Product.java > ...

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

    public Product(int productId , String name , float price)
    {
        setProductId(productId);
        setName(name);
        setPrice(price);
    }

    public int getProductId() {
        return productId;
    }

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

    public String getName() {
        return name;
    }

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

    public float getPrice() {
        return price;
    }

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

```java
public class ElectronicProduct extends Product {

    private String brand ;
    private int warrentyPeriod ;


    public ElectronicProduct(int productId , String name , float price , String brand , int warrentyPeriod)
    {
        super(productId, name, price);
        setBrand(brand);
        setWarrentyPeriod(warrentyPeriod);
    }


    public String getBrand() {
        return brand;
    }

    private void setBrand(String brand) { …

    public int getWarrentyPeriod() {
        return warrentyPeriod;
    }

    private void setWarrentyPeriod(int warrentyPeriod) {
        this.warrentyPeriod = Math.abs(warrentyPeriod);
    }

}
```

EcommerceSystem.java   test.java   Customer.java   ElectronicProduct.java   BookProduct.java ✕   Car

BookProduct.java > ...

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

    public BookProduct(int productId , String name , float price , String author , String publisher)···

    public String getAuthor() {
        return author;
    }

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

    public String getPublisher() {
        return publisher;
    }

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

EcommerceSystem.java   📄 ClothingProduct.java ✕   📄 test.java   📄 Customer.java   📄 Cart.java   📄 Order.java

📄 ClothingProduct.java > ...

```java
public class ClothingProduct extends Product·
{

    private String size , fabric ;

    public ClothingProduct(int productId , String name , float price , String size , String fabric)
    {
        super(productId, name, price);
        setFabric(fabric);
        setSize(size);

    }

    public String getSize() {
        return size;
    }

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

    public String getFabric() {
        return fabric;
    }

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

Customer.java > ...

```java
public class Customer {

    private int customerId ;
    private String name , address ;

    public Customer(int customerId , String name , String address)
    {
        setName(name);
        setCustomerId(customerId);
        setAddress(address);
    }

    public int getCustomerId() {
        return customerId;
    }

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

    public String getName() {
        return name;
    }

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

    public String getAddress() {
        return address;
    }

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

}
```

```java
public class Cart
{
    private int customerId , nProducts , nLoggedProducts = 0 ;
    Product[] products ;

    public Cart(int customerId , int nProducts)
    {
        setCustomerId(customerId);
        setnProducts(nProducts);
        products = new Product[nProducts];
    }

    public int getnLoggedProducts() {
        return nLoggedProducts;
    }

    public int getCustomerId() {
        return customerId;
    }

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

    public int getnProducts() {
        return nProducts;
    }

    private void setnProducts(int nProducts) {
        this.nProducts = Math.abs(nProducts);
    }
```

```java
  1   public class Cart
 32
 33       public void addProduct(Product p)
 34       {
 35           if(nLoggedProducts < nProducts)
 36           {
 37               products[nLoggedProducts] = p ;
 38               nLoggedProducts++ ;
 39           }
 40           else
 41               System.out.println(x:"you exceeded the maximum number of products");
 42       }
 43
 44       public void removeProduct(Product p)
 45       {
 46           for(int i = 0 ; i < nLoggedProducts ; i++)
 47           {
 48               if(products[i].getProductId() == p.getProductId())
 49               {
 50                   for(int j = i ; j < nLoggedProducts-1 ; j++)   //? an array that shift the rest of the products in the array after one is removed
 51                       products[j] = products[j+1] ;              //? (this's so if the array is full and you remove a product and add another this new
 52                                                                   //? product object will be added to the last array element removing the one already there)
 53
 54                   products[nLoggedProducts-1] = null ;
 55                   nLoggedProducts-- ;
 56                   return ;
 57               }
 58           }
 59
 60           System.out.println(x:"not found");
 61       }
```

EcommerceSystem.java test.java Cart.java ✕ Order.java

Cart.java > ...

```java
public class Cart

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

        return totalPrice ;
    }

    public Order placOrder()
    {
        Order order1 = new Order(this.getCustomerId() , Order.getOrderIds() , this.calculatePrice() );
        order1.setProducts(this.products);
        return order1 ;
    }
}
```

```java
1    import javax.swing.JOptionPane;
2
3    public class Order
4    {
5        private int customerId , orderId ;
6        private float totalPrice ;
7        private static int orderIds = 1 ;          //? used as a counter for the order ids of the store
8        private Product[] products ;
9
10       public Order(int customerId , int orderId , float totalPrice )
11       {
12           setCustomerId(customerId);
13           setOrderId(orderIds);
14           setTotalPrice(totalPrice);
15           orderIds++ ;
16       }
17
18       public Order()
19       {}
20
21       public int getCustomerId() {
22           return customerId;
23       }
24
25       private void setCustomerId(int customerId) {
26           this.customerId = Math.abs(customerId) ;
27       }
28
29       public int getOrderId() {
30           return orderId;
31       }
32
33       private void setOrderId(int orderId) {
34           this.orderId = orderId;
35       }
36
37       public float getTotalPrice() {
38           return totalPrice;
39       }
```

EcommerceSystem.java   test.java   Cart.java   Order.java ✕

Order.java > ⁣⁣ Order

```java
 3     public class Order
39  💡    }
40
41         private void setTotalPrice(float totalPrice) {
42             this.totalPrice = totalPrice;
43         }
44
45         public Product[] getProducts() {
46             return products;
47         }
48
49         public void setProducts(Product[] products) {
50             this.products = products;
51         }
52
53         public static int getOrderIds() {
54             return orderIds;
55         }
56
57         public void printOrderInfo()
58         {
59             StringBuilder message = new StringBuilder();
60
61             message.append(str:"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~\nHere's your order's summary: \nOrder Id: ").append(getOrderId())
62                     .append(str:"\nCustomer-Id: ").append(getCustomerId()).append(str:"\n~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~\n");
63
64             for(int i = 0; i < products.length; i++)
65                 message.append(products[i].getName()).append(str:" - $").append(products[i].getPrice()).append(str:"\n");
66
67             message.append(str:"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~\nTotal price: $").append(totalPrice)
68                     .append(str:"\n~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~\nlooking forward seeing you soon ^_^\n");
69
70             JOptionPane.showMessageDialog(parentComponent:null, message.toString());
71         }
72
73     }
74
```

EcommerceSystem.java ✕   test.java   Cart.java   Order.java

EcommerceSystem.java > ⅊ EcommerceSystem > ⬡ main(String[])

```java
import javax.swing.JOptionPane;

public class EcommerceSystem
{
    Run | Debug
    public static void main(String[] args)·
    {
        Product p1 = new ElectronicProduct(productId:1, name:"smartphone", price:599.99f , brand:"Samsung", warrentyPeriod:1);
        Product p2 = new ElectronicProduct(productId:2, name:"Iron",price:299.99f, brand:"Toshiba", warrentyPeriod:2);
        Product p3 = new ElectronicProduct(productId:3, name:"vacuum cleaner",price:599.99f, brand:"Fresh", warrentyPeriod:3);
        Product p4 = new ElectronicProduct(productId:4, name:"fridge",price:1999.99f, brand:"Samsung", warrentyPeriod:5);
        Product p5 = new ClothingProduct(productId:5, name:"T-shirt", price:19.99f, size:"small", fabric:"cotton");
        Product p6 = new ClothingProduct(productId:6, name:"pants", price:59.99f, size:"medium", fabric:"jeans");
        Product p7 = new ClothingProduct(productId:7, name:"chemise", price:29.99f, size:"large", fabric:"cotton");
        Product p8 = new ClothingProduct(productId:8, name:"jacket", price:79.99f, size:"x-large", fabric:"leather");
        Product p9 = new BookProduct(productId:9, name:"OOP", price:39.99f , author:"O'Reilly", publisher:"X Publications");
        Product p10 = new BookProduct(productId:10, name:"Harry Potter and the chambre of secrets",price:49.99f , author:"J. K. Rolling", publisher:
        Product p11 = new BookProduct(productId:11, name:"Fire and Blood", price:45.0f , author:"George R. R. Martin", publisher:"bla bla bla2");
        Product p12 = new BookProduct(productId:12, name:"Rich dad poor dad", price:29.99f , author:"Robert T. Kiyosaki and Sharon Lechter", publish

        int customerId = Integer.parseInt(JOptionPane.showInputDialog(message:"Welcome to DigitMall ^_^\nenter you id")) ;
        String name = JOptionPane.showInputDialog(message:"enter you name");
        String address = JOptionPane.showInputDialog(message:"enter you address");
        Customer c1 = new Customer(customerId, name, address);

        int nProducts = Integer.parseInt(JOptionPane.showInputDialog(message:"how many products would you like to add to your cart? ")) ;
        Cart cart1 = new Cart(c1.getCustomerId(), nProducts);
        for(int i = 0 ; i < nProducts ;)
        {
            int option = Integer.parseInt(JOptionPane.showInputDialog("which product would you like to add ? 1- smartphone 2- Iron "+
                                                                      " 3- vacuum cleaner  4- fridge   5- t-shirt  6- pants   7- chemise "+
                                                                      " 8- jacket 9- OOP 10- harry potter & the chambre of secrets "+
                                                                      "11- Fire & Blood 12- rich dad poor dad"));
            boolean validOption = true ;
```

```java
3      public class EcommerceSystem
5          public static void main(String[] args)
34             switch (option)
35             {
36                 case 1:
37                     cart1.addProduct(p1);
38                     break;
39                 case 2:
40                     cart1.addProduct(p2);
41                     break;
42                 case 3:
43                     cart1.addProduct(p3);
44                     break;
45                 case 4:
46                     cart1.addProduct(p4);
47                     break;
48                 case 5:
49                     cart1.addProduct(p5);
50                     break;
51                 case 6:
52                     cart1.addProduct(p6);
53                     break;
54                 case 7:
55                     cart1.addProduct(p7);
56                     break;
57                 case 8:
58                     cart1.addProduct(p8);
59                     break;
60                 case 9:
61                     cart1.addProduct(p9);
62                     break;
63                 case 10:
64                     cart1.addProduct(p10);
65                     break;
66                 case 11:
67                     cart1.addProduct(p11);
68                     break;
69                 case 12:
70                     cart1.addProduct(p12);
```

EcommerceSystem.java ✕   test.java   Cart.java   Order.java

EcommerceSystem.java > ⭐ EcommerceSystem > ☉ main(String[])

```java
3    public class EcommerceSystem
5        public static void main(String[] args)
71                    break;
72                default:
73                {
74                    JOptionPane.showMessageDialog(parentComponent:null, message:"invalid option");
75                    validOption = false ;
76                    break;
77                }
78            }
79            if(validOption)
80                i++;
81        }
82
83        Order order1 = new Order();
84        int option = Integer.parseInt(JOptionPane.showInputDialog("the total price is $" + cart1.calculatePrice() + "\nwould you like to place the o
85        switch (option)·
86        {
87            case 1:
88            {
89                order1 = cart1.placOrder();
90                order1.printOrderInfo();
91                break;
92            }
93            case 2:
94            {
95                int option2 = Integer.parseInt(JOptionPane.showInputDialog(message:"would you like to remove any product from the cart and add anoth
96                switch (option2)·
97                {
98                    case 1:
99                    {
100                       int option3 = Integer.parseInt(JOptionPane.showInputDialog("which product you want to remove ? 1- smartphone 2- Iron "+
101                           " 3- vacuum cleaner  4- fridge    5- t-shirt 6- pants "+
102                           " 7- chemise 8- jacket 9- OOP 10- harry potter & the chambre of
103                           "11- Fire & Blood 12- rich dad poor dad"));
104                       switch (option3)
105                       {
106                           case 1:
107                               cart1.removeProduct(p1);
```

```
  3    public class EcommerceSystem
  5        public static void main(String[] args)
108                            break;
109                        case 2:
110                            cart1.removeProduct(p2);
111                            break;
112                        case 3:
113                            cart1.removeProduct(p3);
114                            break;
115                        case 4:
116                            cart1.removeProduct(p4);
117                            break;
118                        case 5:
119                            cart1.removeProduct(p5);
120                            break;
121                        case 6:
122                            cart1.removeProduct(p6);
123                            break;
124                        case 7:
125                            cart1.removeProduct(p7);
126                            break;
127                        case 8:
128                            cart1.removeProduct(p8);
129                            break;
130                        case 9:
131                            cart1.removeProduct(p9);
132                            break;
133                        case 10:
134                            cart1.removeProduct(p10);
135                            break;
136                        case 11:
137                            cart1.removeProduct(p11);
138                            break;
139                        case 12:
140                            cart1.removeProduct(p12);
141                            break;
142                        default:
143                            JOptionPane.showMessageDialog(parentComponent:null, message:"invalid option");
144                            break;
```

```java
 3    public class EcommerceSystem
 5        public static void main(String[] args)
                                break;
                        }
                        int option5 = Integer.parseInt(JOptionPane.showInputDialog(message:"which product would you like to add instead of the one y
                        switch (option5)
                        {
                            case 1:
                                cart1.addProduct(p1);
                                break;
                            case 2:
                                cart1.addProduct(p2);
                                break;
                            case 3:
                                cart1.addProduct(p3);
                                break;
                            case 4:
                                cart1.addProduct(p4);
                                break;
                            case 5:
                                cart1.addProduct(p5);
                                break;
                            case 6:
                                cart1.addProduct(p6);
                                break;
                            case 7:
                                cart1.addProduct(p7);
                                break;
                            case 8:
                                cart1.addProduct(p8);
                                break;
                            case 9:
                                cart1.addProduct(p9);
                                break;
                            case 10:
                                cart1.addProduct(p10);
                                break;
                            case 11:
                                cart1.addProduct(p11);
```

```java
  3    public class EcommerceSystem
  5        public static void main(String[] args)
180                        cart1.addProduct(p11);
181                        break;
182                    case 12:
183                        cart1.addProduct(p12);
184                        break;
185                    default:
186                        JOptionPane.showMessageDialog(parentComponent:null, message:"invalid option");
187                        break;
188                }
189                int option4 = Integer.parseInt(JOptionPane.showInputDialog(message:"would you like to place the order ? 1- Yes   2- No "));
190                switch (option4)·
191                {
192                    case 1:
193                        {
194                            order1 = cart1.placOrder();
195                            order1.printOrderInfo();
196                            break;
197                        }
198                    case 2:
199                        JOptionPane.showMessageDialog(parentComponent:null, message:"it was nice having you. GoodBye ^_^");
200                        break;
201                    default:
202                        JOptionPane.showMessageDialog(parentComponent:null, message:"invalid option");
203                        break;
204                }
205                break;
206            }
207            case 2:
208            {
209                JOptionPane.showMessageDialog(parentComponent:null, message:"it was nice having you. GoodBye ^_^");
210                break;
211            }
212            default:
213                JOptionPane.showMessageDialog(parentComponent:null, message:"invaild option");
214                break;
215        }
216        break;
```

```java
215                 }
216                 break;
217             }
218         default:
219             JOptionPane.showMessageDialog(parentComponent:null, message:"invaild option");
220             break;
221         }
222
223     }//////////////////////////////////////////////////////////////////////////
224 }
```
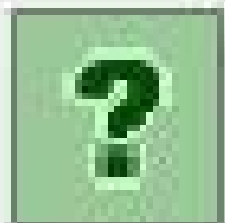
Input ✕

❓ **Welcome to DigitMall ^_^**
enter you id

23011586

[OK] [Cancel]

Input   ✕

? **enter you name**

```
Nada Mohamed
```

[OK]   [Cancel]

Input   ✕

enter you address

Alex

[OK] [Cancel]

Input ✕

? how many products would you like to add to your cart?

3

OK   Cancel

Input   ✕

?   **which product would you like to add ? 1- smartphone 2- Iron 3- vacuum cleaner 4- fridge   5- t-shirt 6- pants   7- chemise 8- jacket 9- OOP 10- harry potter & the chambre of secrets 11- Fire & Blood 12- rich dad poor dad**

1

OK   Cancel

Input   ✕

?   which product would you like to add ? 1- smartphone 2- Iron 3- vacuum cleaner 4- fridge   5- t-shirt 6- pants   7- chemise 8- jacket 9- OOP 10- harry potter & the chambre of secrets 11- Fire & Blood 12- rich dad poor dad

4

OK   Cancel

Input   ✕

? **which product would you like to add ? 1- smartphone 2- Iron 3- vacuum cleaner 4- fridge   5- t-shirt 6- pants   7- chemise 8- jacket 9- OOP 10- harry potter & the chambre of secrets 11- Fire & Blood 12- rich dad poor dad**

5

OK   Cancel

Input ✕

❓ the total price is $2619.97
would you like to place the order ? 1- Yes 2- No

> 1

[OK]   [Cancel]

Message   ✕

ⓘ

~~~~~~

Here's your order's summary:

Order Id: 1

Customer-Id: 23011586

~~~~~~

smartphone - $599.99

fridge - $1999.99

T-shirt - $19.99

~~~~~~

Total price: $2619.97

~~~~~~

looking forward seeing you soon ^_^

OK