

```
1 package project ;
2 import java.util.Scanner ;
3
4 class Product {
5
6     private int productId;
7     private String name;
8     private double price;
9
10    public Product(int productId, String name, double price) {
11        this.productId = Math.abs(productId) ;
12        this.name = name ;
13        this.price = Math.abs(price) ;
14    }
15
16    public void setProductId (int productId) {
17        this.productId = productId ;
18    }
19
20    public void setName (String name) {
21        this.name = name ;
22    }
23
24    public void setPrice (double price) {
25        this.price = price ;
26    }
27
28    public int getProductId() {
29        return this.productId;
30    }
31
32    public String getName() {
33        return this.name;
34    }
35
36    public double getPrice() {
37        return this.price;
38    }
39 }
```

```
37 class ElectronicProduct extends Product {
38
39     private String brand ;
40     private int warrantyPeriod ;
41
42     public ElectronicProduct (int productId , String name , double price , String brand , int warrantyPeriod) {
43         super (productId,name,price) ;
44         this.brand = brand ;
45         this.warrantyPeriod = warrantyPeriod ;
46     }
47
48     public void setBrand (String brand) {
49         this.brand = brand ;
50     }
51     public void setWarranty (int warrantyPeriod) {
52         this.warrantyPeriod = warrantyPeriod ;
53     }
54
55     public String getBrand () {
56         return this.brand ;
57     }
58     public int getWarranty () {
59         return this.warrantyPeriod ;
60     }
61 }
62
63 class ClothingProduct extends Product {
64
65     private String size;
66     private String fabric;
67
68     public ClothingProduct(int productId, String name, double price , String size , String fabric) {
69         super(productId, name, price);
70         this.size = size ;
71         this.fabric = fabric ;
72     }
73
74     public void setSize (String size) {
75         this.size = size ;
76     }
77     public void setFabric (String fabric) {
78         this.fabric = fabric ;
79     }
80
81     public String getSize () {
82         return this.size ;
83     }
84     public String getFabric () {
85         return this.fabric ;
86     }
87 }
88
```

```
88
89 class BookProduct extends Product {
90
91     private String author ;
92     private String publisher ;
93
94     public BookProduct(int productId, String name, double price , String author , String publisher) {
95         super(productId, name, price);
96         this.author = author ;
97         this.publisher = publisher ;
98     }
99
100    public void setAuthor (String author) {
101        this.author = author ;
102    }
103    public void setPublisher (String publisher) {
104        this.publisher = publisher ;
105    }
106
107    public String getAuthor () {
108        return this.author ;
109    }
110    public String getPublisher () {
111        return this.publisher ;
112    }
113 }
114
```

```
115     class Customer {
116
117         private int customerId ;
118         private String name ;
119         private String address ;
120
121         public Customer (int customerId , String name , String address ) {
122             this.customerId = Math.abs(customerId) ;
123             this.name = name ;
124             this.address = address ;
125         }
126
127         public void setCustomerId (int customerId) {
128             this.customerId = customerId ;
129         }
130
131         public void setCustomerName (String name) {
132             this.name = name ;
133         }
134
135         public void setAddress (String address) {
136             this.address = address ;
137         }
138
139         public int getCustomerId () {
140             return this.customerId ;
141         }
142
143         public String getCustomerName () {
144             return this.name ;
145         }
146
147         public String getAddress () {
148             return this.address ;
149         }
150     }
```

```

148 class Cart {
149
150     private int customerId;
151     private int nProducts;
152     private Product [] products;
153     public Cart(int customerId, int nProducts) {
154         this.customerId = Math.abs(a: customerId);
155         this.nProducts = Math.abs(a: nProducts);
156         this.products = new Product[nProducts];
157     }
158     public void setCustomerId (int customerId) {
159         this.customerId = customerId ;
160     }
161     public void setProductsNumebr (int nProducts){
162         this.nProducts = nProducts ;
163     }
164     public int getCustomerId () {
165         return this.customerId ;
166     }
167     public int getProductsNummber () {
168         return this.nProducts ;
169     }
170
171     public void addProduct(Product product) {
172         for (int i = 0; i < products.length; i++) {
173             if (products[i] == null) {
174                 products[i] = product;
175                 break ;
176             }
177         }
178     }
179     public void removeProduct(int productId) {
180         for (int i = 0; i < products.length; i++) {
181             if (products[i] != null && products[i].getProductId() == productId) {
182                 products[i] = null;
183                 break ;
184             }
185         }
186     }
187     public double calculatePrice() {
188         float totalPrice = 0;
189         for (Product product : products) {
190             if (product != null) {
191                 totalPrice += product.getPrice();
192             }
193         }
194         return totalPrice;
195     }
196     public Order placeOrder(int orderId) {
197         return new Order (customerId , orderId , products, totalPrice: calculatePrice());
198     }
199 }
200

```



```
201 class Order {
202     private int customerId ;
203     private int orderId ;
204     private Product[] products ;
205     private double totalPrice ;
206
207     public Order(int customerId, int orderId , Product[] products , double totalPrice) {
208         this.customerId = customerId ;
209         this.orderId = orderId ;
210         this.products = products ;
211         this.totalPrice = totalPrice ;
212     }
213
214     public void printOrderInfo() {
215
216         System.out.println("Here's your order's summary :");
217         System.out.println("Order ID: " + orderId);
218         System.out.println("Customer ID: " + customerId);
219         System.out.println("Products:");
220         for (Product product : products) {
221             if (product != null) {
222                 System.out.println( product.getName() + " - $" + product.getPrice());
223             }
224         }
225         System.out.println("Total Price: $" + totalPrice);
226     }
227 }
228
```

```

229 public class EcommerceSystem {
230     public static void main(String[] args) {
231         Scanner input = new Scanner(System.in);
232
233         ElectronicProduct ep = new ElectronicProduct(productId: 1, name: "smartphone", price: 599.9, brand: "Samsunng", warrantyPeriod: 1);
234         ClothingProduct cp = new ClothingProduct(productId: 2, name: "T-shirt", price: 19.99, size: "Medium", fabric: "Cotton");
235         BookProduct bp = new BookProduct(productId: 3, name: "OOP", price: 39.99, author: "O'Riley", publisher: "X Publications");
236
237         System.out.println(x: "Welcome to the E-Commerce System!");
238         System.out.println(x: "Please enter your id");
239         int customerId = input.nextInt();
240         input.nextLine();
241         System.out.println(x: "Please enter your name");
242         String name = input.nextLine();
243         System.out.println(x: "Please enter your address");
244         String address = input.nextLine();
245
246         Customer c = new Customer(customerId, name, address);
247         System.out.println(x: "How many products do you want to add to your cart?");
248         int nProducts = input.nextInt();
249         Cart cart = new Cart(customerId: c.getCustomerId(), nProducts);
250         int orderId = 1;
251         for (int i = 0; i < nProducts; i++) {
252             System.out.println(x: "Which product would you like to add? 1- Smartphone 2- T-Shirt 3- OOP");
253             int choice = input.nextInt();
254             switch (choice) {
255                 case 1:
256                     cart.addProduct(product: ep);
257                     break;
258                 case 2:
259                     cart.addProduct(product: cp);
260                     break;
261                 case 3:
262                     cart.addProduct(product: bp);
263                     break;
264                 default:
265                     System.out.println(x: "Invalid choice!");
266                     i--;
267                     break;
268             }
269         }
270         System.out.println("Your total is $" + cart.calculatePrice() + ". Would you like to place the order? 1-Yes 2-No");
271         int x = input.nextInt();
272         if (x == 1) {
273             Order order = cart.placeOrder(orderId);
274             order.printOrderInfo();
275         } else if (x == 2) {
276             System.out.println(x: "Order cancelled.");
277         } else {
278             System.out.println(x: "Invalid choice!");
279         }
280     }
281 }

```

```
run:
Welcome to the E-Commerce System!
Please enter your id
20231
Please enter your name
Abdelrahman
Please enter your address
Semouha
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 $679.87. Would you like to place the order? 1-Yes 2-No
1
Here's your order's summary :
Order ID: 1
Customer ID: 20231
Products:
T-shirt - $19.99
OOP - $39.99
T-shirt - $19.99
smartphone - $599.9
Total Price: $679.87
BUILD SUCCESSFUL (total time: 11 seconds)
```