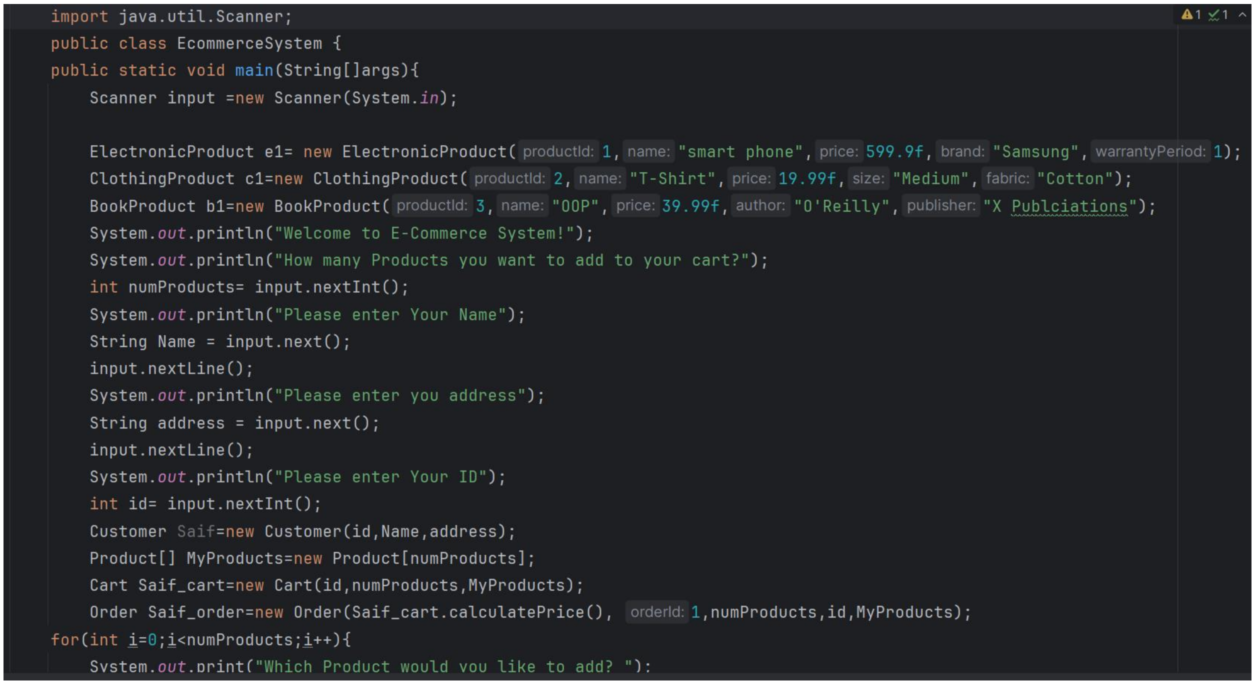
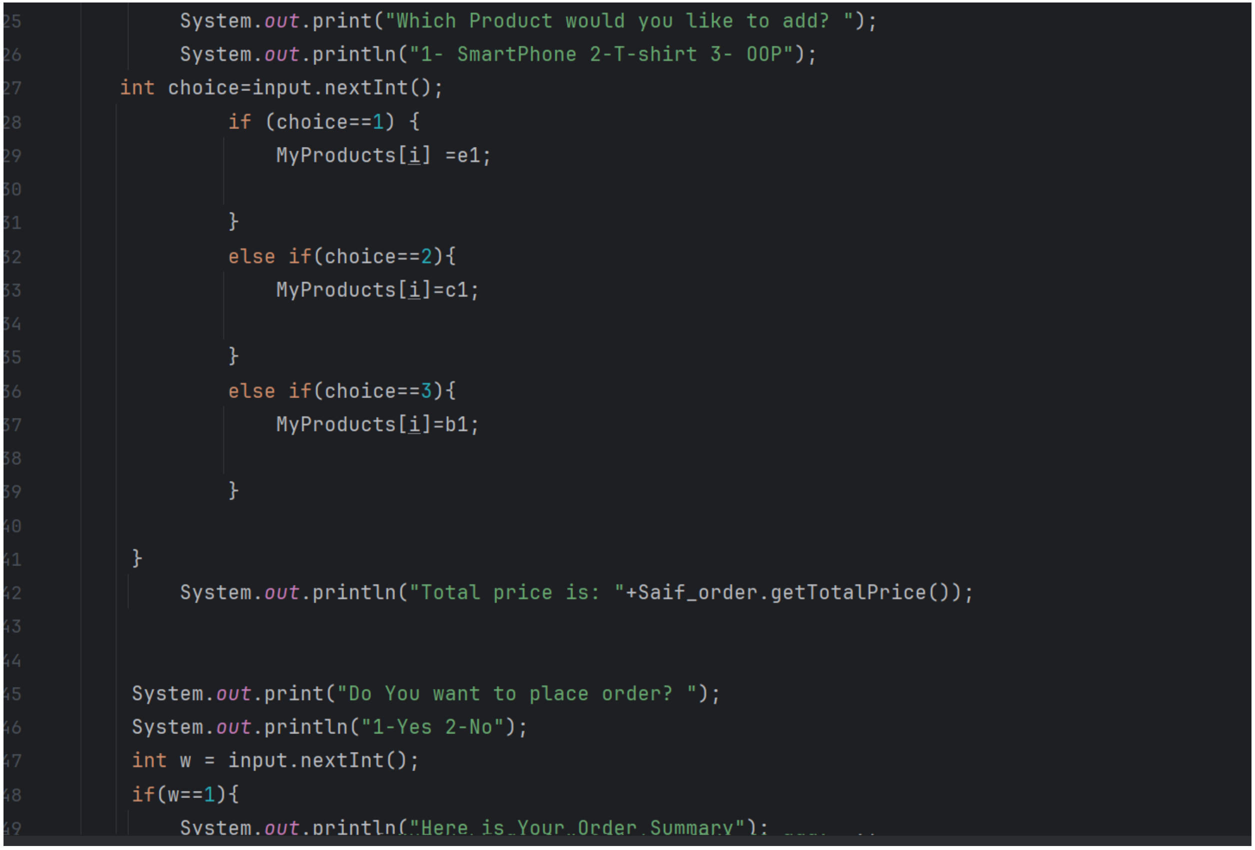
Name : سيف ممدوح حسن مصطفى حجازي                                                                                      ID: 23011087

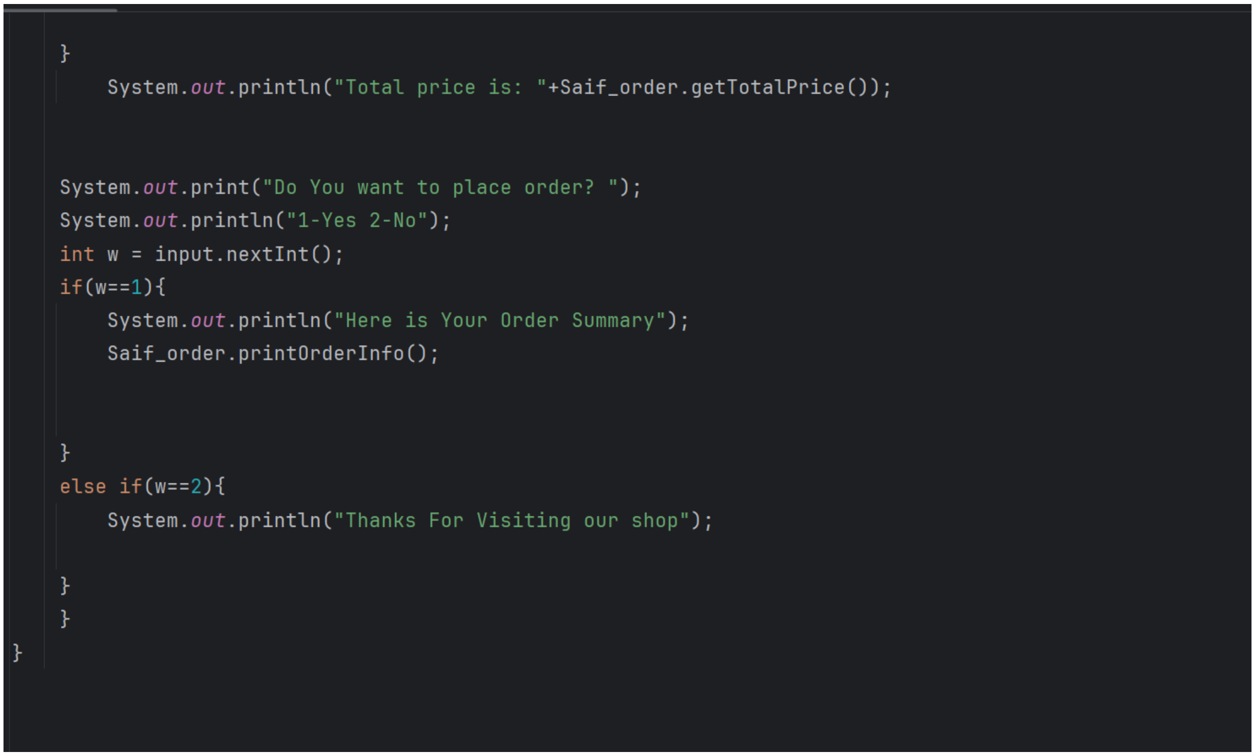
Ecommerce System:



```
import java.util.Scanner;
public class EcommerceSystem {
public static void main(String[]args){
    Scanner input =new Scanner(System.in);

    ElectronicProduct e1= new ElectronicProduct(productId: 1, name: "smart phone", price: 599.9f, brand: "Samsung", warrantyPeriod: 1);
    ClothingProduct c1=new ClothingProduct(productId: 2, name: "T-Shirt", price: 19.99f, size: "Medium", fabric: "Cotton");
    BookProduct b1=new BookProduct(productId: 3, name: "OOP", price: 39.99f, author: "O'Reilly", publisher: "X Publciations");
    System.out.println("Welcome to E-Commerce System!");
    System.out.println("How many Products you want to add to your cart?");
    int numProducts= input.nextInt();
    System.out.println("Please enter Your Name");
    String Name = input.next();
    input.nextLine();
    System.out.println("Please enter you address");
    String address = input.next();
    input.nextLine();
    System.out.println("Please enter Your ID");
    int id= input.nextInt();
    Customer Saif=new Customer(id,Name,address);
    Product[] MyProducts=new Product[numProducts];
    Cart Saif_cart=new Cart(id,numProducts,MyProducts);
    Order Saif_order=new Order(Saif_cart.calculatePrice(), orderId: 1,numProducts,id,MyProducts);
for(int i=0;i<numProducts;i++){
    System.out.print("Which Product would you like to add? ");
```

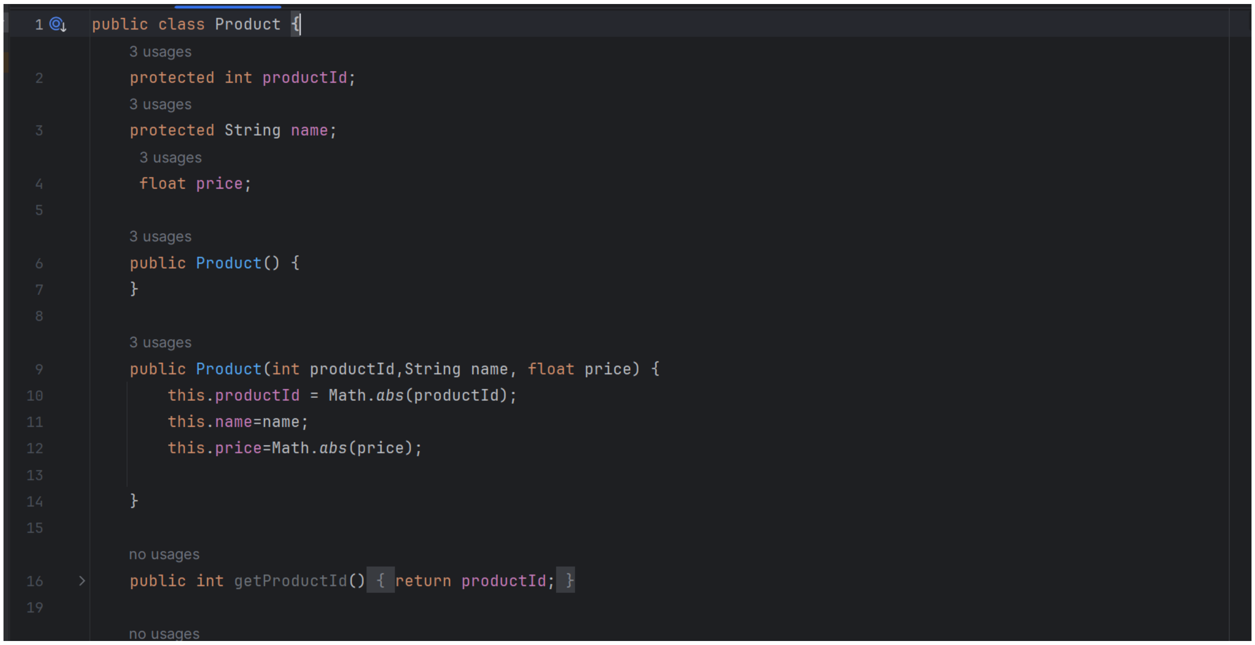


```
     System.out.print("Which Product would you like to add? ");
     System.out.println("1- SmartPhone 2-T-shirt 3- OOP");
int choice=input.nextInt();
         if (choice==1) {
             MyProducts[i] =e1;

         }
         else if(choice==2){
             MyProducts[i]=c1;

         }
         else if(choice==3){
             MyProducts[i]=b1;

         }

 }
     System.out.println("Total price is: "+Saif_order.getTotalPrice());


 System.out.print("Do You want to place order? ");
 System.out.println("1-Yes 2-No");
 int w = input.nextInt();
 if(w==1){
     System.out.println("Here is Your Order Summary");
```

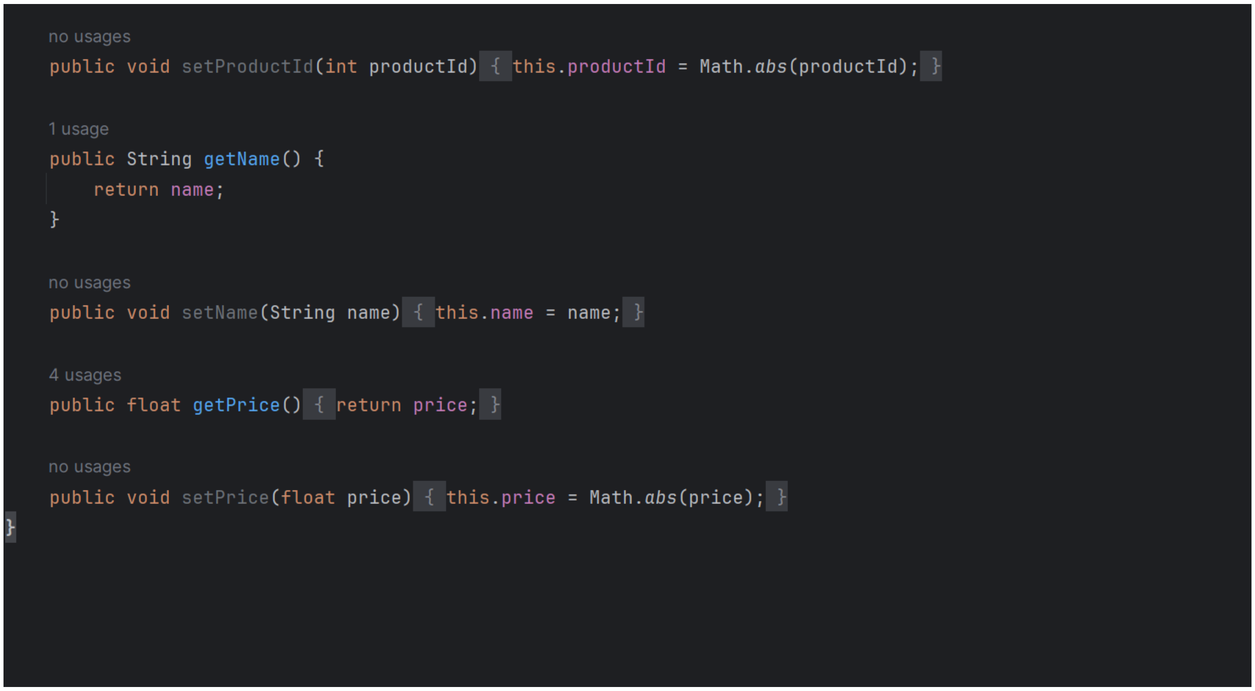


```
    }
        System.out.println("Total price is: "+Saif_order.getTotalPrice());


    System.out.print("Do You want to place order? ");
    System.out.println("1-Yes 2-No");
    int w = input.nextInt();
    if(w==1){
        System.out.println("Here is Your Order Summary");
        Saif_order.printOrderInfo();


    }
    else if(w==2){
        System.out.println("Thanks For Visiting our shop");

    }
    }
}
```

Product:

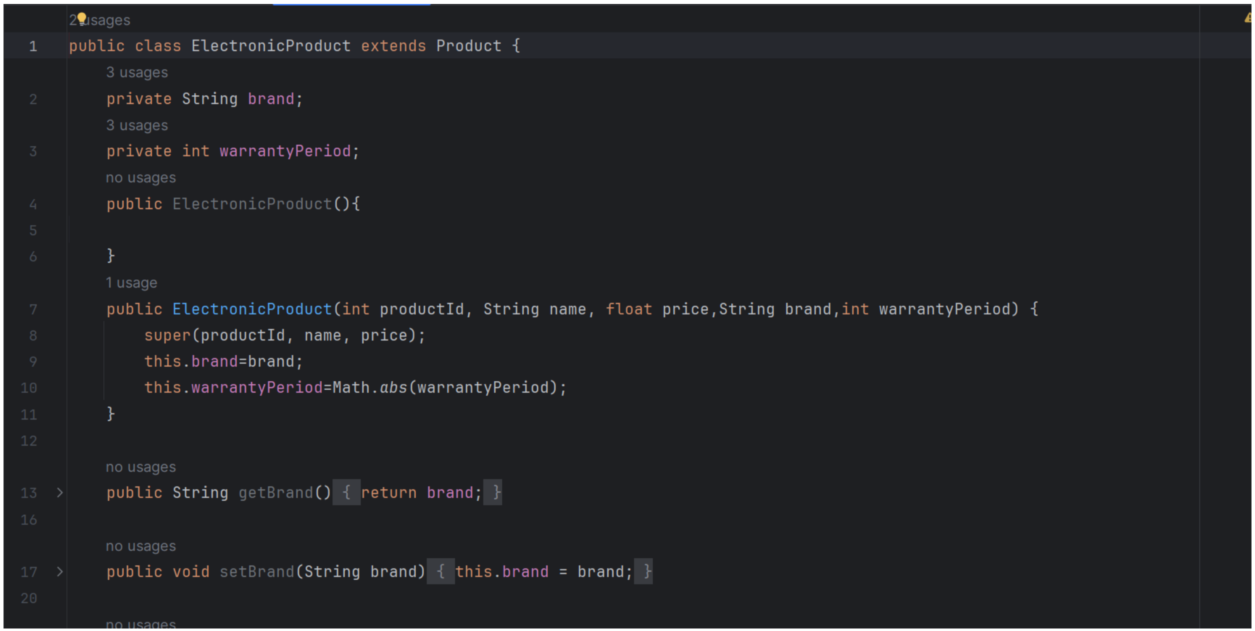


```
public class Product {
    3 usages
    protected int productId;
    3 usages
    protected String name;
     3 usages
     float price;

    3 usages
    public Product() {
    }

    3 usages
    public Product(int productId,String name, float price) {
        this.productId = Math.abs(productId);
        this.name=name;
        this.price=Math.abs(price);

    }

    no usages
    public int getProductId() { return productId; }

    no usages
```

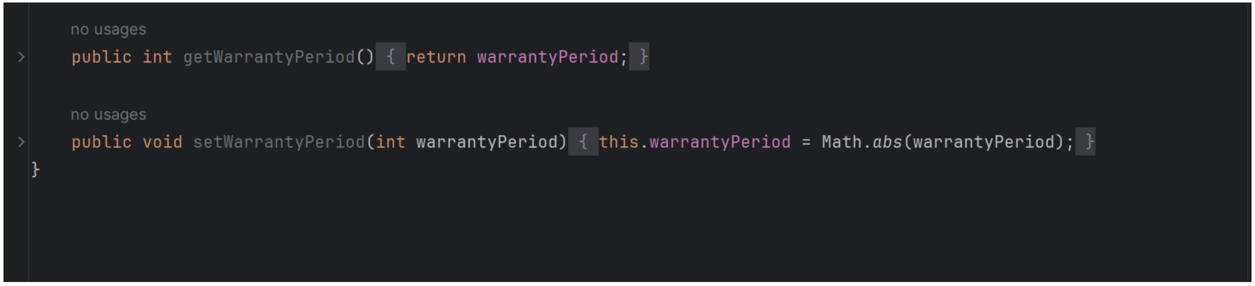


```
    no usages
    public void setProductId(int productId) { this.productId = Math.abs(productId); }

    1 usage
    public String getName() {
        return name;
    }

    no usages
    public void setName(String name) { this.name = name; }

    4 usages
    public float getPrice() { return price; }

    no usages
    public void setPrice(float price) { this.price = Math.abs(price); }
}
```

Electronic Product :

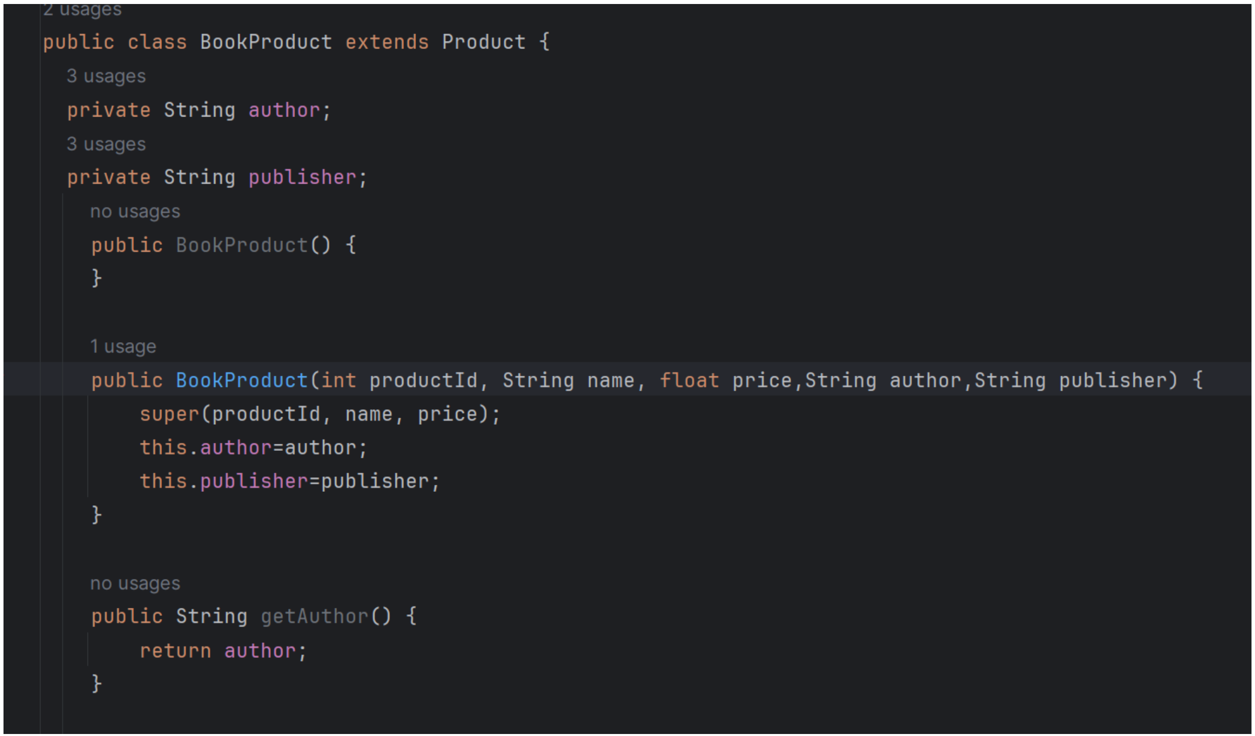


```
2 usages
public class ElectronicProduct extends Product {
    3 usages
    private String brand;
    3 usages
    private int warrantyPeriod;
    no usages
    public ElectronicProduct(){

    }
    1 usage
    public ElectronicProduct(int productId, String name, float price,String brand,int warrantyPeriod) {
        super(productId, name, price);
        this.brand=brand;
        this.warrantyPeriod=Math.abs(warrantyPeriod);
    }

    no usages
    public String getBrand() { return brand; }

    no usages
    public void setBrand(String brand) { this.brand = brand; }

    no usages
```

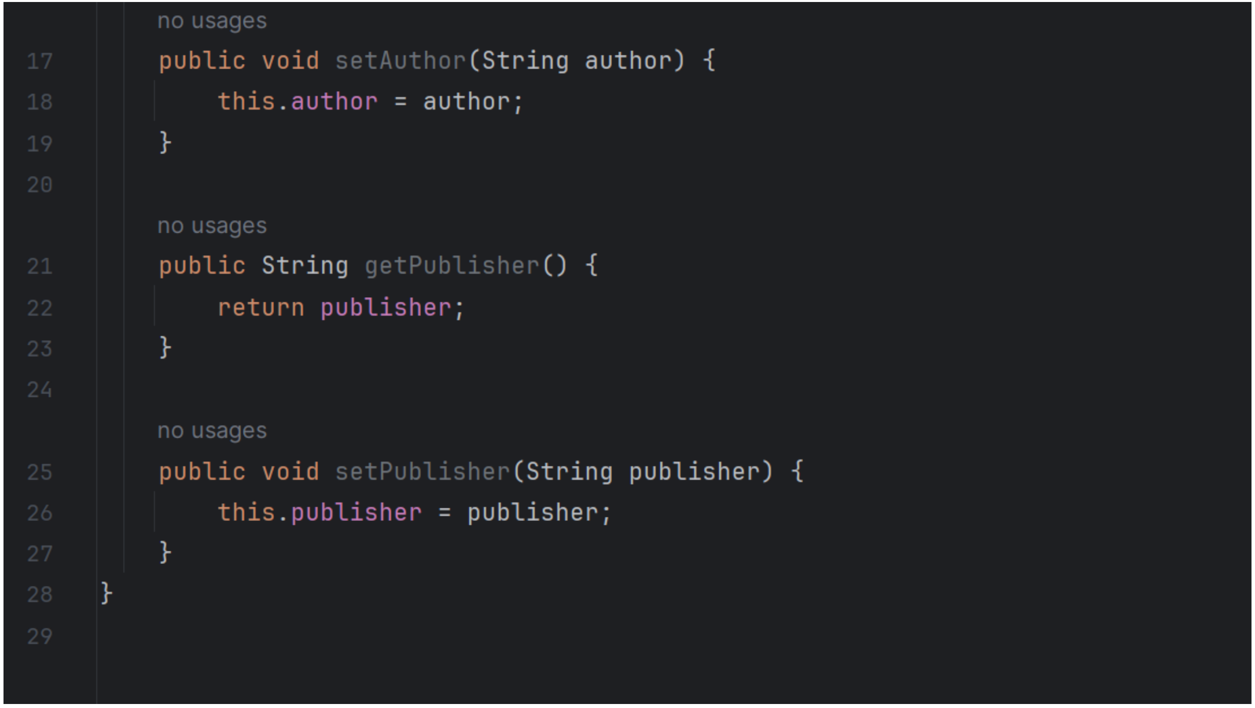


```
    no usages
    public int getWarrantyPeriod() { return warrantyPeriod; }

    no usages
    public void setWarrantyPeriod(int warrantyPeriod) { this.warrantyPeriod = Math.abs(warrantyPeriod); }
}
```

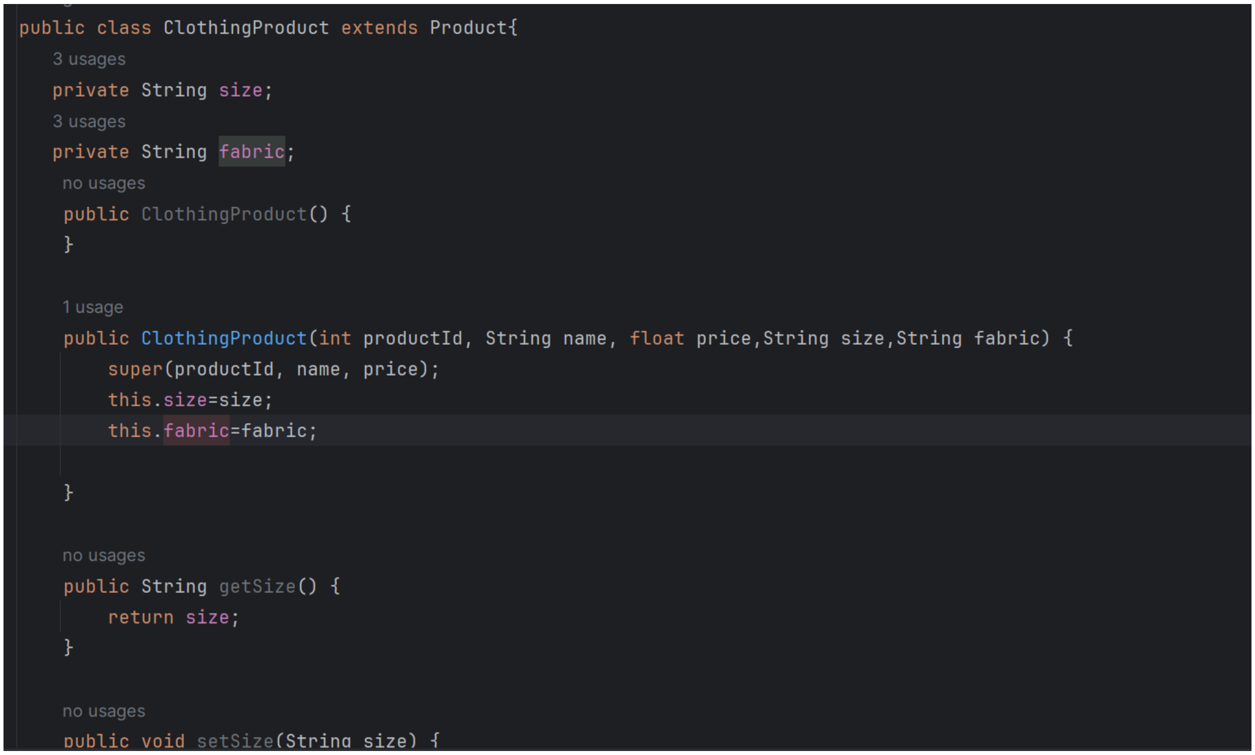
Book Product :



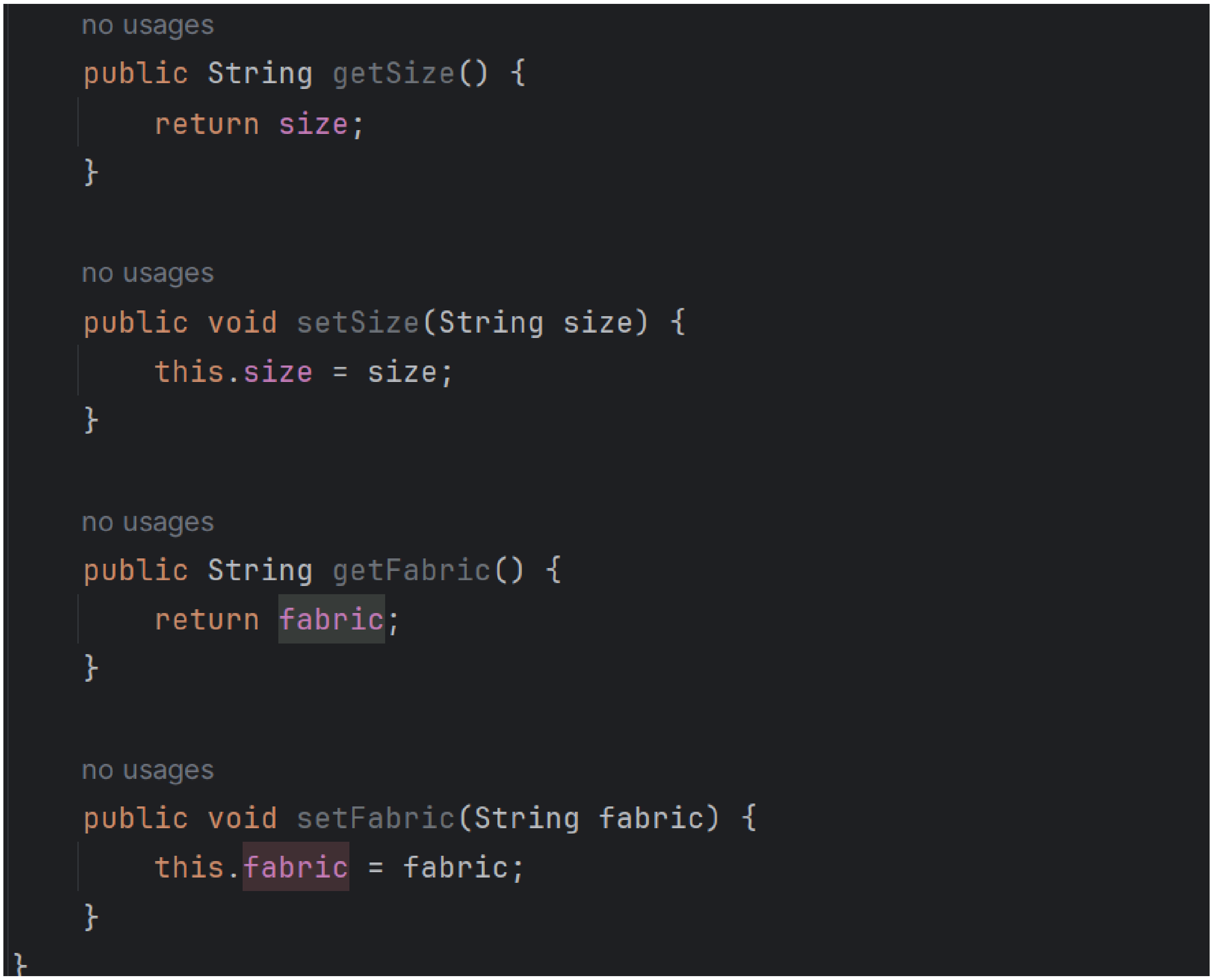
```
2 usages
public class BookProduct extends Product {
    3 usages
    private String author;
    3 usages
    private String publisher;
    no usages
    public BookProduct() {
    }

    1 usage
    public BookProduct(int productId, String name, float price,String author,String publisher) {
        super(productId, name, price);
        this.author=author;
        this.publisher=publisher;
    }

    no usages
    public String getAuthor() {
        return author;
    }
```



```
    no usages
    public void setAuthor(String author) {
        this.author = author;
    }

    no usages
    public String getPublisher() {
        return publisher;
    }

    no usages
    public void setPublisher(String publisher) {
        this.publisher = publisher;
    }
}

```

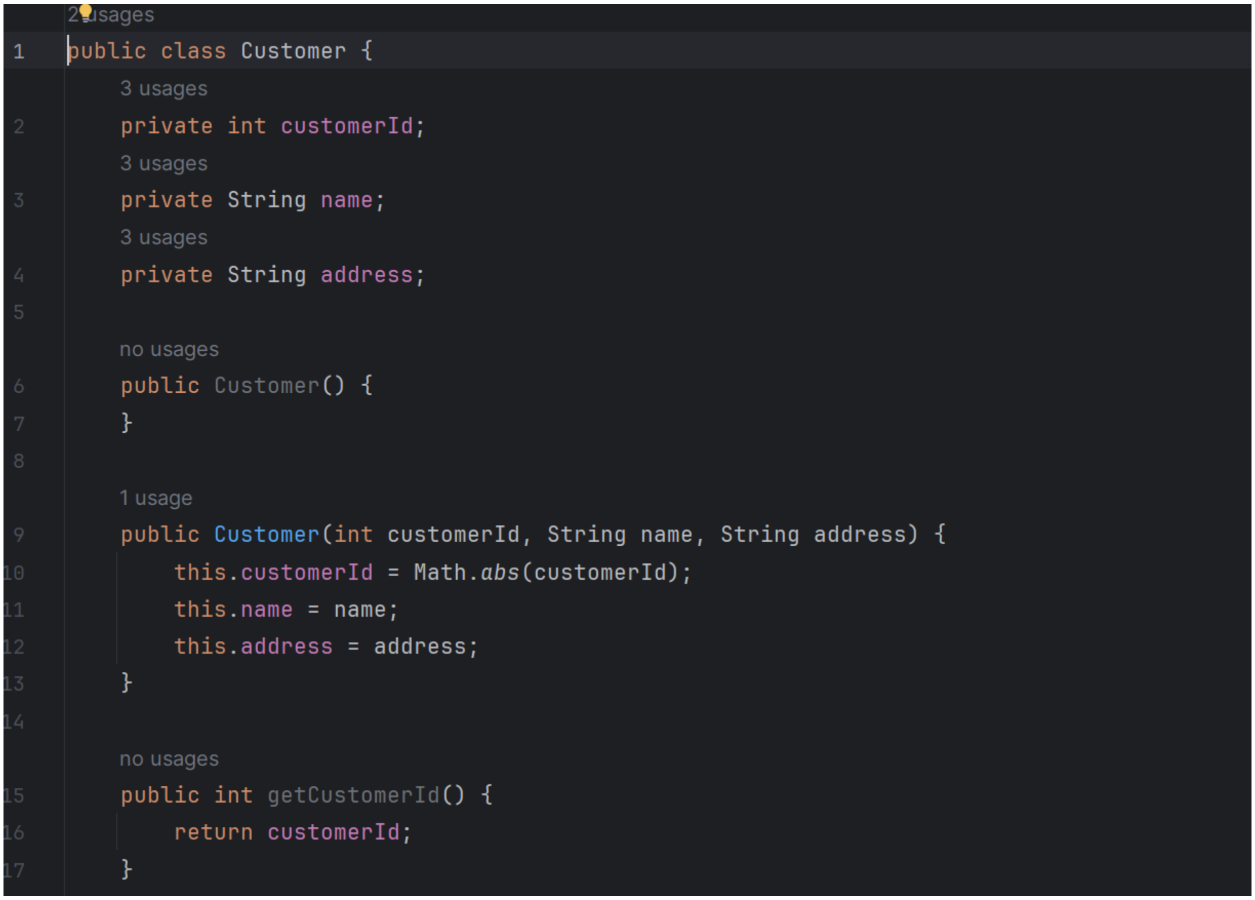


```
public class ClothingProduct extends Product{
    3 usages
    private String size;
    3 usages
    private String fabric;
     no usages
     public ClothingProduct() {
     }

     1 usage
     public ClothingProduct(int productId, String name, float price,String size,String fabric) {
         super(productId, name, price);
         this.size=size;
         this.fabric=fabric;

     }

     no usages
     public String getSize() {
         return size;
     }

     no usages
     public void setSize(String size) {
```

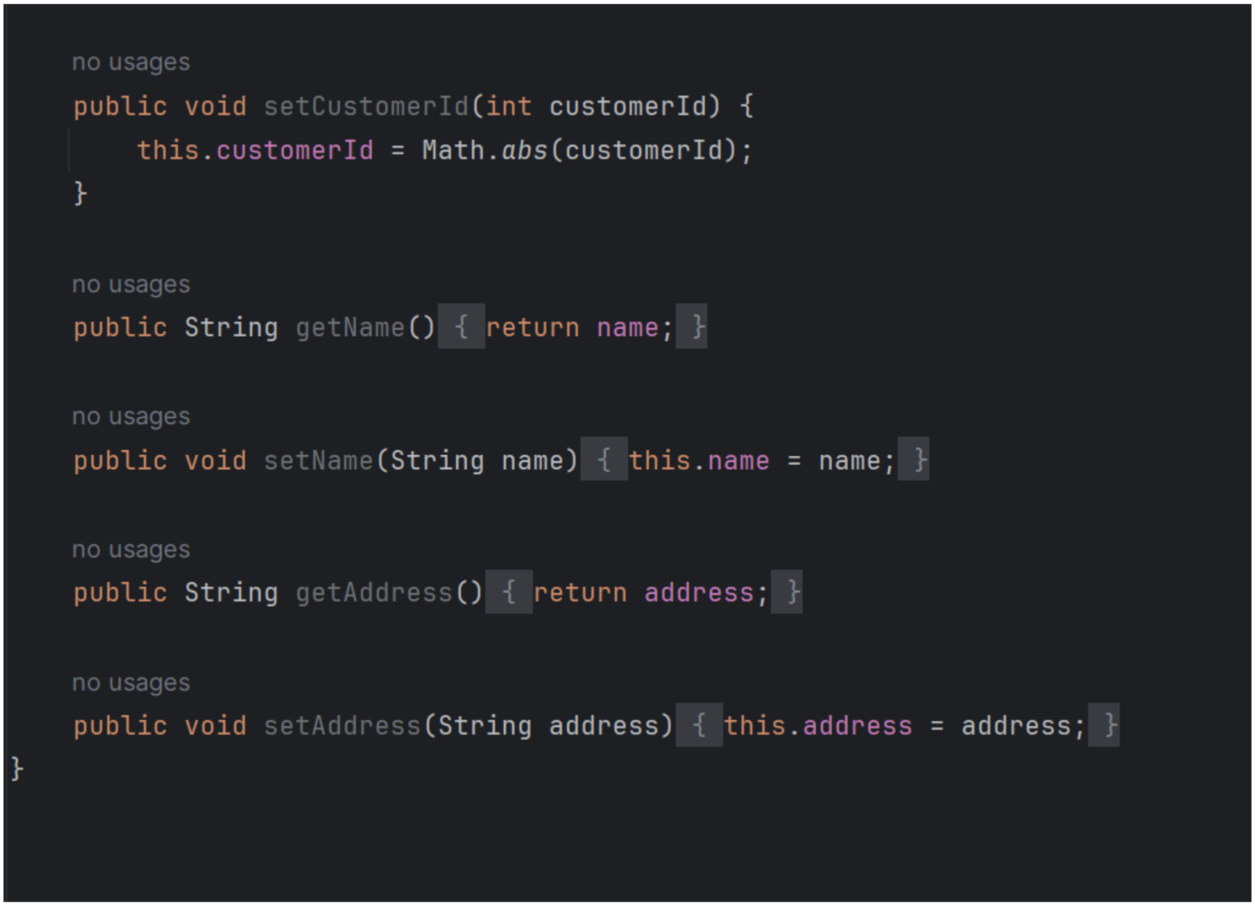


```
    no usages
    public String getSize() {
        return size;
    }

    no usages
    public void setSize(String size) {
        this.size = size;
    }

    no usages
    public String getFabric() {
        return fabric;
    }

    no usages
    public void setFabric(String fabric) {
        this.fabric = fabric;
    }
}
```

Customer:

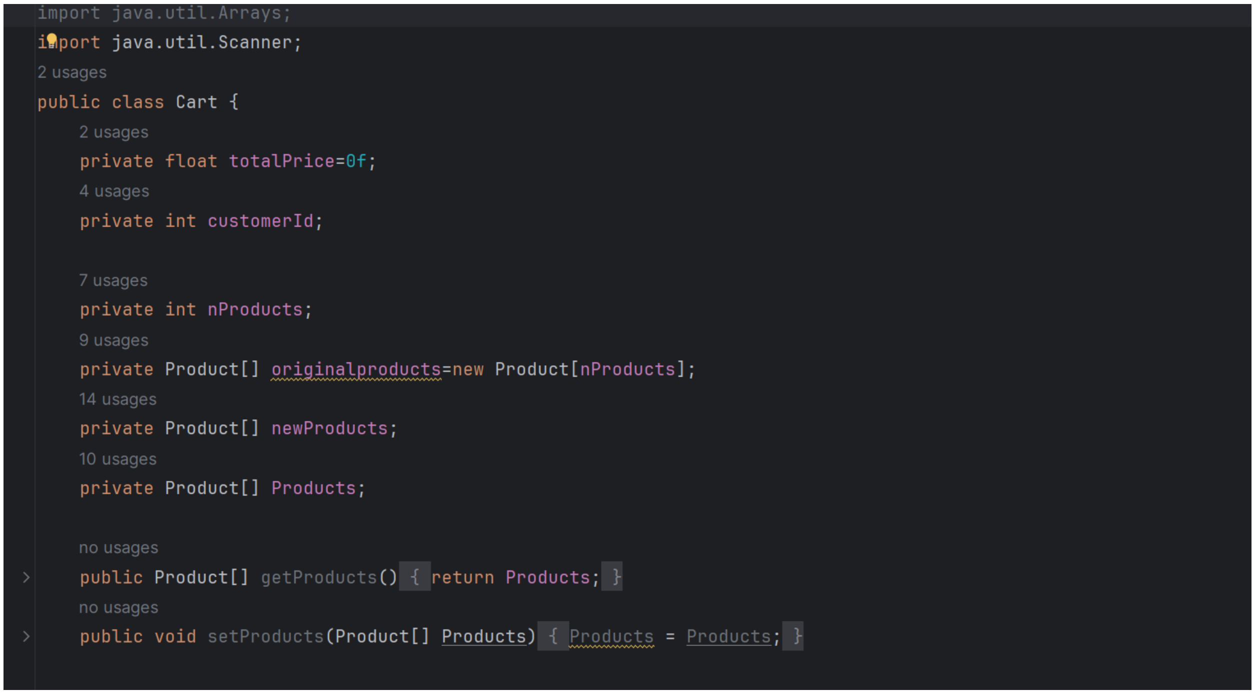


```
2 usages
public class Customer {
    3 usages
    private int customerId;
    3 usages
    private String name;
    3 usages
    private String address;

    no usages
    public Customer() {
    }

    1 usage
    public Customer(int customerId, String name, String address) {
        this.customerId = Math.abs(customerId);
        this.name = name;
        this.address = address;
    }

    no usages
    public int getCustomerId() {
        return customerId;
    }
```

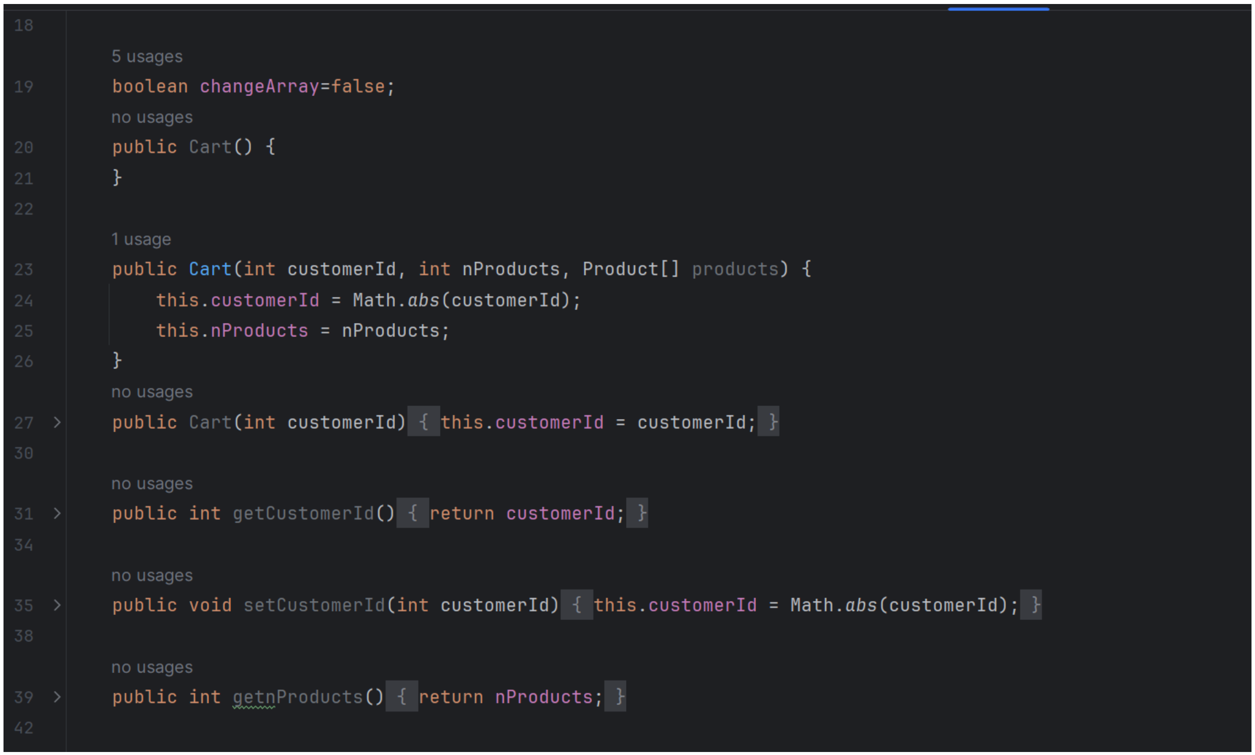


```
    no usages
    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    no usages
    public String getName() { return name; }

    no usages
    public void setName(String name) { this.name = name; }

    no usages
    public String getAddress() { return address; }

    no usages
    public void setAddress(String address) { this.address = address; }
}
```

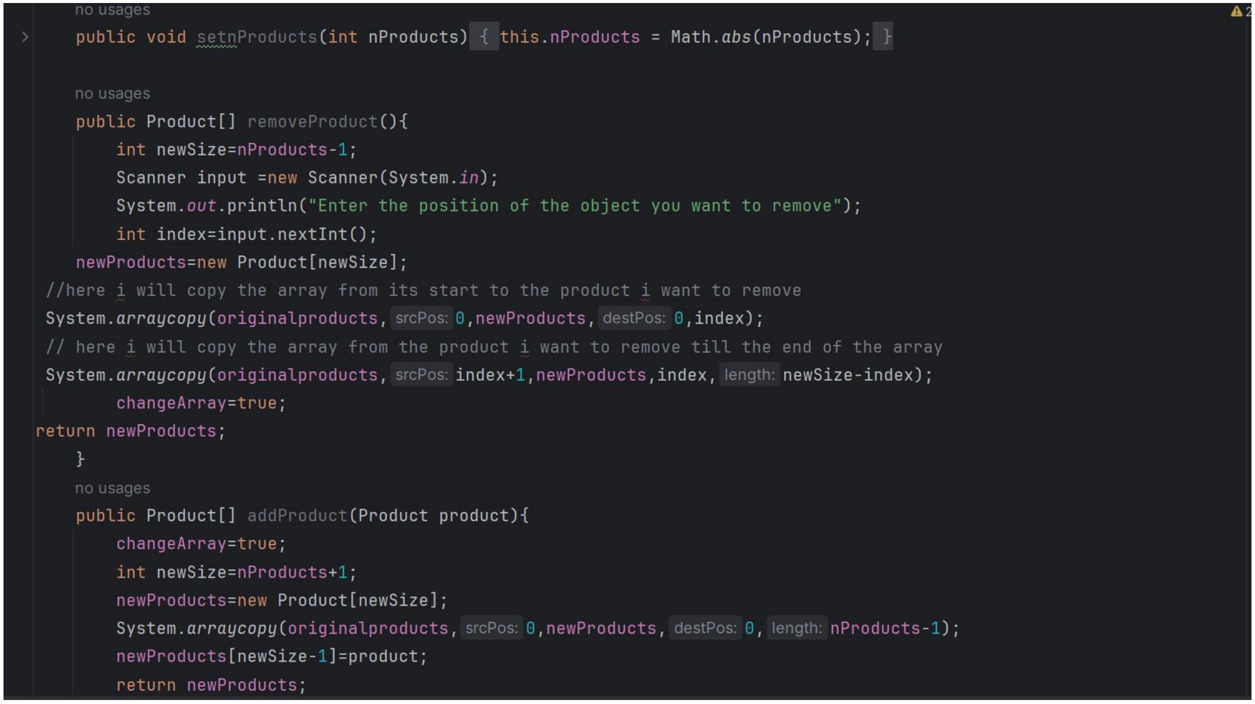
Cart:



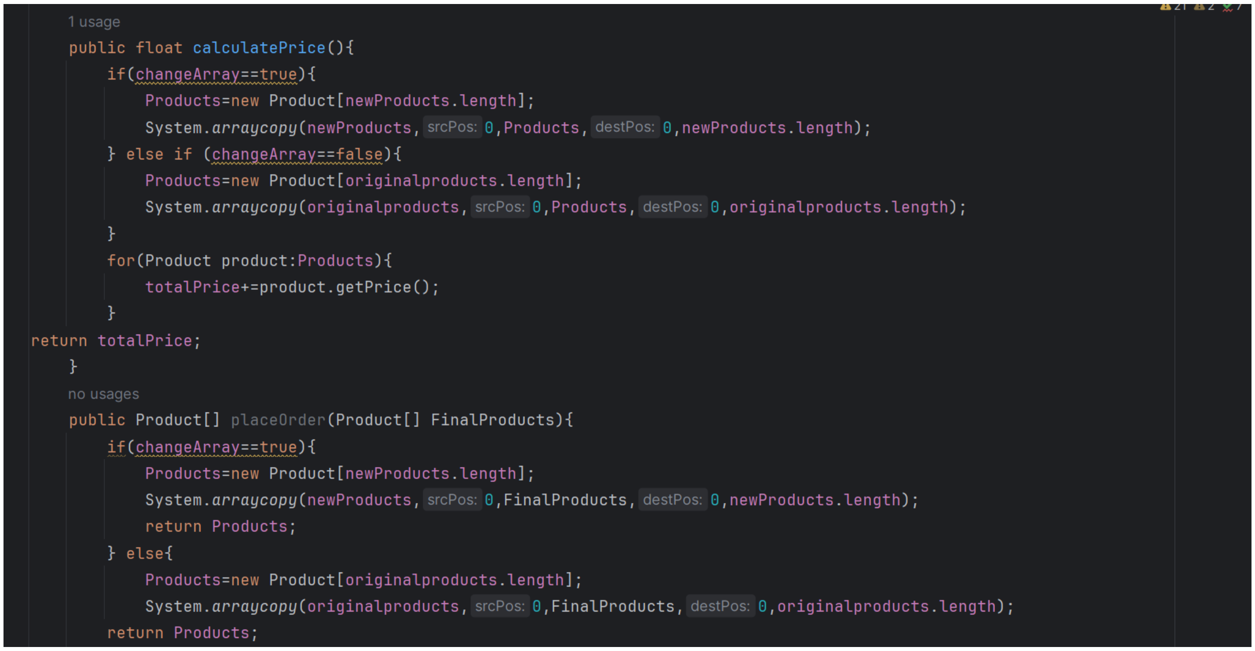
```
import java.util.Arrays;
import java.util.Scanner;
2 usages
public class Cart {
    2 usages
    private float totalPrice=0f;
    4 usages
    private int customerId;

    7 usages
    private int nProducts;
    9 usages
    private Product[] originalproducts=new Product[nProducts];
    14 usages
    private Product[] newProducts;
    10 usages
    private Product[] Products;

    no usages
    public Product[] getProducts() { return Products; }
    no usages
    public void setProducts(Product[] Products) { Products = Products; }
```



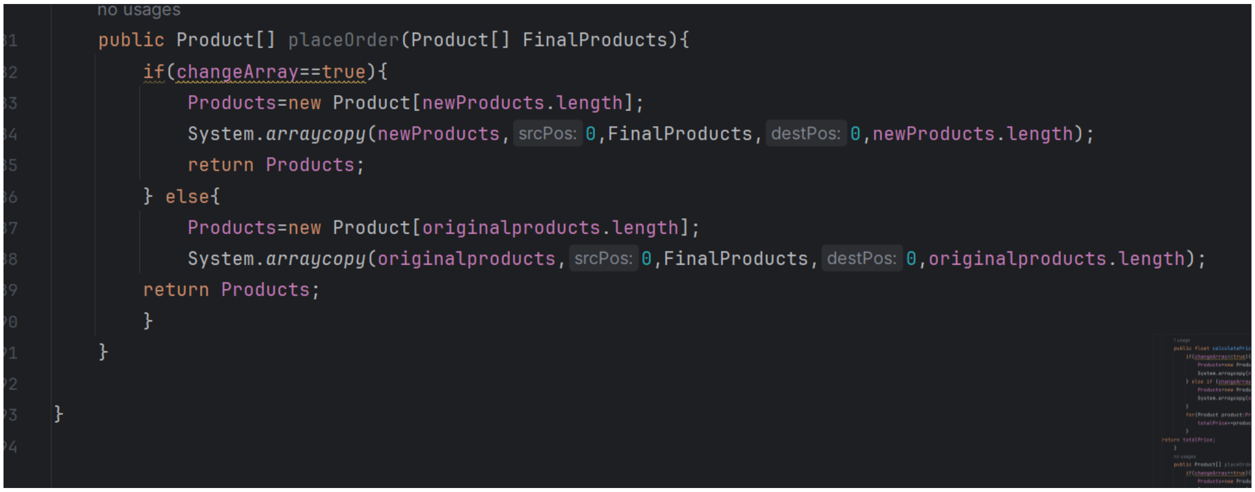
```
    5 usages
    boolean changeArray=false;
    no usages
    public Cart() {
    }

    1 usage
    public Cart(int customerId, int nProducts, Product[] products) {
        this.customerId = Math.abs(customerId);
        this.nProducts = nProducts;
    }
    no usages
    public Cart(int customerId) { this.customerId = customerId; }

    no usages
    public int getCustomerId() { return customerId; }

    no usages
    public void setCustomerId(int customerId) { this.customerId = Math.abs(customerId); }

    no usages
    public int getnProducts() { return nProducts; }

```



```
    no usages
    public void setnProducts(int nProducts) { this.nProducts = Math.abs(nProducts); }

    no usages
    public Product[] removeProduct(){
        int newSize=nProducts-1;
        Scanner input =new Scanner(System.in);
        System.out.println("Enter the position of the object you want to remove");
        int index=input.nextInt();
    newProducts=new Product[newSize];
 //here i will copy the array from its start to the product i want to remove
 System.arraycopy(originalproducts, srcPos: 0,newProducts, destPos: 0,index);
 // here i will copy the array from the product i want to remove till the end of the array
 System.arraycopy(originalproducts, srcPos: index+1,newProducts,index, length: newSize-index);
        changeArray=true;
return newProducts;
    }
    no usages
    public Product[] addProduct(Product product){
        changeArray=true;
        int newSize=nProducts+1;
        newProducts=new Product[newSize];
        System.arraycopy(originalproducts, srcPos: 0,newProducts, destPos: 0, length: nProducts-1);
        newProducts[newSize-1]=product;
        return newProducts;
```

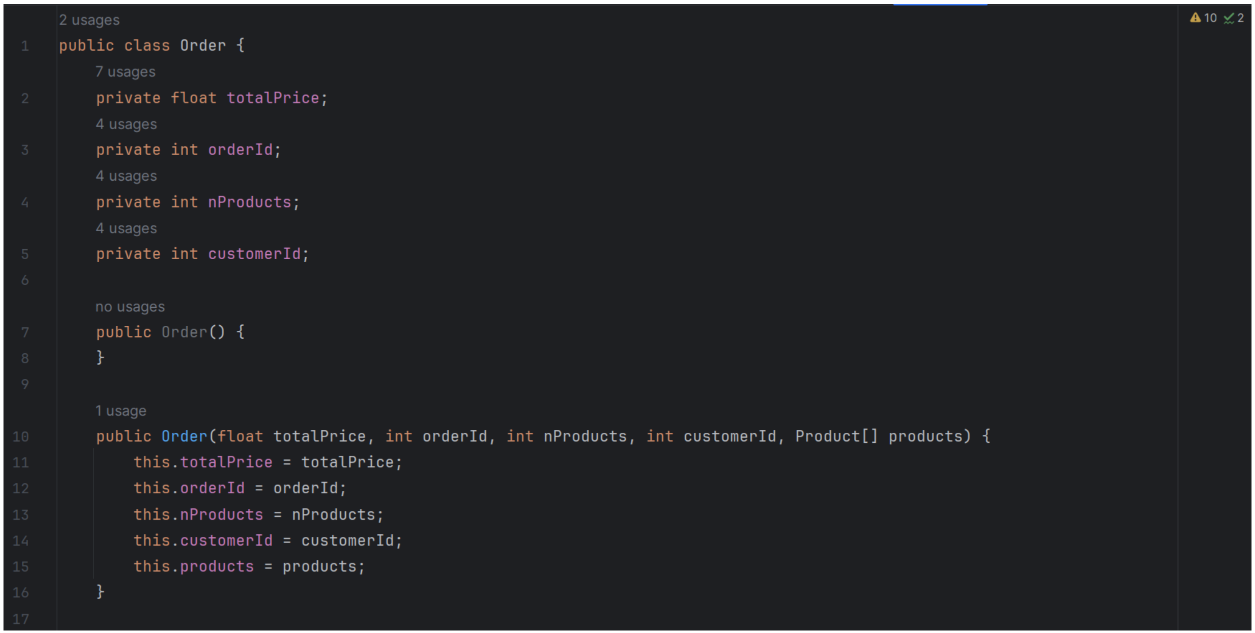


```
    1 usage
    public float calculatePrice(){
        if(changeArray==true){
            Products=new Product[newProducts.length];
            System.arraycopy(newProducts, srcPos: 0,Products, destPos: 0,newProducts.length);
        } else if (changeArray==false){
            Products=new Product[originalproducts.length];
            System.arraycopy(originalproducts, srcPos: 0,Products, destPos: 0,originalproducts.length);
        }
        for(Product product:Products){
            totalPrice+=product.getPrice();
        }
return totalPrice;
    }
    no usages
    public Product[] placeOrder(Product[] FinalProducts){
        if(changeArray==true){
            Products=new Product[newProducts.length];
            System.arraycopy(newProducts, srcPos: 0,FinalProducts, destPos: 0,newProducts.length);
            return Products;
        } else{
            Products=new Product[originalproducts.length];
            System.arraycopy(originalproducts, srcPos: 0,FinalProducts, destPos: 0,originalproducts.length);
        return Products;
```

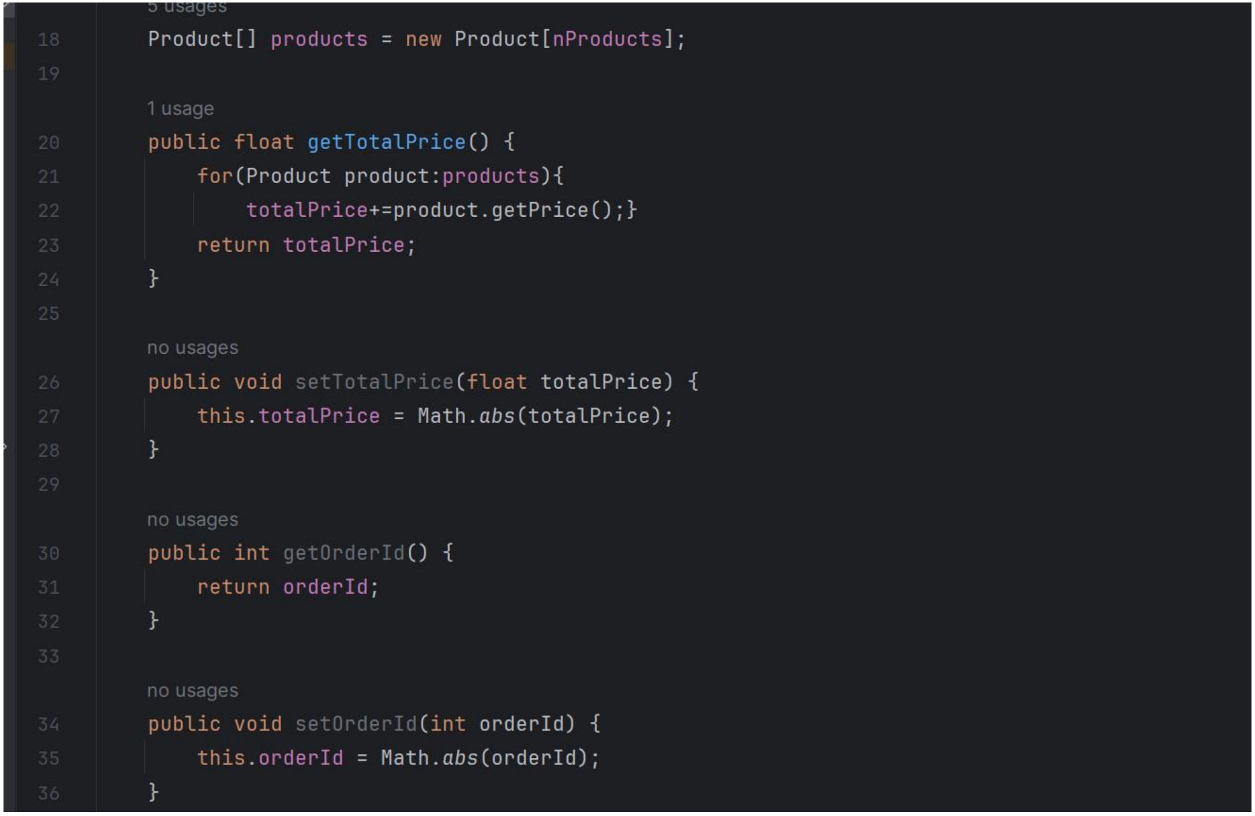


```
    no usages
    public Product[] placeOrder(Product[] FinalProducts){
        if(changeArray==true){
            Products=new Product[newProducts.length];
            System.arraycopy(newProducts, srcPos: 0,FinalProducts, destPos: 0,newProducts.length);
            return Products;
        } else{
            Products=new Product[originalproducts.length];
            System.arraycopy(originalproducts, srcPos: 0,FinalProducts, destPos: 0,originalproducts.length);
        return Products;
        }
    }

}
```

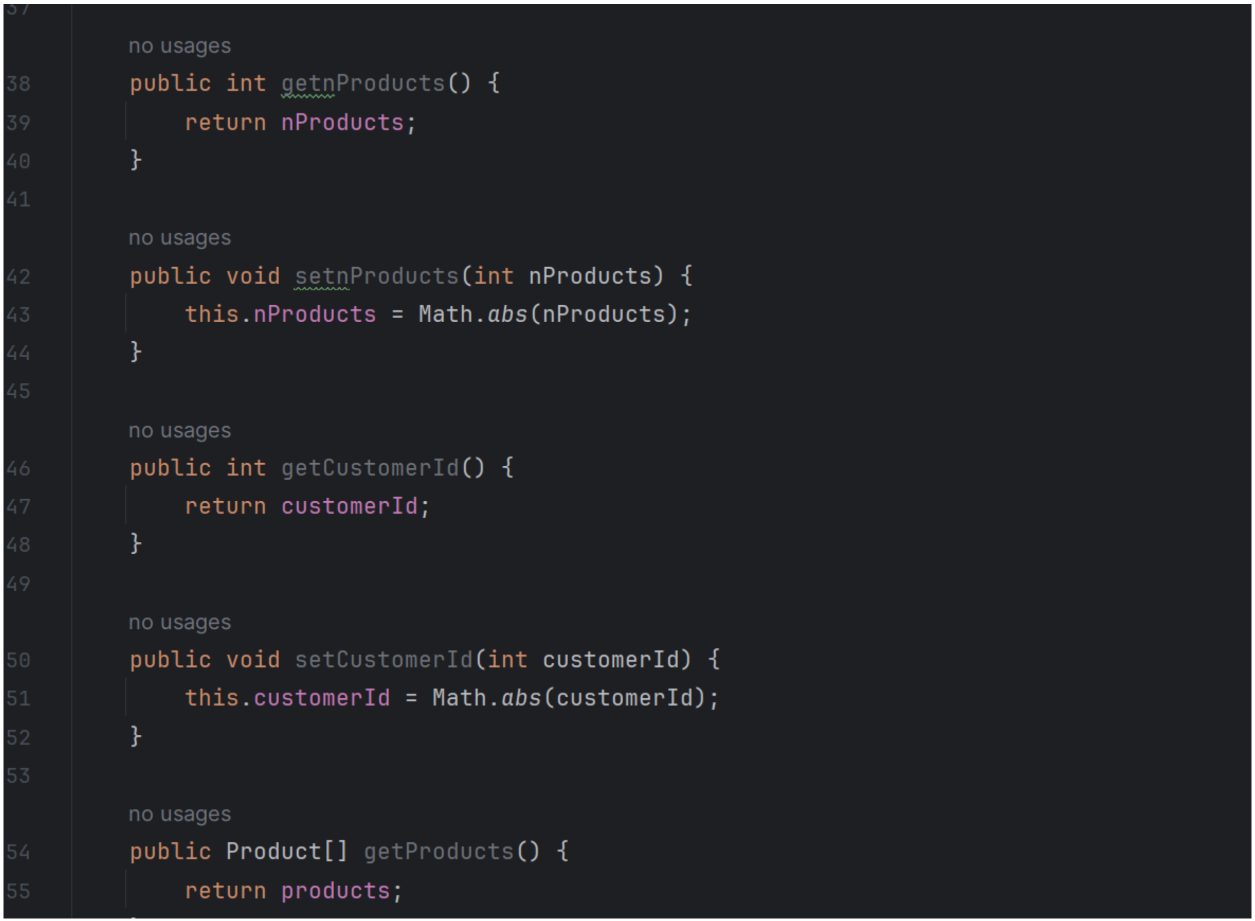
Order:



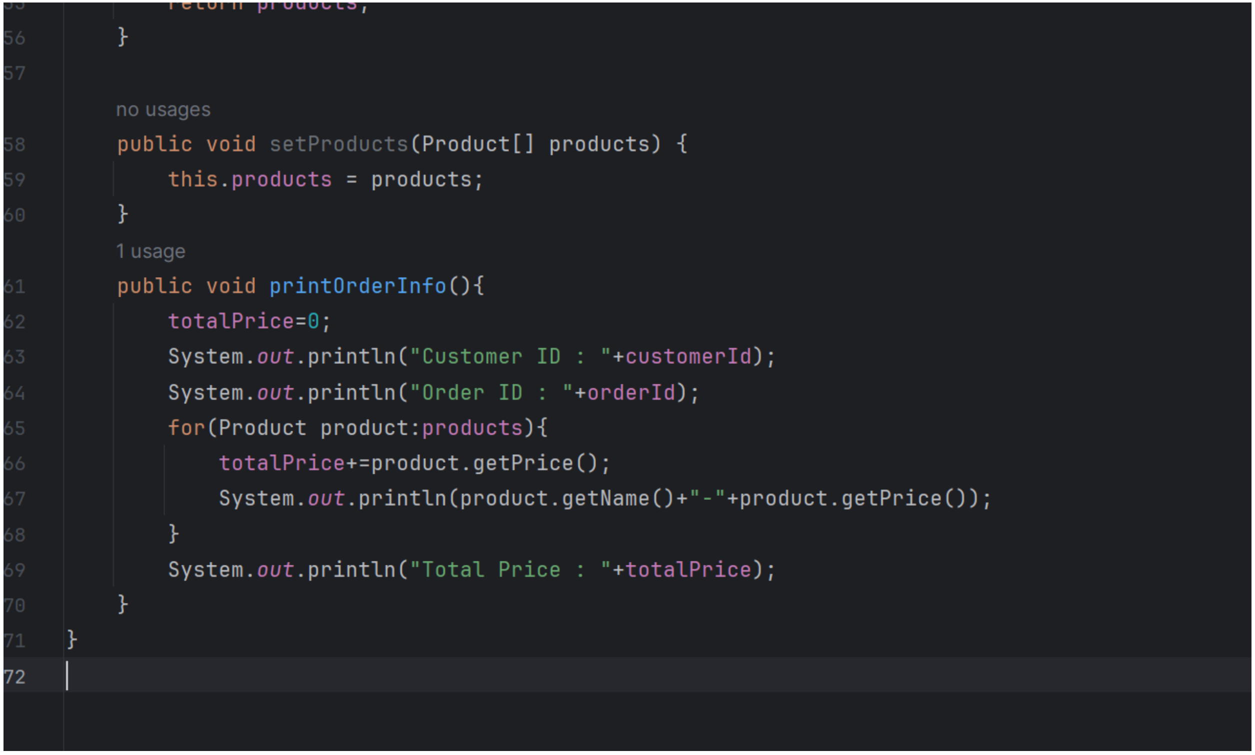
```
2 usages
public class Order {
    7 usages
    private float totalPrice;
    4 usages
    private int orderId;
    4 usages
    private int nProducts;
    4 usages
    private int customerId;

    no usages
    public Order() {
    }

    1 usage
    public Order(float totalPrice, int orderId, int nProducts, int customerId, Product[] products) {
        this.totalPrice = totalPrice;
        this.orderId = orderId;
        this.nProducts = nProducts;
        this.customerId = customerId;
        this.products = products;
    }

```



```
    5 usages
    Product[] products = new Product[nProducts];

    1 usage
    public float getTotalPrice() {
        for(Product product:products){
            totalPrice+=product.getPrice();}
        return totalPrice;
    }

    no usages
    public void setTotalPrice(float totalPrice) {
        this.totalPrice = Math.abs(totalPrice);
    }

    no usages
    public int getOrderId() {
        return orderId;
    }

    no usages
    public void setOrderId(int orderId) {
        this.orderId = Math.abs(orderId);
    }
```

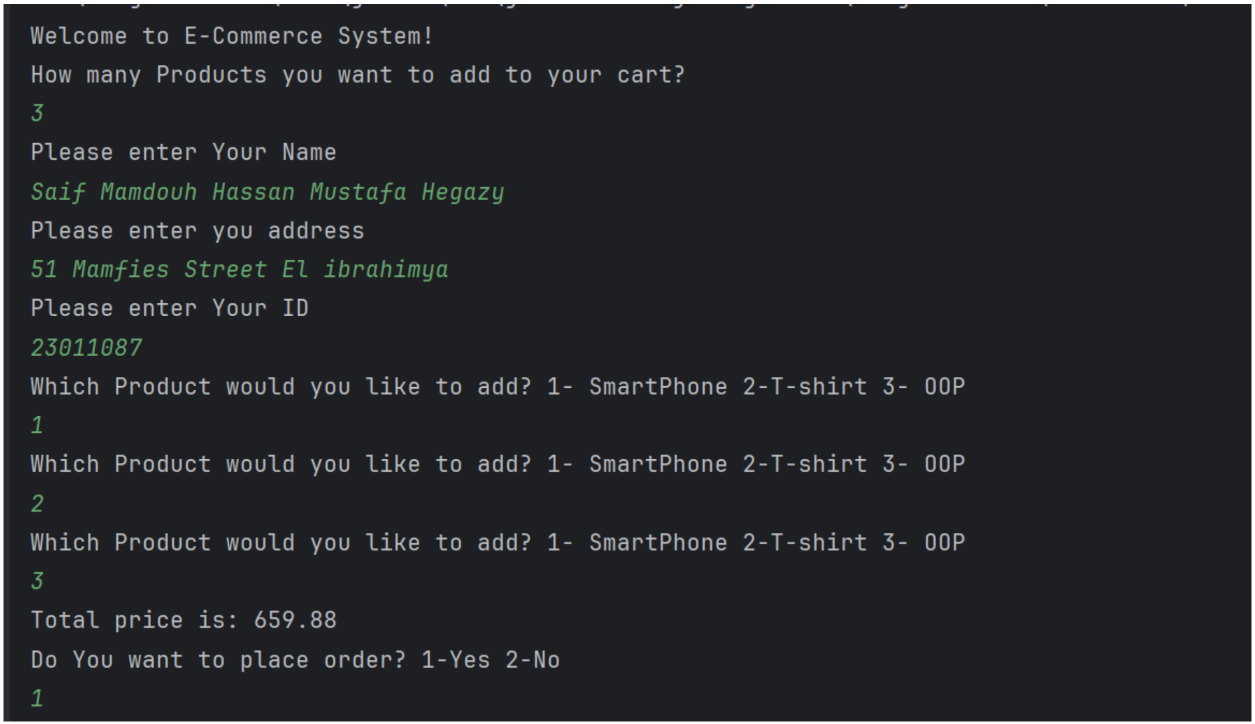


```java
    no usages
    public int getnProducts() {
        return nProducts;
    }

    no usages
    public void setnProducts(int nProducts) {
        this.nProducts = Math.abs(nProducts);
    }

    no usages
    public int getCustomerId() {
        return customerId;
    }

    no usages
    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    no usages
    public Product[] getProducts() {
        return products;
```

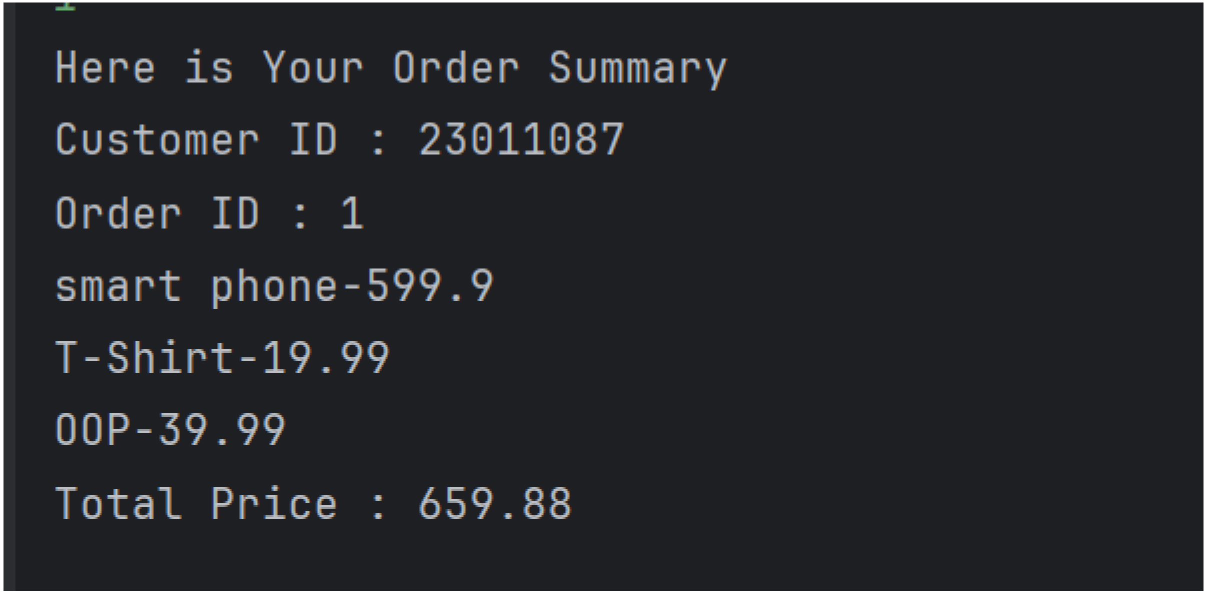


```java
    }

    no usages
    public void setProducts(Product[] products) {
        this.products = products;
    }
    1 usage
    public void printOrderInfo(){
        totalPrice=0;
        System.out.println("Customer ID : "+customerId);
        System.out.println("Order ID : "+orderId);
        for(Product product:products){
            totalPrice+=product.getPrice();
            System.out.println(product.getName()+"-"+product.getPrice());
        }
        System.out.println("Total Price : "+totalPrice);
    }
}
```

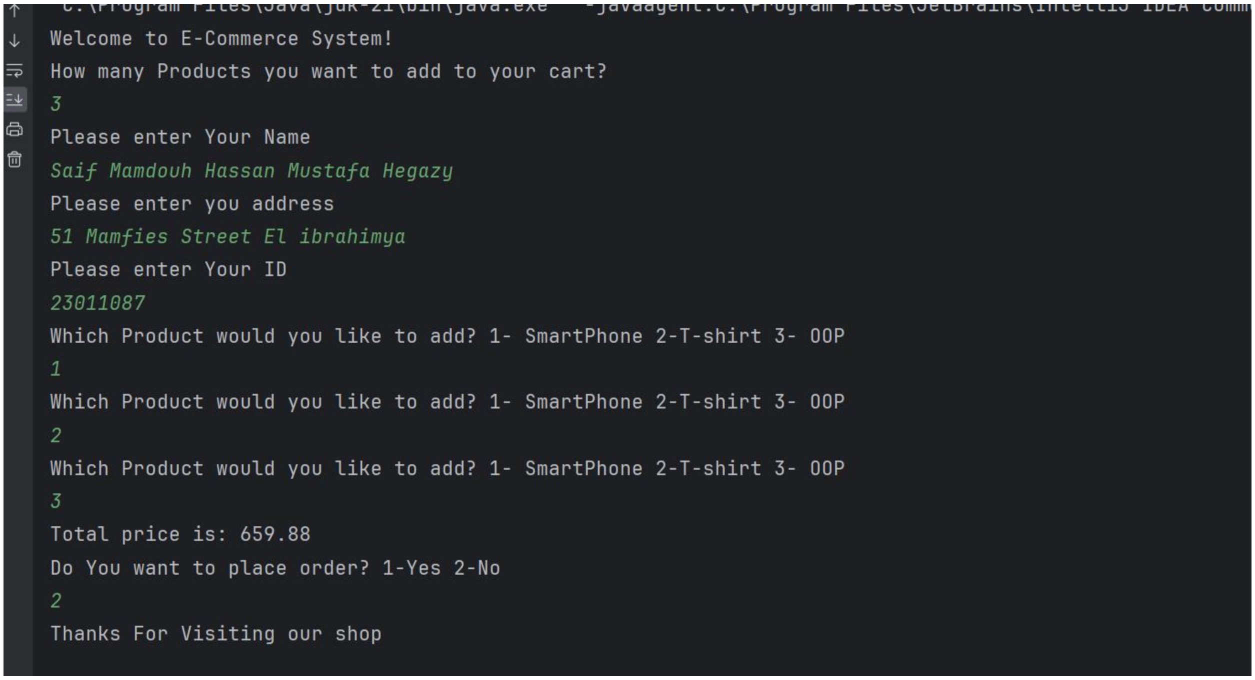
Output:



```
Welcome to E-Commerce System!
How many Products you want to add to your cart?
3
Please enter Your Name
Saif Mamdouh Hassan Mustafa Hegazy
Please enter you address
51 Mamfies Street El ibrahimya
Please enter Your ID
23011087
Which Product would you like to add? 1- SmartPhone 2-T-shirt 3- OOP
1
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
Total price is: 659.88
Do You want to place order? 1-Yes 2-No
1
```



```
Here is Your Order Summary
Customer ID : 23011087
Order ID : 1
smart phone-599.9
T-Shirt-19.99
OOP-39.99
Total Price : 659.88
```



```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Comm
Welcome to E-Commerce System!
How many Products you want to add to your cart?
3
Please enter Your Name
Saif Mamdouh Hassan Mustafa Hegazy
Please enter you address
51 Mamfies Street El ibrahimya
Please enter Your ID
23011087
Which Product would you like to add? 1- SmartPhone 2-T-shirt 3- OOP
1
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
Total price is: 659.88
Do You want to place order? 1-Yes 2-No
2
Thanks For Visiting our shop
```