

## Product Class:

```
1
2 package javaapplication156;
3
4
5 public class Product {
6     int productId;
7     String name;
8     float price;
9
10    public Product(int productId, String name, float price) {
11        this.productId = Math.abs(productId);
12        this.name = name;
13        this.price = Math.abs(price);
14    }
15
16    public int getProductId() {
17        return productId;
18    }
19
20    public void setProductId(int productId) {
21        this.productId = productId;
22    }
23
24    public String getName() {
25        return name;
26    }
27
28    public void setName(String name) {
29        this.name = name;
30    }
31
32    public float getPrice() {
33        return price;
34    }
35
36    public void setPrice(float price) {
37        this.price = price;
38    }
39 }
```

## **ElectronicProduct Class:**

```
1
2 package javaapplication156;
3
4 public class ElectronicProduct extends Product{
5     String brand;
6     int warrantyPeriod;
7
8     public ElectronicProduct(String brand, int warrantyPeriod, int productId, String name, float price) {
9         super(productId, name, price);
10        this.brand = brand;
11        this.warrantyPeriod = Math.abs(a: warrantyPeriod);
12    }
13
14    public String getBrand() {
15        return brand;
16    }
17
18    public void setBrand(String brand) {
19        this.brand = brand;
20    }
21
22    public int getWarrantyPeriod() {
23        return warrantyPeriod;
24    }
25
26    public void setWarrantyPeriod(int warrantyPeriod) {
27        this.warrantyPeriod = warrantyPeriod;
28    }
29
30 }
31
```

## **ClothingProduct Class:**

```
1
2 package javaapplication156;
3
4 public class ClothingProduct extends Product{
5     String size;
6     String fabric;
7
8     public ClothingProduct(String size, String fabric, int productId, String name, float price) {
9         super(productId, name, price);
10        this.size = size;
11        this.fabric = fabric;
12    }
13
14    public String getSize() {
15        return size;
16    }
17
18    public void setSize(String size) {
19        this.size = size;
20    }
21
22    public String getFabric() {
23        return fabric;
24    }
25
26    public void setFabric(String fabric) {
27        this.fabric = fabric;
28    }
29
30 }
31
```

## **BookProduct Class:**

```
1
2 package javaapplication156;
3
4 public class BookProduct extends Product{
5     String author;
6     String publisher;
7
8     public BookProduct(String author, String publisher, int productId, String name, float price) {
9         super(productId, name, price);
10        this.author = author;
11        this.publisher = publisher;
12    }
13
14    public String getAuthor() {
15        return author;
16    }
17
18    public void setAuthor(String author) {
19        this.author = author;
20    }
21
22    public String getPublisher() {
23        return publisher;
24    }
25
26    public void setPublisher(String publisher) {
27        this.publisher = publisher;
28    }
29 }
30
31
```

## Customer Class:

```
1
2  package javaapplication156;
3
4  public class Customer {
5      int customerId;
6      String name;
7      String address;
8      public Customer(int customerId, String name, String address) {
9          this.customerId = Math.abs(a: customerId);
10         this.name = name;
11         this.address = address;
12     }
13
14     public int getCustomerId() {
15         return customerId;
16     }
17     public void setCustomerId(int customerId) {
18         this.customerId = customerId;
19     }
20     public String getName() {
21         return name;
22     }
23     public void setName(String name) {
24         this.name = name;
25     }
26     public String getAddress() {
27         return address;
28     }
29     public void setAddress(String address) {
30         this.address = address;
31     }
32 }
33
```

## Cart Class:

```
1
2 package javaapplication156;
3
4 public class Cart {
5     int customerId;
6     int nProducts;
7     Product[] products = new Product[nProducts];
8
9     public Cart(int customerId, int nProducts) {
10         this.customerId = Math.abs(a: customerId);
11         this.nProducts = Math.abs(a: nProducts);
12         this.products = new Product[nProducts];
13     }
14     public int getCustomerId() {
15         return customerId;
16     }
17     public void setCustomerId(int customerId) {
18         this.customerId = customerId;
19     }
20     public int getnProducts() {
21         return nProducts;
22     }
23     public void setnProducts(int nProducts) {
24         this.nProducts = nProducts;
25     }
26     public Product[] getProducts() {
27         return products;
28     }
29     public void setProducts(Product[] products) {
30         this.products = products;
31     }
32 }
```

```
33     int count =0;
34     public void addProduct(Product productToAdd) {
35         products[count] = productToAdd;
36         count++;
37     }
38
39     public void removeProduct(int productId) {
40         for(int i=0;i<nProducts;i++){
41             if(products[i].getProductId() == productId){
42                 products[i] = products[nProducts-1];
43                 products[nProducts-1] = null;
44                 nProducts--;
45             }
46         }
47     }
48
49     float totalPrice=0;
50     public float calculatePrice(){
51         for(int i=0;i<nProducts;i++){
52             totalPrice += products[i].getPrice();
53         }
54         return totalPrice;
55     }
56
57     public Order placeOrder(){
58         if(nProducts > 0){
59             float totalPrice = calculatePrice();
60             int orderId = (int) (Math.random()*1000);
61             Order newOrder = new Order(customerId, orderId, products, totalPrice);
62             this.products = new Product [this.nProducts];
63             return newOrder;
64         }
65         else{
66             System.out.println(x: "No products in the cart to place an order.");
67             return null;
68         }
69     }
70 }
71
```

## Order Class:

```
1
2 package javaapplication156;
3
4 public class Order {
5     int customerId;
6     int orderId;
7     Product [] products;
8     float totalPrice;
9
10    public Order(int customerId, int orderId, Product[] products, float totalPrice) {
11        this.customerId = Math.abs(a: customerId);
12        this.orderId = Math.abs(a: orderId);
13        this.products = products;
14        this.totalPrice = Math.abs(a: totalPrice);
15    }
16
17    public void printOrderInfo() {
18        System.out.println(x: "Here's your order's summary:");
19        System.out.println("Order ID: " + orderId);
20        System.out.println("Customer ID: " + customerId);
21        System.out.println(x: "Products: ");
22        for(Product productToAdd : products) {
23            System.out.println(productToAdd.getName() + " - $" + productToAdd.getPrice());
24        }
25        System.out.println("Total Price: $" + totalPrice);
26    }
27 }
28
```



## EcommerceSystem Class:

```
1 package javaapplication156;
2 import java.util.Scanner;
3 public class EcommerceSystem {
4
5     public static void main(String[] args) {
6         Scanner cs = new Scanner (source: System.in);
7         ElectronicProduct e = new ElectronicProduct (brand: "Samsung", warrantyPeriod: 1, productId: 1, name: "smartphone", price: 599.99f);
8         ClothingProduct cl = new ClothingProduct (size: "Medium", fabric: "Cotton", productId: 2, name: "T-shirt", price: 19.99f );
9         BookProduct b = new BookProduct (author: "O'Reilly", publisher: "X Publications", productId: 3, name: "OOP", price: 39.99f);
10
11         System.out.println(x: "Welcome to the E-Commerce System!");
12         System.out.println(x: "Please enter your id");
13         int customerId = cs.nextInt();
14         System.out.println(x: "Please enter your name");
15         String name = cs.nextLine();
16         System.out.println(x: "Please enter your address");
17         String address = cs.nextLine();
18         Customer c = new Customer (customerId , name, address);
19         System.out.println(x: "How many products you want to add to the cart?");
20         int nProducts = cs.nextInt();
21         Cart cart = new Cart (customerId, nProducts);
22
23         for(int i=0; i<nProducts; i++){
24             System.out.println(x: "Which product would you like to add? 1- Smartphone 2- T-shirt 3- OOP");
25             int productId = cs.nextInt();
26             switch(productId){
27                 case 1 :
28                     cart.addProduct (productToAdd: e);
29                     break;
30                 case 2 :
31                     cart.addProduct (productToAdd: cl);
32                     break;
33                 case 3 :
34                     cart.addProduct (productToAdd: b);
35                     break;
36                 default :
37                     System.out.println(x: "Invalid input!");
38             }
39         }
40         float total = cart.calculatePrice();
41         System.out.print("Your total is $" + total + ". ");
42         System.out.println(x: "Would you like to place the order? 1- Yes 2- No");
43         int choice = cs.nextInt();
44         if(choice == 1){
45             Order order = new Order (customerId, orderId: 1, products: cart.getProducts(), totalPrice: total);
46             order.printOrderInfo();
47         }
48         else{
49             System.out.println(x: "The order is not placed!");
50         }
51     }
52 }
53 }
```

## **The Output:**

```
Output - JavaApplication156 (run) x
run:
Welcome to the E-Commerce System!
Please enter your id
23010083
Please enter your name
Rana
Please enter your address
address
How many products you want to add to the 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 $679.95996. Would you like to place the order? 1- Yes 2- No
1
Here's your order's summary:
Order ID: 1
Customer ID: 23010083
Products:
T-shirt - $19.99
OOP - $39.99
T-shirt - $19.99
smartphone - $599.99
Total Price: $679.95996
BUILD SUCCESSFUL (total time: 27 seconds)
|
```