import javax.swing.\*;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.util.ArrayList;

import java.util.HashMap;

public class DisasterManagementSystem extends JFrame {

// Modules

private HashMap<String, String> users = new HashMap<>(); // User Management

private ArrayList<String> events = new ArrayList<>(); // Real-Time Monitoring

// Constructor

public DisasterManagementSystem() {

// Main Frame Configuration

setTitle("Disaster Management System");

setSize(600, 500);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

setLayout(new BorderLayout());

// Tabs for Modules

JTabbedPane tabbedPane = new JTabbedPane();

// User Management Panel

JPanel userManagementPanel = createUserManagementPanel();

tabbedPane.addTab("User Management", userManagementPanel);

// Real-Time Monitoring Panel

JPanel monitoringPanel = createMonitoringPanel();

tabbedPane.addTab("Real-Time Monitoring", monitoringPanel);

// Alert & Notification Panel

JPanel alertPanel = createAlertPanel();

tabbedPane.addTab("Alerts & Notifications", alertPanel);

// Emergency Response Panel

JPanel responsePanel = createResponsePanel();

tabbedPane.addTab("Emergency Response", responsePanel);

add(tabbedPane, BorderLayout.CENTER);

}

// User Management Panel

private JPanel createUserManagementPanel() {

JPanel panel = new JPanel(new GridLayout(5, 2, 10, 10));

JLabel nameLabel = new JLabel("Username:");

JTextField nameField = new JTextField();

JLabel roleLabel = new JLabel("Role (Admin/Responder/Citizen):");

JTextField roleField = new JTextField();

JButton addUserButton = new JButton("Add User");

JTextArea userDisplayArea = new JTextArea(10, 30);

userDisplayArea.setEditable(false);

addUserButton.addActionListener(e -> {

String username = nameField.getText();

String role = roleField.getText();

if (!username.isEmpty() && !role.isEmpty()) {

users.put(username, role);

userDisplayArea.append("Added User: " + username + " (" + role + ")\n");

nameField.setText("");

roleField.setText("");

} else {

JOptionPane.showMessageDialog(this, "Please fill in all fields.", "Error", JOptionPane.ERROR\_MESSAGE);

}

});

panel.add(nameLabel);

panel.add(nameField);

panel.add(roleLabel);

panel.add(roleField);

panel.add(addUserButton);

panel.add(new JScrollPane(userDisplayArea));

return panel;

}

// Real-Time Monitoring Panel

private JPanel createMonitoringPanel() {

JPanel panel = new JPanel(new BorderLayout());

JLabel eventLabel = new JLabel("Add Event:");

JTextField eventField = new JTextField();

JButton addEventButton = new JButton("Add Event");

JTextArea eventDisplayArea = new JTextArea(10, 30);

eventDisplayArea.setEditable(false);

addEventButton.addActionListener(e -> {

String event = eventField.getText();

if (!event.isEmpty()) {

events.add(event);

eventDisplayArea.append("Event Added: " + event + "\n");

eventField.setText("");

} else {

JOptionPane.showMessageDialog(this, "Please enter an event.", "Error", JOptionPane.ERROR\_MESSAGE);

}

});

JPanel inputPanel = new JPanel(new BorderLayout());

inputPanel.add(eventLabel, BorderLayout.WEST);

inputPanel.add(eventField, BorderLayout.CENTER);

inputPanel.add(addEventButton, BorderLayout.EAST);

panel.add(inputPanel, BorderLayout.NORTH);

panel.add(new JScrollPane(eventDisplayArea), BorderLayout.CENTER);

return panel;

}

// Alert & Notification Panel

private JPanel createAlertPanel() {

JPanel panel = new JPanel(new GridLayout(3, 2, 10, 10));

JLabel alertLabel = new JLabel("Alert Message:");

JTextField alertField = new JTextField();

JButton sendAlertButton = new JButton("Send Alert");

JTextArea alertDisplayArea = new JTextArea(10, 30);

alertDisplayArea.setEditable(false);

sendAlertButton.addActionListener(e -> {

String alertMessage = alertField.getText();

if (!alertMessage.isEmpty()) {

alertDisplayArea.append("ALERT: " + alertMessage + "\n");

alertField.setText("");

} else {

JOptionPane.showMessageDialog(this, "Please enter an alert message.", "Error", JOptionPane.ERROR\_MESSAGE);

}

});

panel.add(alertLabel);

panel.add(alertField);

panel.add(sendAlertButton);

panel.add(new JScrollPane(alertDisplayArea));

return panel;

}

// Emergency Response Panel

private JPanel createResponsePanel() {

JPanel panel = new JPanel(new GridLayout(3, 2, 10, 10));

JLabel responderLabel = new JLabel("Responder Name:");

JTextField responderField = new JTextField();

JLabel taskLabel = new JLabel("Task Description:");

JTextField taskField = new JTextField();

JButton assignTaskButton = new JButton("Assign Task");

JTextArea taskDisplayArea = new JTextArea(10, 30);

taskDisplayArea.setEditable(false);

assignTaskButton.addActionListener(e -> {

String responder = responderField.getText();

String task = taskField.getText();

if (!responder.isEmpty() && !task.isEmpty()) {

taskDisplayArea.append("Assigned to " + responder + ": " + task + "\n");

responderField.setText("");

taskField.setText("");

} else {

JOptionPane.showMessageDialog(this, "Please fill in all fields.", "Error", JOptionPane.ERROR\_MESSAGE);

}

});

panel.add(responderLabel);

panel.add(responderField);

panel.add(taskLabel);

panel.add(taskField);

panel.add(assignTaskButton);

panel.add(new JScrollPane(taskDisplayArea));

return panel;

}

// Main Method

public static void main(String[] args) {

SwingUtilities.invokeLater(() -> {

DisasterManagementSystem system = new DisasterManagementSystem();

system.setVisible(true);

});

}

}