

```
package com.mycompany.ecommercesystem;

public class Product {

    private int productId;
    private String name;
    private float price;

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

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

    public int getProductId() {
        return productId;
    }

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

    public String getName() {
        return name;
    }

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

    public float getPrice() {
        return price;
    }
}
```

```
package com.mycompany.ecommercesystem;
```

```
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(a: warrantyPeriod);
```

```
    }
```

```
    public void setBrand(String brand) {
```

```
        this.brand = brand;
```

```
    }
```

```
    public String getBrand() {
```

```
        return brand;
```

```
    }
```

```
    public void setwarrantyPeriod(int warrantyPeriod) {
```

```
        this.warrantyPeriod = warrantyPeriod;
```

```
    }
```

```
    public int getwarrantyPeriod() {
```

```
        return warrantyPeriod;
```

```
    }
```

```
}
```

```
package com.mycompany.ecommercesystem;

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

    public String getSize() {
        return size;
    }

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

    public String getFabric() {
        return fabric;
    }

}
```

```
package com.mycompany.ecommercesystem;
```

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

```
    public String getAuthor() {  
        return author;  
    }
```

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

```
    public String getPublisher() {  
        return publisher;  
    }
```

```
}
```

```
package com.mycompany.ecommercesystem;
```

```
public class Customer {
```

```
    private int customerId;
```

```
    private String name;
```

```
    private String address;
```

```
    public Customer(int customerId, String name, String address) {
```

```
        this.customerId = Math.abs(a: customerId);
```

```
        this.name = name;
```

```
        this.address = address;
```

```
    }
```

```
    public void setCustomerId(int customerId) {
```

```
        this.customerId = Math.abs(a: customerId);
```

```
    }
```

```
    public int getCustomerId() {
```

```
        return customerId;
```

```
    }
```

```
    public void setName(String name) {
```

```
        this.name = name;
```

```
    }
```

```
    public String getName() {
```

```
        return name;
```

```
    }
```

```
    public void setAddress(String address) {
```

```
        this.address = address;
```

```
    }
```

```
    public String getAddress() {
```

```
        return address;
```

```
    }
```

```
}
```

```
package com.mycompany.ecommercesystem;
```

```
class Cart {
```

```
    private int customerId;  
    private int nProducts;  
    private Product[] products;
```

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

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

```
    public int getCustomerId() {  
        return customerId;  
    }
```

```
    public void setnProducts(int nProducts) {  
        this.nProducts = Math.abs(a: nProducts);  
    }
```

```
    public int getnProducts() {  
        return nProducts;  
    }
```

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

```
    public void removeProduct(Product product) {  
  
        for (int i = 0; i < products.length; i++) {  
            if (products[i] == product) {
```



```
package com.mycompany.ecommercesystem;
```

```
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) {
```

```
        this.customerId = Math.abs(a: customerId);
```

```
        this.orderId = Math.abs(a: orderId);
```

```
        this.products = products;
```

```
        this.totalPrice = Math.abs(a: totalPrice);
```

```
    }
```

```
    public void printOrderInfo() {System.out.println(x: "Here's you order's summary: ");
```

```
    System.out.println("Order ID: " + orderId);
```

```
        System.out.println("Customer ID: " + customerId);
```

```
        System.out.println(x: "Products:");
```

```
        for (Product product : products) {
```

```
            System.out.println(product.getName() + " | $" + product.getPrice());
```

```
        }
```

```
        System.out.println("Total Price: $" + totalPrice);
```

```
    }
```

```
}
```



```
package com.mycompany.ecommercesystem;

import java.util.Scanner;

public class EcommerceSystem {

    public static void main(String[] args) {
        Scanner cs = new Scanner(System.in);
        ElectronicProduct ep = new ElectronicProduct(productId: 1, name: "Smartphone", price: 599.9f, brand: "Samsung", warrantyPeriod: 1);
        ClothingProduct cp = new ClothingProduct(productId: 2, name: "T-shirt", price: 19.99f, size: "Medium", fabric: "Cotton");
        BookProduct bp = new BookProduct(productId: 3, name: "OOP", price: 39.99f, author: "O'Reilly", publisher: "X Publications");
        System.out.println("Welcome to the E-Commerce System!");
        System.out.println("Please enter your id ");
        int customerId = cs.nextInt();
        System.out.println("Please enter your name ");
        String name = cs.next();
        System.out.println("Please enter your address ");
        String address = cs.next();
        System.out.println("How many products do you want to add to your cart?");
        int nProducts = cs.nextInt();
        Cart cart = new Cart(customerId, nProducts);
        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 = cs.nextInt();
            switch (choice) {
                case 1:
                    cart.addProduct(product: ep);
                    break;
                case 2:
                    cart.addProduct(product: cp);
                    break;
                case 3:
                    cart.addProduct(product: bp);
                    break;
                default:
                    System.out.println("Invalid choice, try again");
                    i--;
            }
        }
        double totalPrice = cart.calculatePrice();
        System.out.println("Your total is $" + totalPrice + ". Would you like to place the order? 1- Yes 2- No");
        int decision = cs.nextInt();
        if (decision == 1) {
            Order order = cart.placeOrder();
        }
    }
}
```


Welcome to the E-Commerce System!

Please enter your id

23011641

Please enter your name

Youssef

Please enter your address

SidiBeshr

How many products do you want to add to your cart?

4

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

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

1

Your total is \$679.8699951171875. Would you like to place the order? 1- Yes 2- No

1

Here's you order's summary:

Order ID: 1

Customer ID: 23011641

Products:

T-shirt - \$19.99

OOP - \$39.99

T-shirt - \$19.99

Smartphone - \$599.9

Total Price: \$679.87