLabel resultLabel = new JLabel("");

        // Layout setup
        frame.setLayout(new FlowLayout());
        frame.add(label);
        frame.add(new JLabel("Do you have fever? (yes/no:");
        frame.add(feverField);
        frame.add(new JLabel("Do you have cough? (yes/no:");
        frame.add(coughField);
        frame.add(new JLabel("Do you have sore throat? (yes/no:");
        frame.add(soreThroatField);
        frame.add(new JLabel("Do you have chest pain? (yes/no:");
        frame.add(chestPainField);
        frame.add(new JLabel("Do you have joint pain? (yes/no:");

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frame.add(jointPainField);
frame.add(submitButton);
frame.add(resultLabel);
frame.add(scrollPane);

// Action listener for submit button
submitButton.addActionListener(new ActionListener() {
    @Override
    public void actionPerformed(ActionEvent e) {
        String fever = feverField.getText();
        String cough = coughField.getText();
        String soreThroat = soreThroatField.getText();
        String chestPain = chestPainField.getText();
        String jointPain = jointPainField.getText();

        String result = getDiagnosis(fever, cough, soreThroat, chestPain, jointPain);
        resultLabel.setText(result);
        textArea.append("Diagnosis: " + result + "\n");
    }
});

// Set the frame visible
frame.setVisible(true);
}

// Logic to determine diagnosis
private static String getDiagnosis(String fever, String cough, String soreThroat, String
chestPain, String jointPain) {
    if (fever.equalsIgnoreCase("yes") && cough.equalsIgnoreCase("yes")) {
        return "You may have the flu.";
    } else if (fever.equalsIgnoreCase("yes") && soreThroat.equalsIgnoreCase("yes")) {
        return "You may have a throat infection.";
    } else if (chestPain.equalsIgnoreCase("yes")) {
        return "You may have a heart-related issue. Please see a doctor.";
    } else if (jointPain.equalsIgnoreCase("yes")) {
        return "You may have arthritis.";
    } else {
        return "Diagnosis unclear. Please consult a doctor.";
    }
}
}
}

```