

ID :23011568

1- Product

```
1 public class Product {  
2     protected int productID;  
3     protected String name;  
4     protected double price;  
5  
6     public void setProductID(int productID) {  
7         this.productID = Math.abs(a: productID);  
8     }  
9  
10    public int getProductID() {  
11        return productID;  
12    }  
13  
14    public void setName(String name) {  
15        this.name = name;  
16    }  
17  
18    public String getName() {  
19        return name;  
20    }  
21  
22    public void setPrice(double price) {  
23        this.price = Math.abs(a: price);  
24    }  
25  
26    public double getPrice() {  
27        return price;  
28    }  
29 }  
30  
31 }
```

2- ElectronicProduct

```
2   public class ElectronicProduct extends Product {
3       private String brand;
4       private int warrantyPeriod;
5
6       public String getBrand() {
7           return brand;
8       }
9
10      public void setBrand(String brand) {
11          this.brand = brand;
12      }
13
14      public void setWarrantyPeriod(int warrantyPeriod) {
15          this.warrantyPeriod = Math.abs(warrantyPeriod);
16      }
17
18      public int getWarrantyPeriod() {
19          return warrantyPeriod;
20      }
21  }
```

3- BookProduct

```
2  public class BookProduct extends Product {
3      private String author;
4      private String publisher;
5
6      public String getAuthor() {
7          return author;
8      }
9
10     public void setAuthor(String author) {
11         this.author = author;
12     }
13
14     public String getPublisher() {
15         return publisher;
16     }
17
18     public void setPublisher(String publisher) {
19         this.publisher = publisher;
20     }
21 }
```

4- ClothingProduct

```
2 public class ClothingProduct extends Product {
3     private String size;
4     private String fabric;
5
6     public String getSize() {
7         return size;
8     }
9
10    public void setSize(String size) {
11        this.size = size;
12    }
13
14    public String getFabric() {
15        return fabric;
16    }
17
18    public void setFabric(String fabric) {
19        this.fabric = fabric;
20    }
21 }
```

5- Customer

```
3 public class Customer {
4     private int customerID;
5     private String name;
6     private String address;
7
8     public int getCustomerID() {
9         return customerID;
10    }
11
12    public void setCustomerID(int customerID) {
13        this.customerID = Math.abs(customerID);
14    }
15
16    public String getName() {
17        return name;
18    }
19
20    public void setName(String name) {
21        this.name = name;
22    }
23
24    public String getAddress() {
25        return address;
26    }
27
28    public void setAddress(String address) {
29        this.address = address;
30    }
31 }
```

6 – Cart

```
3  import java.util.Scanner;
4  public class Cart {
5      Scanner user = new Scanner(System.in);
6      private int customerID;
7      private int nProducts;
8      private Product [] products ;
9
10     public Cart() {
11     }
12
13     public Cart(int customerID, int nProducts) {
14         this.customerID = customerID;
15         this.nProducts = Math.abs(a: nProducts);
16         products =new Product[this.nProducts];
17     }
18
19     public int getCustomerID() {
20         return customerID;
21     }
22
23     public void setCustomerID(int customerID) {
24         this.customerID = Math.abs(a: customerID);
25     }
26
27     public int getnProducts() {
28         return nProducts;
29     }
30 }
```

```

31 public void setnProducts(int nProducts) {
32     this.nProducts = Math.abs(a: nProducts);
33 }
34
35 public void addProduct(Product x,int a){
36     if(a<nProducts){
37         products[a]=x;
38     }
39     else{
40         Product [] add=new Product[a+1];
41         for (int i=0;i<products.length;i++){
42             add[i]=products[i];
43         }
44         add[a]=x;
45         products =add;
46         nProducts=products.length;
47     }
48 }
49
50
51 public Product[] getProducts() {
52     return products;
53 }
54

```

```

55 public void removeProduct(){
56     System.out.println("which Product want you remove?");
57     for (int i= 0;i<products.length;i++){
58         System.out.println((i+1)+ " - " + products[i].getName());
59     }
60     int re = user.nextInt();
61     if (re>products.length){
62         System.out.println("invalid input");
63     }
64     Product [] N =new Product[products.length-1];
65     for (int i = 0,pre =0;i<N.length; pre++){
66         if (pre==(re-1)){
67             continue;
68         }
69         N[i] = products[pre];
70         i++;
71     }
72     products =N;
73     nProducts--;
74
75 }
76

```

```

76
77 public double calculatePrice() {
78     double finPrice=0;
79     for (int i=0;i<products.length;i++) {
80         finPrice+=products[i].getPrice();
81     }
82     return finPrice;
83 }

```

```

85 public boolean placeOrder() {
86     boolean Ret;
87     do{
88         System.out.println("your total is "+calculatePrice()+"$ Would you like to place the order?");
89         System.out.println(" 1- Yes");
90         System.out.println(" 2- No ");
91         int fir =user.nextInt();
92         System.out.println("");
93         System.out.println("");
94         if (fir==1){
95             Ret = true;
96             break;
97         }
98         else if (fir==2){
99             System.out.println("What do you want ?");
100             System.out.println("1- Remove product");
101             System.out.println("2- Print my products");
102             System.out.println("3- Exit the program");
103             System.out.println(" Tap any number except above to Return previous menu");
104             int sec = user.nextInt();
105             System.out.println("");
106             System.out.println("");
107             System.out.println("");
108             if (sec ==1){
109                 removeProduct();
110             }
111             else if (sec==2){

```

```

111         else if (sec==2){
112             System.out.println("Products");
113             for (int i =0; i<products.length;i++){
114                 System.out.println((i+1)+" - "+products[i].getName()+" $"+products[i].getPrice()+".");
115             }
116         }
117         else if (sec==3){
118             Ret = false;
119             break;
120         }
121     }
122     else{
123         System.out.println("invalid input");
124     }
125     System.out.println("");
126     System.out.println("");
127 }while (true);
128 return Ret;
129 }
130 }
131

```


7 – Order

```
3 public class Order {
4     private int customerID;
5     private int orderID;
6     private Product [] products;
7     private double totalprice;
8
9     public Order(int customerID, int orderID, Product[] products, double totalprice) {
10         this.customerID = customerID;
11         this.orderID = orderID;
12         this.products = products;
13         this.totalprice = totalprice;
14     }
15
16     public Order() {
17     }
18
19
20     public void setCustomerID(int customerID) {
21         this.customerID = Math.abs(a: customerID);
22     }
23
24     public void setOrderID(int orderID) {
25         this.orderID = Math.abs(a: orderID);
26     }
27
28     public void setProducts(Product[] products) {
29         this.products = products;
30     }
31
32     public void setTotalprice(double totalprice) {
33         this.totalprice = Math.abs(a: totalprice);
34     }
35     public void PrintOrderInfo(){
36         System.out.println("Here's your order's summary:");
37         System.out.println("Order ID: " + orderID);
38         System.out.println("Customer ID: " +customerID);
39         System.out.println("Products: ");
40         for (int i =0; i<products.length;i++){
41             System.out.println((i+1)+" - "+products[i].getName()+" $" +products[i].getPrice());
42         }
43     }
44 }
```

8 – EcommerceSystem

```
2 |
3 | import java.util.Scanner;
4 | public class ECommerceSystem {
5 |     public static void main(String[] args) {
6 |         Scanner user = new Scanner(System.in);
7 |
8 |         ElectronicProduct E1=new ElectronicProduct();
9 |         ElectronicProduct E2=new ElectronicProduct();
10 |         BookProduct B1=new BookProduct();
11 |         ClothingProduct C1=new ClothingProduct();
12 |         ClothingProduct C2=new ClothingProduct();
13 |
14 |         E1.setName(name: "Samsung Smartphone");
15 |         E1.setProductID(productID: 1);
16 |         E1.setPrice(price: 599.9);
17 |         E1.setBrand(brand: "Samsung");
18 |         E1.setWarrantyPeriod(warrantyPeriod: 1);
19 |
20 |         E2.setName(name: "iphone");
21 |         E2.setProductID(productID: 4);
22 |         E2.setPrice(price: 999.9);
23 |         E2.setBrand(brand: "Apple" );
24 |         E2.setWarrantyPeriod(warrantyPeriod: 1);
25 |
26 |         B1.setName(name: "OOP Book");
27 |         B1.setProductID(productID: 3);
28 |         B1.setPrice(price: 39.99);
29 |         B1.setAuthor(author: "O'Reilly");
30 |
31 |
32 |         C1.setName(name: "T-shirt");
33 |         C1.setProductID(productID: 2);
34 |         C1.setPrice(price: 19.99);
35 |         C1.setFabric(fabric: "Cotton");
36 |         C1.setSize(size: "Medium");
37 |
38 |         C2.setName(name: "Jacket");
39 |         C2.setProductID(productID: 5);
40 |         C2.setPrice(price: 59.99);
41 |         C2.setFabric(fabric: "Wool");
42 |         C2.setSize(size: "Large");
43 |
44 |
45 |
```

```

45
46 Customer cust=new Customer();
47 System.out.println("Welcome to the E-Commerce System!");
48 System.out.println("Please Enter your ID");
49 cust.setCustomerID(customerID: user.nextInt());
50 System.out.println("Please Enter your Name");
51 cust.setName(name: user.nextLine());
52 cust.setName(name: user.nextLine());
53 System.out.println("Please Enter your Address");
54 cust.setAddress(address: user.nextLine());
55 System.out.println("Hello " +cust.getName());
56 System.out.println("");
57 System.out.println("");
58 System.out.println("How many products you want to add to your cart");
59 int NumOfProds =user.nextInt();
60 Cart cart1 = new Cart(customerID: cust.getCustomerID(), nProducts: NumOfProds);
61 int i =0;
62 while (i<cart1.getProducts().length){
63     System.out.println("");
64     System.out.println("");
65     System.out.println("Which product would you like to add?");
66     System.out.println("1- "+E1.getName()+" Price: "+E1.getPrice()+"$");
67     System.out.println("2- "+E2.getName()+" Price: "+E2.getPrice()+"$");
68     System.out.println("3- "+B1.getName()+" Price: "+B1.getPrice()+"$");
69     System.out.println("4- "+C1.getName()+" Price: "+C1.getPrice()+"$");
70     System.out.println("5- "+C2.getName()+" Price: "+C2.getPrice()+"$");
71     int choice = user.nextInt();
    switch (choice){

```

```

73         switch (choice){
74             case 1 :
75                 cart1.addProduct(x:E1, a:i);
76                 i++;
77                 break;
78             case 2 :
79                 cart1.addProduct(x:E2, a:i);
80                 i++;
81                 break;
82             case 3 :
83                 cart1.addProduct(x:B1, a:i);
84                 i++;
85                 break;
86             case 4 :
87                 cart1.addProduct(x:C1, a:i);
88                 i++;
89                 break;
90             case 5 :
91                 cart1.addProduct(x:C2, a:i);
92                 i++;
93                 break;
94             default:
95                 System.out.println(x: "Invaild input");
96                 break;
97         }
98     }
99     boolean info = cart1.placeOrder();
100     if (info ==true){
101         Order order =new Order(customerID: cust.getCustomerID(), orderID:100, products: cart1.getProducts(),totalprice: cart1.calculatePrice());
102         order.PrintOrderInfo();
103     }
104 }
105 }
106

```

Output :

Welcome to the E-Commerce System!

Please Enter your ID

23011568

Please Enter your Name

Mohanad Khaled Elsayed

Please Enter your Address

Alexandria

Hello Mohanad Khaled Elsayed

How many products you want to add to your cart

4

Which product would you like to add?

1- Samsung Smartphone Price: 599.9\$

2- iphone Price: 999.9\$

3- OOP Book Price: 39.99\$

4- T-shirt Price: 19.99\$

5- Jacket Price: 59.99\$

1

Which product would you like to add?

1- Samsung Smartphone Price: 599.9\$

2- iphone Price: 999.9\$

3- OOP Book Price: 39.99\$

4- T-shirt Price: 19.99\$
5- Jacket Price: 59.99\$
2

Which product would you like to add?

1- Samsung Smartphone Price: 599.9\$
2- iphone Price: 999.9\$
3- OOP Book Price: 39.99\$
4- T-shirt Price: 19.99\$
5- Jacket Price: 59.99\$
3

Which product would you like to add?

1- Samsung Smartphone Price: 599.9\$
2- iphone Price: 999.9\$
3- OOP Book Price: 39.99\$
4- T-shirt Price: 19.99\$
5- Jacket Price: 59.99\$
4

your total is 1659.78\$ Would you like to place the order?

1- Yes
2- No
1

Here's your order's summary:

Order ID: 100

Customer ID: 23011568

Products:

1 - Samsung Smartphone \$599.9
2 - iphone \$999.9
3 - OOP Book \$39.99
4 - T-shirt \$19.99

BUILD SUCCESSFUL (total time: 37 seconds)