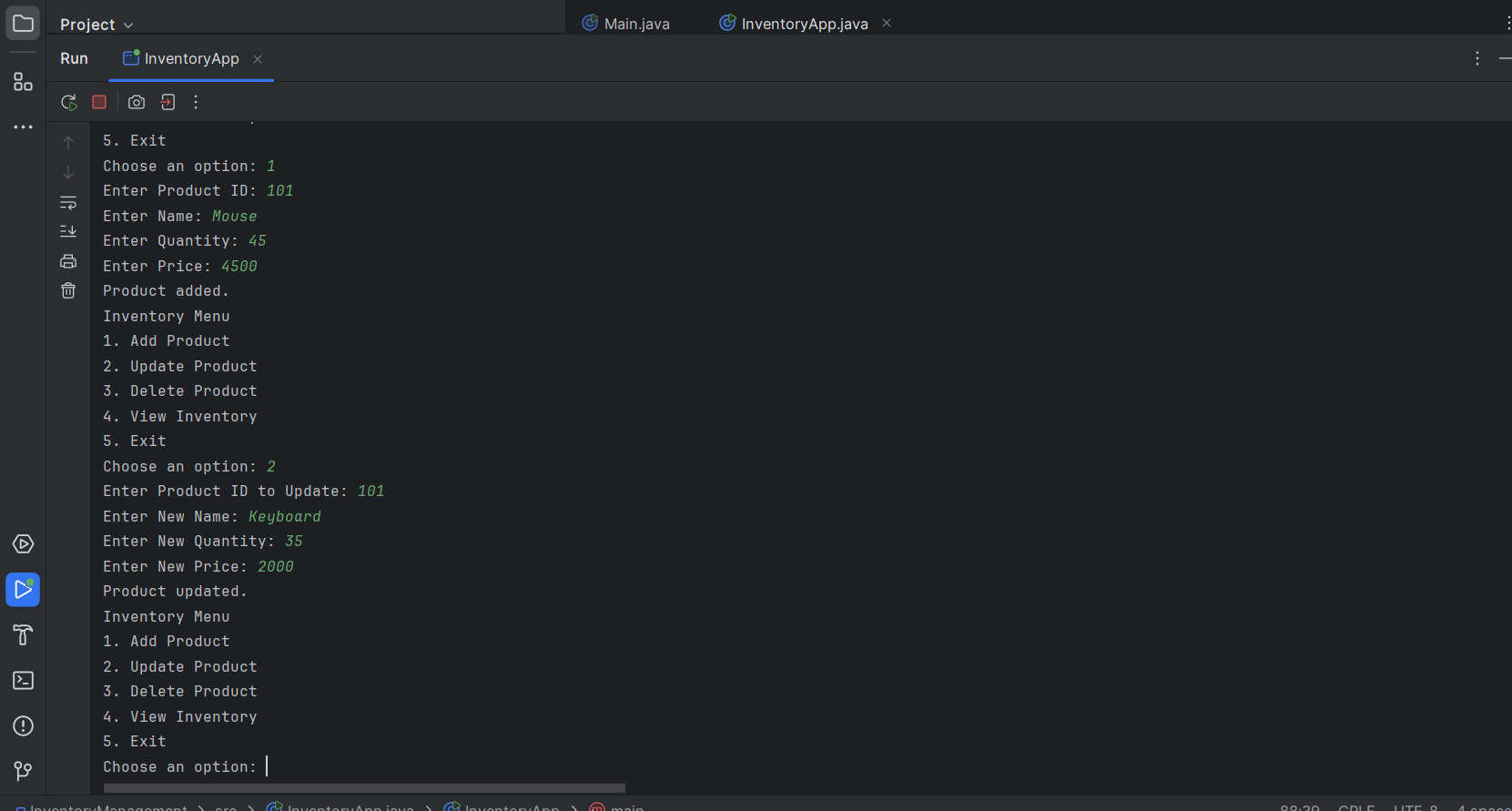
**Exercise 1: Inventory Management System**

**CODE:**

**InventoryApp.java**

import java.util.\*;  
class Product {  
 private int productId;  
 private String productName;  
 private int quantity;  
 private double price;  
  
 public Product(int productId, String productName, int quantity, double price) {  
 this.productId = productId;  
 this.productName = productName;  
 this.quantity = quantity;  
 this.price = price;  
 }  
  
 public int getProductId() { return productId; }  
 public String getProductName() { return productName; }  
 public int getQuantity() { return quantity; }  
 public double getPrice() { return price; }  
  
 public void setProductName(String productName) { this.productName = productName; }  
 public void setQuantity(int quantity) { this.quantity = quantity; }  
 public void setPrice(double price) { this.price = price; }  
  
 public String toString() {  
 return "[ID: " + productId + ", Name: " + productName +  
 ", Qty: " + quantity + ", Price: Rs." + price + "]";  
 }  
}  
  
class InventoryManagement {  
 private Map<Integer, Product> inventory = new HashMap<>();  
  
 public void addProduct(Product product) {  
 if (inventory.containsKey(product.getProductId())) {  
 System.*out*.println("Product ID already exists.");  
 } else {  
 inventory.put(product.getProductId(), product);  
 System.*out*.println("Product added.");  
 }  
 }  
  
 public void updateProduct(int id, String name, int qty, double price) {  
 if (inventory.containsKey(id)) {  
 Product p = inventory.get(id);  
 p.setProductName(name);  
 p.setQuantity(qty);  
 p.setPrice(price);  
 System.*out*.println("Product updated.");  
 } else {  
 System.*out*.println("Product not found.");  
 }  
 }  
  
 public void deleteProduct(int id) {  
 if (inventory.remove(id) != null) {  
 System.*out*.println("Product deleted.");  
 } else {  
 System.*out*.println("Product not found.");  
 }  
 }  
  
 public void displayInventory() {  
 if (inventory.isEmpty()) {  
 System.*out*.println("Inventory is empty.");  
 } else {  
 System.*out*.println("Inventory List:");  
 for (Product p : inventory.values()) {  
 System.*out*.println(p);  
 }  
 }  
 }  
}  
  
public class InventoryApp {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.*in*);  
 InventoryManagement inv = new InventoryManagement();  
  
 while (true) {  
 System.*out*.println("Inventory Menu");  
 System.*out*.println("1. Add Product");  
 System.*out*.println("2. Update Product");  
 System.*out*.println("3. Delete Product");  
 System.*out*.println("4. View Inventory");  
 System.*out*.println("5. Exit");  
 System.*out*.print("Choose an option: ");  
 int choice = sc.nextInt();  
  
 switch (choice) {  
 case 1:  
 System.*out*.print("Enter Product ID: ");  
 int id = sc.nextInt();  
 sc.nextLine();  
 System.*out*.print("Enter Name: ");  
 String name = sc.nextLine();  
 System.*out*.print("Enter Quantity: ");  
 int qty = sc.nextInt();  
 System.*out*.print("Enter Price: ");  
 double price = sc.nextDouble();  
 inv.addProduct(new Product(id, name, qty, price));  
 break;  
  
 case 2:  
 System.*out*.print("Enter Product ID to Update: ");  
 int uid = sc.nextInt();  
 sc.nextLine();  
 System.*out*.print("Enter New Name: ");  
 String uname = sc.nextLine();  
 System.*out*.print("Enter New Quantity: ");  
 int uqty = sc.nextInt();  
 System.*out*.print("Enter New Price: ");  
 double uprice = sc.nextDouble();  
 inv.updateProduct(uid, uname, uqty, uprice);  
 break;  
  
 case 3:  
 System.*out*.print("Enter Product ID to Delete: ");  
 int did = sc.nextInt();  
 inv.deleteProduct(did);  
 break;  
  
 case 4:  
 inv.displayInventory();  
 break;  
  
 case 5:  
 System.*out*.println("Exiting Inventory System. Goodbye!");  
 sc.close();  
 return;  
  
 default:  
 System.*out*.println("Invalid option. Try again.");  
 }  
 }  
 }  
}

**OUTPUT:**

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