

```

import javax.swing.*;

import javax.swing.table.DefaultTableModel;

import java.awt.*;

import java.awt.event.*;

import java.sql.*;


public class GroceryManagementSystem extends JFrame {

    // JDBC Connection variables

    private Connection connection;

    private CardLayout cardLayout;

    private JPanel mainPanel;


    // Login Panel Components

    private JTextField usernameField;

    private JPasswordField passwordField;


    // Product Panel Components

    private JTextField nameField, mrpField, discountField, stockField, expiryField;

    private JTable productTable;


    public static void main(String[] args) {

        // Setup the frame

        GroceryManagementSystem frame = new GroceryManagementSystem();

        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        frame.setSize(800, 600);

        frame.setVisible(true);

    }


    public GroceryManagementSystem() {

        try {

            // Initialize JDBC connection

```

```
        connection = DriverManager.getConnection("jdbc:mysql://localhost:3306/grocerydb", "root",
"Sanjay1234%");
```

```
    // Setup CardLayout and main panel
```

```
    cardLayout = new CardLayout();
```

```
    mainPanel = new JPanel(cardLayout);
```

```
    add(mainPanel);
```

```
    // Add Login Panel
```

```
    mainPanel.add(createLoginPanel(), "Login");
```

```
    // Add Product Display Panel
```

```
    mainPanel.add(createProductDisplayPanel(), "ProductDisplay");
```

```
    // Add Add Product Panel
```

```
    mainPanel.add(createAddProductPanel(), "AddProduct");
```

```
    } catch (SQLException e) {
```

```
        e.printStackTrace();
```

```
        JOptionPane.showMessageDialog(this, "Database connection failed", "Error",
JOptionPane.ERROR_MESSAGE);
```

```
    }
```

```
}
```

```
// Login Panel
```

```
private JPanel createLoginPanel() {
```

```
    JPanel loginPanel = new JPanel();
```

```
    loginPanel.setLayout(new GridLayout(3, 2));
```

```
    // Username and Password fields
```

```
    loginPanel.add(new JLabel("Username:"));
```

```
    usernameField = new JTextField();
```

```
    loginPanel.add(usernameField);
```

```

loginPanel.add(new JLabel("Password:"));

passwordField = new JPasswordField();

loginPanel.add(passwordField);


// Login Button

JButton loginButton = new JButton("Login");

loginButton.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent e) {

        String username = usernameField.getText();

        String password = new String(passwordField.getPassword());


        // Simulate login check (you can replace this with actual authentication logic)
        if ("owner".equals(username) && "password".equals(password)) {

            cardLayout.show(mainPanel, "ProductDisplay");

        } else {

            JOptionPane.showMessageDialog(loginPanel, "Invalid credentials", "Error",
JOptionPane.ERROR_MESSAGE);

        }

    }

});


loginPanel.add(loginButton);

return loginPanel;

}


// Product Display Panel

private JPanel createProductDisplayPanel() {

    JPanel productDisplayPanel = new JPanel();

    productDisplayPanel.setLayout(new BorderLayout());

```

```

// Product Table

productTable = new JTable(new DefaultTableModel(new Object[]{"ID", "Product Name", "MRP",
"Discount", "Stock", "Expiry Date"}, 0));

JScrollPane scrollPane = new JScrollPane(productTable);

productDisplayPanel.add(scrollPane, BorderLayout.CENTER);


// Add New Product Button

JButton addProductButton = new JButton("Add New Product");

addProductButton.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent e) {

        cardLayout.show(mainPanel, "AddProduct");

    }

});

productDisplayPanel.add(addProductButton, BorderLayout.SOUTH);


// Refresh table on panel load

refreshProductTable(productTable);


return productDisplayPanel;
}


// Add Product Panel

private JPanel createAddProductPanel() {

    JPanel addProductPanel = new JPanel();

    addProductPanel.setLayout(new GridLayout(6, 2));


// Input Fields

addProductPanel.add(new JLabel("Product Name:"));

nameField = new JTextField();

addProductPanel.add(nameField);

```

```

addProductPanel.add(new JLabel("MRP:"));

mrpField = new JTextField();

addProductPanel.add(mrpField);


addProductPanel.add(new JLabel("Discount:"));

discountField = new JTextField();

addProductPanel.add(discountField);


addProductPanel.add(new JLabel("Stock:"));

stockField = new JTextField();

addProductPanel.add(stockField);


addProductPanel.add(new JLabel("Expiry Date (yyyy-mm-dd):"));

expiryField = new JTextField();

addProductPanel.add(expiryField);


// Add Button

JButton addButton = new JButton("Add Product");

addButton.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent e) {

        try {

            // Get input values

            String name = nameField.getText();

            double mrp = Double.parseDouble(mrpField.getText());

            double discount = Double.parseDouble(discountField.getText());

            int stock = Integer.parseInt(stockField.getText());

            String expiryDate = expiryField.getText();


            // Insert product into database

            String insertQuery = "INSERT INTO products (name, mrp, discount, stock, expiry_date)
VALUES (?, ?, ?, ?, ?)";

```

```

        PreparedStatement ps = connection.prepareStatement(insertQuery);

        ps.setString(1, name);

        ps.setDouble(2, mrp);

        ps.setDouble(3, discount);

        ps.setInt(4, stock);

        ps.setString(5, expiryDate);

        ps.executeUpdate();

        JOptionPane.showMessageDialog(addProductPanel, "Product added successfully!",
"Success", JOptionPane.INFORMATION_MESSAGE);

        // Refresh the product table
        refreshProductTable(productTable);

        // Switch back to the product display panel
        cardLayout.show(mainPanel, "ProductDisplay");
    } catch (SQLException ex) {
        ex.printStackTrace();

        JOptionPane.showMessageDialog(addProductPanel, "Error adding product!", "Error",
JOptionPane.ERROR_MESSAGE);

        } catch (NumberFormatException ex) {

            JOptionPane.showMessageDialog(addProductPanel, "Please enter valid numeric values!",
"Error", JOptionPane.ERROR_MESSAGE);

        }
    }

});

addProductPanel.add(addButton);

return addProductPanel;
}

// Method to refresh product table

```

```

private void refreshProductTable(JTable table) {
    try {
        String query = "SELECT * FROM products";
        PreparedStatement ps = connection.prepareStatement(query);
        ResultSet rs = ps.executeQuery();

        // Get table model and clear existing rows
        DefaultTableModel tableModel = (DefaultTableModel) table.getModel();
        tableModel.setRowCount(0);

        // Add rows to the table
        while (rs.next()) {
            Object[] row = {
                rs.getInt("id"),
                rs.getString("name"),
                rs.getDouble("mrp"),
                rs.getDouble("discount"),
                rs.getInt("stock"),
                rs.getDate("expiry_date")
            };
            tableModel.addRow(row);
        }
    } catch (SQLException e) {
        e.printStackTrace();
        JOptionPane.showMessageDialog(this, "Error refreshing product table", "Error",
JOptionPane.ERROR_MESSAGE);
    }
}
}

```