```
package e_commerce_system;
public class Product {
  protected int productId;
  protected String name;
  protected float price;
   public int getProductId() {
    return Math.abs(a: productId);
   public void setProductId(int productId) {
    this.productId =productId ;
   public String getName() {
      return name;
   public void setName(String name) {
      this.name = name;
   public float getPrice() {
   return Math.abs(a: price);
   public void setPrice(float price) {
      this.price = price;
   public Product(int productId, String name, float price) {
       this.productId =productId ;
       this.name = name;
       this.price =price;
    public Product() {
   }
```

```
package e_commerce_system;
  public class ElectronicProduct extends Product {
    private String brand;
    private int warrantyPeriod;
    public String getBrand() {
       return brand;
Ę
     public void setBrand (String brand) {
       this.brand = brand;
Ę
     public int getWarrantyPeriod() {
       return Math.abs(a: warrantyPeriod);
      public void setWarrantyPeriod(int warrantyPeriod) {
Ę
       this.warrantyPeriod = warrantyPeriod;
P
      public int getProductId() {
       return productId:
Ę
     public void setProductId(int productId) {
       this.productId = productId;
     public String getName() {
         return name;
      public void setName(String name) {
       this.name = name;
Ξ
      public float getPrice() {
      return Math.abs(a: price);
Ę
      public void setPrice(float price) {
       this.price = price;
     public ElectronicProduct(int productId, String name, float price) {
        super(productId, name, price);
      public ElectronicProduct(String brand, int warrantyPeriod, int productId, String name, float price) [
         super(productId, name, price);
         this.brand = brand;
         this.warrantyPeriod =warrantyPeriod;
```

```
package e_commerce_system;
3
      public class ClothingProduct extends Product {
4
         private String size;
5
         private String fabric;
6
7
   曱
         public String getSize() {
            return size;
9
   豆
10
         public void setSize(String size) {
11
           this.size = size;
12
13
   早
         public String getFabric() {
14
            return fabric;
15
16 📮
         public void setFabric(String fabric) {
17
         this.fabric = fabric;
18
}.∓
   曱
         public int getProductId() {
         return productId;
20
21
Δŧ
   阜
         public void setProductId(int productId) {
23
           this.productId = productId;
24
∆↓ 👨
         public String getName() {
           return name;
27
↓↓ 🖯
         public void setName(String name) {
            this.name = name;
29
30
   早
∆∓
         public float getPrice() {
32
            return Math.abs(a: price);
   Ģ
<u>\</u>
         public void setPrice(float price) {
            this.price = price;
35
36
37
   豆
         public ClothingProduct(String size, String fabric, int productId, String name, float price) {
           super(productId, name, price);
38
39
             this.size = size;
             this.fabric = fabric;
40
41
42 --
         public ClothingProduct(int productId, String name, float price) {
43
            super(productId, name, price);
45
```

```
package e_commerce_system;
3
     public class BookProduct extends Product {
         private String author;
4
         private String publisher;
6
7
   曱
         public String getAuthor() {
8
             return author;
9
10 👨
         public void setAuthor(String author) {
11
          this.author = author;
12
13 📮
         public String getPublisher() {
14
           return publisher;
1.5
16 📮
         public void setPublisher(String publisher) {
17
           this.publisher = publisher;
18
Mi P
         public int getProductId() {
20
           return productId;
21
}. ₽
         public void setProductId(int productId) {
23
           this.productId = productId;
24
}. 🗜
         public String getName() {
           return name;
26
27
         public void setName(String name) {
À∮ ₽
29
            this.name = name;
30
}.↓ P
         public float getPrice() {
          return Math.abs(a: price);
32
33
\. 🗜
         public void setPrice(float price) {
            this.price = price;
36
37
   早
         public BookProduct(String author, String publisher, int productId, String name, float price) {
38
            super(productId, name, price);
39
             this.author = author;
            this.publisher = publisher;
40
41
42 -
         public BookProduct(int productId, String name, float price) {
43
             super(productId, name, price);
45
```

```
2
    package e_commerce_system;
    public class Customer {
3
4
5
        private int customerId;
6
         private String name ;
7
         private String address;
8
9
         public int getCustomerId() {
10
           return Math.abs(a: customerId);
11
12
13 📮
         public void setCustomerId(int customerId) {
         this.customerId = customerId;
14
15
16
17 👨
         public String getName() {
18
         return name;
19
20
21 📮
         public void setName(String name) {
22
         this.name = name;
23
24
         public String getAddress() {
25 📮
26
         return address;
27
28
29 📮
         public void setAddress(String address) {
30
           this.address = address;
31
32
33 📮
         public Customer() {
34
         }
35
36 📮
        public Customer(int customerId, String name, String address) {
             this.customerId =customerId;
37
38
             this.name = name;
             this.address = address;
39
40
41
     }
42
```

```
package e_commerce_system;
       public class Cart {
3
          private int CustomeerID;
 4
          private int nProducts;
          private Product[]products;
 6
8
   무
           public int getCustomeerID() {
             return Math. abs ( a: CustomeerID);
10
   早
           public void setCustomeerID (int CustomeerID) {
11
12
             this.CustomeerID = CustomeerID;
1.3
    무
14
           public int getnProducts() {
15
             return Math. abs (s:nProducts);
16
   早
17
           public void setnProducts(int nProducts) {
             this.nProducts = nProducts;
18
19
20
    早
           public Product[] getProducts() {
21
              return products;
22
    무
23
           public void setProducts(Product[] products) {
24
             this.products = products;
25
    무
26
           public Cart() {
27
    무
           public Cart (int CustomeerID, int nProducts) {
28
29
              this.CustomeerID = (CustomeerID);
               this.nProducts = (nProducts);
30
31
              this.products =new Product [nProducts];
32
           public void addProduct(Product product, int index) {
33
34
             if(index>=0 && index < products.length){
35
                 products[index]=product;
36
37
           public void removeProduct(int index){
   早
38
39
             if(index>=0 && index < products.length){
40
                 products[index]=null;
41
42
           public void placeOrder(){
4.3
44
              Order order=new Order(costomerid: CustomeerID,orderid: 1,products,totalPrice: calculatePrice());
              order.printOrderinfo();
45
46
47
    무
          public float calculatePrice(){
48
             float totalPrice = 0.0f:
              for (Product product :products) {
                  if (product != null) {
50
51
                      totalPrice += product.getPrice();
52
5.3
54
               return totalPrice;
55
       }
```

```
package e_commerce_system;
        public class Order {
           private int customerId;
            private int orderId;
           private Product[]products;
            private float totalPrice;
           public int getCustomerId() {
              return Math.abs(s:customerId);
 10
           public void setCustomerId(int customerId) {
 11
 12
             this.customerId = customerId;
 1.3
     무
           public int getOrderId() {
 1.4
 15
               return Math.abs(s:orderId);
 16
     무
 17
            public void setOrderId(int orderId) {
              this.orderId = orderId;
 18
 19
 20
     무
           public Product[] getProducts() {
 21
               return products;
 22
 23
           public void setProducts(Product[] products) {
              this.products = products;
 24
 25
     무
           public float getTotalPrice() {
 26
 27
               return Math. abs ( :: totalPrice);
 28
    무
 29
           public void setTotalPrice(float totalPrice) {
               this.totalPrice = totalPrice;
 30
 31
     早
           public Order(int customerId, int orderId, Product[] products, float totalPrice) {
               this.customerId = customerId;
 33
 34
                this.orderId = orderId;
               this.products = products;
 35
                this.totalPrice = totalPrice;
 36
 37
            public Order() {
 38
 39
 40
               public void printOrderinfo(){
               System.out.println("customer Id: "+customerId);
 41
               System.out.println("Order Id: "+orderId);
 43
               System. out.println(x: "Products: ");
 44
                for (Product product:products) {
                   if(product!=null){
 45
 46
                      System.out.println("Name: "+product.getName()+ " price: "+product.getPrice());
 47
                System.out.println("total price: "+calculatetotalPrice());
 48
    무
           private double calculatetotalPrice(){
 50
               double totalPrice = 0;
              for (Product product :products) {
                   if (product != null) {
 53
 54
                       totalPrice += product.getPrice();
                  }}
 55
           return totalPrice; }}
```

```
package e_commerce_system;
3 = import java.util.Scanner;
     public class E_Commerce_System {
        public static void main(String[] args) {
6
             Scanner input = new Scanner(source: System.in);
             System.out.println(x: "welcome to the E-commerce system! ");
8
9
10
             ElectronicProduct E1=new ElectronicProduct(brand: "sumsung", warrantyPeriod: 1, productId: 1, name: "smartphone", price: 599.99f);
11
             ClothingProduct C1=new ClothingProduct(size: "medium", fabric: "cotton", productId: 2, name: "T-shirt", price: 19.99f);
             BookProduct B1=new BookProduct(author: "O'Reilly", publisher: "X Publications , productId: 3, name: "OOP", price: 39.99f);
13
               System.out.print(s: "please enter your ID: ");
14
15
                int customerid=input.nextInt();
16
               System.out.print(s: "please enter your name: ");
17
                String name=input.nextLine();
                input.nextLine();
18
               System.out.print(s: "please enter your addres: ");
19
20
                String address=input.nextLine();
9
             Customer customer=new Customer(customerId: customerid,name,address);
22
               System.out.println(x: "How many products do you want to add to your cart?");
23
24
                int numOfProduct=input.nextInt();
25
             Cart r1=new Cart(CustomeerID: customerid,nProducts:numOfProduct);
             int productID=0;
   for(int i=0;i<numOfProduct;i++){
28
        System.out.println(x: "which product would you like to add? 1-smartphone 2-T-shirt 3-OOP");
29
               productID=input.nextInt();
  8
               switch (productID) {
 32
                    case 1:
 33
                        r1.addProduct(product: E1, index: i);
                        break:
 34
 35
                     case 2:
                        r1.addProduct(product: C1, index: i);
 36
 37
                        break:
 38
                    case 3:
 39
                        r1.addProduct(product: B1, index: i);
 40
 41
                    default:
 42
                          System.out.println(x: "invalid Product ID");
 43
 44
                    System.out.print("your total is: "+r1.calculatePrice()+"$");
 45
                    System.out.println(x: "would you like to place the order? 1-yes 2-No");
 46
 47
                          int yourAnswer=input.nextInt();
 48
                          if(yourAnswer==1) {
 49
                              System.out.println(x: "Here's your order summary:");
 50
                              r1.placeOrder();
 51
 52
 53
 54
                          else{
 55
                               System.out.println(x: "thank you ");
                      r1.removeProduct(index:productID);
 56
 57
 58
```

Output:

```
>
   run:
   welcome to the E-commerce system!
   please enter your ID: 23011611
  please enter your name: yassmin ashraf
  please enter your addres: alex
   How many products do you want to add to your cart?
   which product would you like to add? 1-smartphone 2-T-shirt 3-00P
   which product would you like to add? 1-smartphone 2-T-shirt 3-00P
   which product would you like to add? 1-smartphone 2-T-shirt 3-00P
   which product would you like to add? 1-smartphone 2-T-shirt 3-00P
   your total is: 679.95996$would you like to place the order? 1-yes 2-No
   Here's your order summary:
   customer Id: 23011611
   Order Id: 1
   Products:
   Name: T-shirt price:19.99
   Name: OOP price:39.99
   Name: T-shirt price:19.99
   Name: smartphone price:599.99
   total price: 679.9599914550781
   BUILD SUCCESSFUL (total time: 18 seconds)
```