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

    public Order(int customerId, int orderId, Product[] products,float totalPrice) {
        if (customerId<0){
        this.customerId = Math.abs(customerId);
        }
        else{
        this.customerId = customerId;
        }
        if (orderId<0){
        this.orderId = Math.abs(orderId);
        }
        else{
        this.orderId = orderId;
        }
        this.products = products;
        this.totalPrice = totalPrice;
    }
    public void printOrderInfo() {
        System.out.println("Order id: " + orderId);
        System.out.println("Customer ID: " + customerId);
        System.out.println("Products:");
        for (Product product : products) {
            if (product != null) {
                System.out.println("- " + product.getProductName() + " - $" + product.getPrice());
            }
        }
        // for (int i = 0 ; i < products.length ; i++) {
        //     if (product != null) {
        //         System.out.println("- " + product.getProductName() + " - $" + product.getPrice());
        //     }
        // }
        System.out.println("Total Price: $" + totalPrice);
    }
}

```

```java
public class Cart {
    private int customerId;
    private int nProducts;
    private Product [] products;
    public Cart(int customerId, int nProducts){
        if (customerId>=0){
            this.customerId = customerId;
            }
            else {
            this.customerId = Math.abs(customerId);
            }
        if (nProducts>0){
            this.nProducts = nProducts;
            this.products = new Product[nProducts];
            }
            else if (nProducts==0) {
                this.products = new Product[nProducts];
            }
            else {
            this.nProducts = Math.abs(nProducts);
            this.products = new Product[nProducts];
            }
    }
    public int getCustomerId() {
        return customerId;
    }
    public int getnProducts() {
        return nProducts;
    }
    public void addProduct(Product product,int index){
        // for (int i=0;i<=index;i++){
        //     products[i]=product;
        // }
        products[index]=product;
    }
    public void removeProduct(int index){
        if (index>=0) {
        for (int i=0;i<index;i++){
            products[i] = null;
        }
        }
        else{
            System.out.println("Invalid index");
        }
    }
    public float calculatePrice(){
        float total = 0;
        for (int i=0; i<nProducts; i++) {
            total = total + products[i].getPrice();
        }
        return total;
    }
    public void placeOrder(){

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


}

```

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

    public Customer(int customerId, String name, String address) {
        if (customerId >= 0) {
            this.customerId = customerId;
            }
            else{
            this.customerId = Math.abs(customerId);
            }
        this.name = name;
        this.address = address;
    }
    public int getCustomerId() {
        return customerId;
    }

    public String getName() {
        return name;
    }

    public String getAddress() {
        return address;
    }


}

```

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

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

}

```

```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;
        if (warrantyPeriod <0){
        this.warrantyPeriod = Math.abs(warrantyPeriod);
        }
        else{
        this.warrantyPeriod = warrantyPeriod;
        }
    }
    public String getBrand() {
        return brand;
    }
    public int getWarrantyPeriod() {
        return warrantyPeriod;
    }


}

```

```java
public class Product {
    private int productId;
    private String productName;
    private float price;
    public Product(int productId, String productName, float price) {
        if (productId < 0) {
            this.productId = Math.abs(productId);
        }
        else{
            this.productId = productId;
        }
        if (price<0) {
            this.price = Math.abs(price);
        }
        else{
            this.price = price;
        }
        this.productName = productName;
    }
    public int getProductId() {
        return productId;
    }

    public String getProductName() {
        return productName;
    }

    public float getPrice() {
        return price;
    }


}

```

```java
import java.util.Random;
import java.util.Scanner;
public interface Main {
    public static void main(String[] args) {
        Random random = new Random();
        Scanner input = new Scanner(System.in);
        int randomNumber = random.nextInt(1001);
        ElectronicProduct smartphone = new ElectronicProduct(1, "smartphone", 599.9f, "Samsung", 1);
        ClothingProduct tShirt = new ClothingProduct(2, "T-shirt", 19.99f, "Medium", "Cotton");
        BookProduct oopBook = new BookProduct(3, "oopBook", 39.99f, "O'Reilly", "X Publications");
        System.out.println("Welcome to the E-commerce website!");
        System.out.println("Please enter your id: ");
        int id = input.nextInt();
        System.out.println("Please enter your name: ");
        String name = input.next();
        System.out.println("Please enter your address: ");
        String address = input.next();
        Customer c1 = new Customer(id,name, address);
        System.out.println("How many products you want to buy? ");
        int numberOfProducts = input.nextInt();
        Cart ca1 = new Cart(id, numberOfProducts);
        int index = 0;
        for (int i = 0; i < numberOfProducts; i++){
        System.out.println("please enter the product you want to add\n1-Smartphone\n2-T-Shirt\n3-oopBook");
        int choice = input.nextInt();
        if (choice==1){
            ca1.addProduct(smartphone,index);
            index++;
        }
        else if (choice==2){
            ca1.addProduct(tShirt,index);
                index++;
        }
        else if(choice ==3){
            ca1.addProduct(oopBook,index);
                index++;
        }
        else{
            System.out.println("Invalid choice");
        }
        }
        Order r1 = new Order(id,randomNumber,ca1.getProducts(),ca1.calculatePrice());
        r1.printOrderInfo();

}

}
```

```
Welcome to the E-commerce website!
Please enter your id:
23012094
Please enter your name:
Anas
Please enter your address:
smouha
How many products you want to buy?
3
please enter the product you want to add
1-Smartphone
2-T-Shirt
3-oopBook
2
please enter the product you want to add
1-Smartphone
2-T-Shirt
3-oopBook
3
please enter the product you want to add
1-Smartphone
2-T-Shirt
3-oopBook
1
Order id: 514
Customer ID: 23012094
Products:
- T-shirt - $19.99
- oopBook - $39.99
- smartphone - $599.9
Total Price: $659.88
PS C:\Users\anasa\Documents\visuial code\.vscode\Java\Project 1>
```