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MODULE -1:
import javax.swing.*;
import javax.swing.table.DefaultTableModel;
import java.awt.*;
import java.awt.event.*;
import java.util.ArrayList;

// Product Model
class Product {
    String id, name;
    int quantity;
    double price;

    Product(String id, String name, int qty, double price) {
        this.id = id;
        this.name = name;
        this.quantity = qty;
        this.price = price;
    }
}

public class AddProductModule extends JFrame {
    private ArrayList<Product> products = new ArrayList<>();
    private DefaultTableModel tableModel;
    private JTable table;
    private JTextField txtId, txtName, txtQty, txtPrice;

    public AddProductModule() {
        setTitle("Add New Product - Inventory Management");
        setSize(700, 400);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);

        JPanel panel = new JPanel(new BorderLayout(10, 10));

        // Input Fields
        JPanel inputPanel = new JPanel(new GridLayout(5, 2, 10, 10));
        inputPanel.add(new JLabel("Product ID:"));
        txtId = new JTextField(); inputPanel.add(txtId);
        inputPanel.add(new JLabel("Product Name:"));
        txtName = new JTextField(); inputPanel.add(txtName);
        inputPanel.add(new JLabel("Quantity:"));
        txtQty = new JTextField(); inputPanel.add(txtQty);
        inputPanel.add(new JLabel("Price:"));
    }
}

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txtPrice = new JTextField(); inputPanel.add(txtPrice);

JButton btnAdd = new JButton("Add Product");
inputPanel.add(new JLabel(""));
inputPanel.add(btnAdd);

panel.add(inputPanel, BorderLayout.NORTH);

// Table to Display Products
String[] columns = {"Product ID", "Product Name", "Quantity", "Price"};
tableModel = new DefaultTableModel(columns, 0);
table = new JTable(tableModel);
panel.add(new JScrollPane(table), BorderLayout.CENTER);

add(panel);

// Add Button Action
btnAdd.addActionListener(e -> {
    try {
        String id = txtId.getText();
        String name = txtName.getText();
        int qty = Integer.parseInt(txtQty.getText());
        double price = Double.parseDouble(txtPrice.getText());
        Product p = new Product(id, name, qty, price);
        products.add(p);
        tableModel.addRow(new Object[]{id, name, qty, price});
        JOptionPane.showMessageDialog(this, "Product Added Successfully ✓");
    } catch (Exception ex) {
        JOptionPane.showMessageDialog(this, "Invalid input.");
    }
});

public static void main(String[] args) {
    SwingUtilities.invokeLater(() -> new AddProductModule().setVisible(true));
}
}

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MODULE - 2:

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import java.awt.*;
import java.util.ArrayList;
import javax.swing.*;
import javax.swing.table.DefaultTableModel;

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public class DeleteProductModule extends JFrame {
    private ArrayList<Product> products = new ArrayList<>();
    private DefaultTableModel tableModel;
    private JTable table;

    public DeleteProductModule() {
        setTitle("Delete Product - Inventory Management");
        setSize(700, 400);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);

        // Sample Data
        products.add(new Product("P001", "Mouse", 10, 250.0));
        products.add(new Product("P002", "Keyboard", 5, 500.0));

        JPanel panel = new JPanel(new BorderLayout(10, 10));
        String[] columns = {"Product ID", "Name", "Quantity", "Price"};
        tableModel = new DefaultTableModel(columns, 0);
        table = new JTable(tableModel);
        refreshTable();

        JButton btnDelete = new JButton("Delete Selected Product");
        panel.add(new JScrollPane(table), BorderLayout.CENTER);
        panel.add(btnDelete, BorderLayout.SOUTH);

        add(panel);

        btnDelete.addActionListener(e -> {
            int row = table.getSelectedRow();
            if (row == -1) {
                JOptionPane.showMessageDialog(this, "Select a product to delete.");
                return;
            }
            products.remove(row);
            tableModel.removeRow(row);
            JOptionPane.showMessageDialog(this, "Product Deleted Successfully 🗑");
        });
    }

    private void refreshTable() {
        tableModel.setRowCount(0);
        for (Product p : products) {
            tableModel.addRow(new Object[]{p.id, p.name, p.quantity, p.price});
        }
    }
}

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        }
    }

    public static void main(String[] args) {
        SwingUtilities.invokeLater(() -> new DeleteProductModule().setVisible(true));
    }
}

```

MODULE - 3

```

import java.awt.*;
import java.util.ArrayList;
import javax.swing.*;
import javax.swing.table.DefaultTableModel;

public class DisplayInventoryModule extends JFrame {
    private ArrayList<Product> products = new ArrayList<>();
    private DefaultTableModel tableModel;
    private JTable table;

    public DisplayInventoryModule() {
        setTitle("Display Inventory - Inventory Management");
        setSize(700, 400);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);

        // Sample Products
        products.add(new Product("P001", "Mouse", 10, 250.0));
        products.add(new Product("P002", "Keyboard", 5, 500.0));
        products.add(new Product("P003", "Monitor", 3, 6000.0));

        JPanel panel = new JPanel(new BorderLayout(10, 10));
        String[] columns = {"Product ID", "Name", "Quantity", "Price"};
        tableModel = new DefaultTableModel(columns, 0);
        table = new JTable(tableModel);
        refreshTable();

        panel.add(new JScrollPane(table), BorderLayout.CENTER);
        add(panel);
    }

    private void refreshTable() {
        tableModel.setRowCount(0);
        for (Product p : products) {

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        tableModel.addRow(new Object[]{p.id, p.name, p.quantity, p.price});
    }
}

public static void main(String[] args) {
    SwingUtilities.invokeLater(() -> new DisplayInventoryModule().setVisible(true));
}
}

```

MODULE - 4

```

import java.awt.*;
import java.awt.event.*;
import java.util.ArrayList;
import javax.swing.*;
import javax.swing.table.DefaultTableModel;

public class UpdateProductModule extends JFrame {
    private ArrayList<Product> products = new ArrayList<>();
    private DefaultTableModel tableModel;
    private JTable table;
    private JTextField txtId, txtName, txtQty, txtPrice;

    public UpdateProductModule() {
        setTitle("Update Product - Inventory Management");
        setSize(700, 400);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);

        // Add some sample data
        products.add(new Product("P001", "Mouse", 10, 250.0));
        products.add(new Product("P002", "Keyboard", 5, 500.0));

        JPanel panel = new JPanel(new BorderLayout(10, 10));

        // Table Setup
        String[] columns = {"Product ID", "Name", "Quantity", "Price"};
        tableModel = new DefaultTableModel(columns, 0);
        table = new JTable(tableModel);
        refreshTable();
        panel.add(new JScrollPane(table), BorderLayout.CENTER);

        // Input Section
        JPanel inputPanel = new JPanel(new GridLayout(5, 2, 10, 10));

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txtId = new JTextField();
txtName = new JTextField();
txtQty = new JTextField();
txtPrice = new JTextField();

inputPanel.add(new JLabel("Product ID:")); inputPanel.add(txtId);
inputPanel.add(new JLabel("Name:")); inputPanel.add(txtName);
inputPanel.add(new JLabel("Quantity:")); inputPanel.add(txtQty);
inputPanel.add(new JLabel("Price:")); inputPanel.add(txtPrice);

JButton btnUpdate = new JButton("Update Product");
inputPanel.add(new JLabel(""));
inputPanel.add(btnUpdate);

panel.add(inputPanel, BorderLayout.NORTH);

add(panel);

// Table Click Action
table.addMouseListener(new MouseAdapter() {
    public void mouseClicked(MouseEvent e) {
        int row = table.getSelectedRow();
        txtId.setText(tableModel.getValueAt(row, 0).toString());
        txtName.setText(tableModel.getValueAt(row, 1).toString());
        txtQty.setText(tableModel.getValueAt(row, 2).toString());
        txtPrice.setText(tableModel.getValueAt(row, 3).toString());
    }
});

// Update Action
btnUpdate.addActionListener(e -> {
    int row = table.getSelectedRow();
    if (row == -1) {
        JOptionPane.showMessageDialog(this, "Select a product to update.");
        return;
    }

    products.set(row, new Product(
        txtId.getText(),
        txtName.getText(),
        Integer.parseInt(txtQty.getText()),
        Double.parseDouble(txtPrice.getText())
    ));
});

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refreshTable();
JOptionPane.showMessageDialog(this, "Product Updated Successfully ✓");
});

}

private void refreshTable() {
    tableModel.setRowCount(0);
    for (Product p : products) {
        tableModel.addRow(new Object[]{p.id, p.name, p.quantity, p.price});
    }
}

public static void main(String[] args) {
    SwingUtilities.invokeLater(() -> new UpdateProductModule().setVisible(true));
}
}
```