```java
public class Product {
    protected int productId;
    protected String name;
    protected float price;

    public Product() {
    }

    public Product(int productId, String name, float price) {
        this.productId = Math.abs(productId);
        this.name = name;
        this.price = Math.abs(price);
    }

    public void setName(String name) {
        this.name = name;
    }

    public void setPrice(float price) {
        this.price = Math.abs(price);
    }

    public void setproductId(int productId) {
        this.productId = Math.abs(productId);
    }

    public String getName() {
        return name;
    }

    public float getPrice() {
        return price;
    }

    public int getproductId() {
        return productId;
    }

}
```

```java
public class ElectronicProduct extends Product {
    private String brand;
    private int warrantyPeriod;

    public ElectronicProduct(int productId, String name, float price, String brand, int warrantyPeriod) {
        super(productId, name, price);
        this.brand = brand;
        this.warrantyPeriod = Math.abs(warrantyPeriod);
    }

    public String getBrand() {
        return brand;
    }

    public void setBrand(String brand) {
        this.brand = brand;
    }

    public int getWarrantyPeriod() {
        return warrantyPeriod;
    }

    public void setWarrantyPeriod(int warrantyPeriod) {
        this.warrantyPeriod = Math.abs(warrantyPeriod);
    }
}

```

```java
public class BookProduct extends Product{
    private String author;
    private String publisher;

    public BookProduct() {
    }

    public BookProduct(int productId,String name ,float price , String publisher, String author) {
        super(productId,name,price);
        this.author = author;
        this.publisher = publisher;
    }

    public void setAuthor(String author) {
        this.author = author;
    }

    public void setPublisher(String publisher) {
        this.publisher = publisher;
    }

    public String getAuthor() {
        return author;
    }

    public String getPublisher() {
        return publisher;
    }
}

```

```java
public class ClothingProduct extends Product {
    private String size;
    private String fabric;

    public ClothingProduct(int productId, String name, float price, String size, String fabric) {
        super(productId, name, price);
        this.size = size;
        this.fabric = fabric;
    }

    public String getSize() {
        return size;
    }

    public void setSize(String size) {
        this.size = size;
    }

    public String getFabric() {
        return fabric;
    }

    public void setFabric(String fabric) {
        this.fabric = fabric;
    }
}

```

```java
public class Customer {
    private int customerId;
    private String name;
    private String address;

    public Customer(int customerId, String name, String address) {
        this.customerId = Math.abs(customerId);
        this.name = name;
        this.address = address;
    }

    public int getCustomerId() {
        return customerId;
    }

    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getAddress() {
        return address;
    }

    public void setAddress(String address) {
        this.address = address;
    }
}

```

```java
public class Cart {

    private int customerId;
    private int nProduct;
    private Product[] products;

    public Cart() {
    }

    public Cart(int customerId, int nProduct) {
        this.customerId = Math.abs(customerId);
        this.nProduct = Math.abs(nProduct);
        this.products = new Product[nProduct];
    }

    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    public void setnProduct(int nProduct) {
        this.nProduct = Math.abs(nProduct);
    }

    public void setProducts(Product[] products) {
        this.products = products;
    }

    public int getCustomerId() {
        return customerId;
    }

    public int getnProduct() {
        return nProduct;
    }

    public Product[] getProducts() {

        return products;
    }

    public float calculatePrice() {
        float totalPrice = 0;
        for (int i = 0; i < products.length; i++) {
            totalPrice += products[i].getPrice();
        }

        return totalPrice;
    }

    public void addProduct(Product product) {
        for (int i = 0; i < products.length; i++) {
            if (products[i] == null) {
                products[i] = product;
                this.nProduct++;
                break;
            }
        }
    }

    public void removeProduct(Product product) {
        for (int i = 0; i < products.length; i++) {
            if (products[i] == product) {
                products[i] = null;
                this.nProduct--;
                break;
            }

        }
    }

    public void placeOrder(int a) {
        Order order = new Order(customerId, 1, products, calculatePrice());
        switch (a) {
            case 1:
                System.out.println("here's your order's summary");
                order.printOrderInfo();
                break;
            case 2:
                System.out.println("okay you will buy next time :)");
            default:
                System.out.println("invalid value ");
                break;
        }
    }
}
```

```java
public class Order {
    private int customerId;
    private int orderId;
    private Product[] products;
    private float totalPrice;
    public Order(){}

    public Order(int customerId, int orderId, Product[] products, float totalPrice) {
        this.customerId = Math.abs(customerId);
        this.orderId = Math.abs(orderId);
        this.products = products;
        this.totalPrice = Math.abs(totalPrice);
    }

    public int getCustomerId() {
        return customerId;
    }

    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    public int getOrderId() {
        return orderId;
    }

    public void setOrderId(int orderId) {
        this.orderId = Math.abs(orderId);
    }

    public Product[] getProducts() {
        return products;
    }

    public void setProducts(Product[] products) {
        this.products = products;
    }

    public float getTotalPrice() {
        return totalPrice;
    }

    public void setTotalPrice(float totalPrice) {
        this.totalPrice = Math.abs(totalPrice);
    }

    public void printOrderInfo() {
        System.out.println("Order ID: " + orderId);
        System.out.println("Customer ID: " + customerId);
        System.out.println("Total Price: " + totalPrice);
        System.out.println("Products:");
        for (Product product : products) {
            System.out.println("- " + product.getName() + " - " + product.getPrice());
        }
    }
}

```

```java
import java.util.Scanner;

public class EcommerceSystem {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        // Welcome message
        System.out.println("Welcome to the E-Commerce System!");

        // Customer details
        System.out.println("Please enter your id:");
        int customerId = input.nextInt();
        input.nextLine(); // Consume newline
        System.out.println("Please enter your name:");
        String customerName = input.nextLine();
        System.out.println("Please enter your address:");
        String customerAddress = input.nextLine();
// like the project told me :(
        Customer customer = new Customer(customerId, customerName, customerAddress);

        // Number of products to add to cart
        System.out.println("How many products you want to add to your cart?");
        int nProducts = input.nextInt();
        input.nextLine(); // Consume newline

        Cart cart = new Cart(customerId, nProducts);

        // Adding products to cart
        for (int i = 0; i < nProducts; i++) {
            System.out.println("Which product would you like to add? 1- Smartphone 2- T-Shirt 3- OOP");
            int choice = input.nextInt();
            input.nextLine(); // Consume newline
            switch (choice) {
                case 1:
                    cart.addProduct(new ElectronicProduct(1, "Smartphone", 1299.99f, "Apple", 1));
                    break;
                case 2:
                    cart.addProduct(new ClothingProduct(2, "T-Shirt", 19.99f, "Medium", "Cotton"));
                    break;
                case 3:
                    cart.addProduct(new BookProduct(3, "OOP", 39.99f, "O'Reilly", "X Publications"));
                    break;
                default:
                    System.out.println("Invalid choice. Please try again.");
            }
        }

        // Calculate total price
        double totalPrice = cart.calculatePrice();
        System.out.println("Your total is $" + totalPrice + ". Would you like to place the order? 1- Yes 2- No");
        int placeOrderChoice = input.nextInt();
        System.out.println("********************************");
        cart.placeOrder(placeOrderChoice);
        input.close();
    }
}
```

```
Welcome to the E-Commerce System!
Please enter your id:
23011637
Please enter your name:
youssef
Please enter your address:
Alexandria
How many products you want to add to your cart?
3
Which product would you like to add? 1- Smartphone 2- T-Shirt 3- OOP
1
Which product would you like to add? 1- Smartphone 2- T-Shirt 3- OOP
2
Which product would you like to add? 1- Smartphone 2- T-Shirt 3- OOP
3
Your total is $1359.969970703125. Would you like to place the order? 1- Yes 2- No
1
**********************************
here's your order's summary
Order ID: 1
Customer ID: 23011637
Total Price: 1359.97
Products:
- Smartphone - 1299.99
- T-Shirt - 19.99
- OOP - 39.99
```