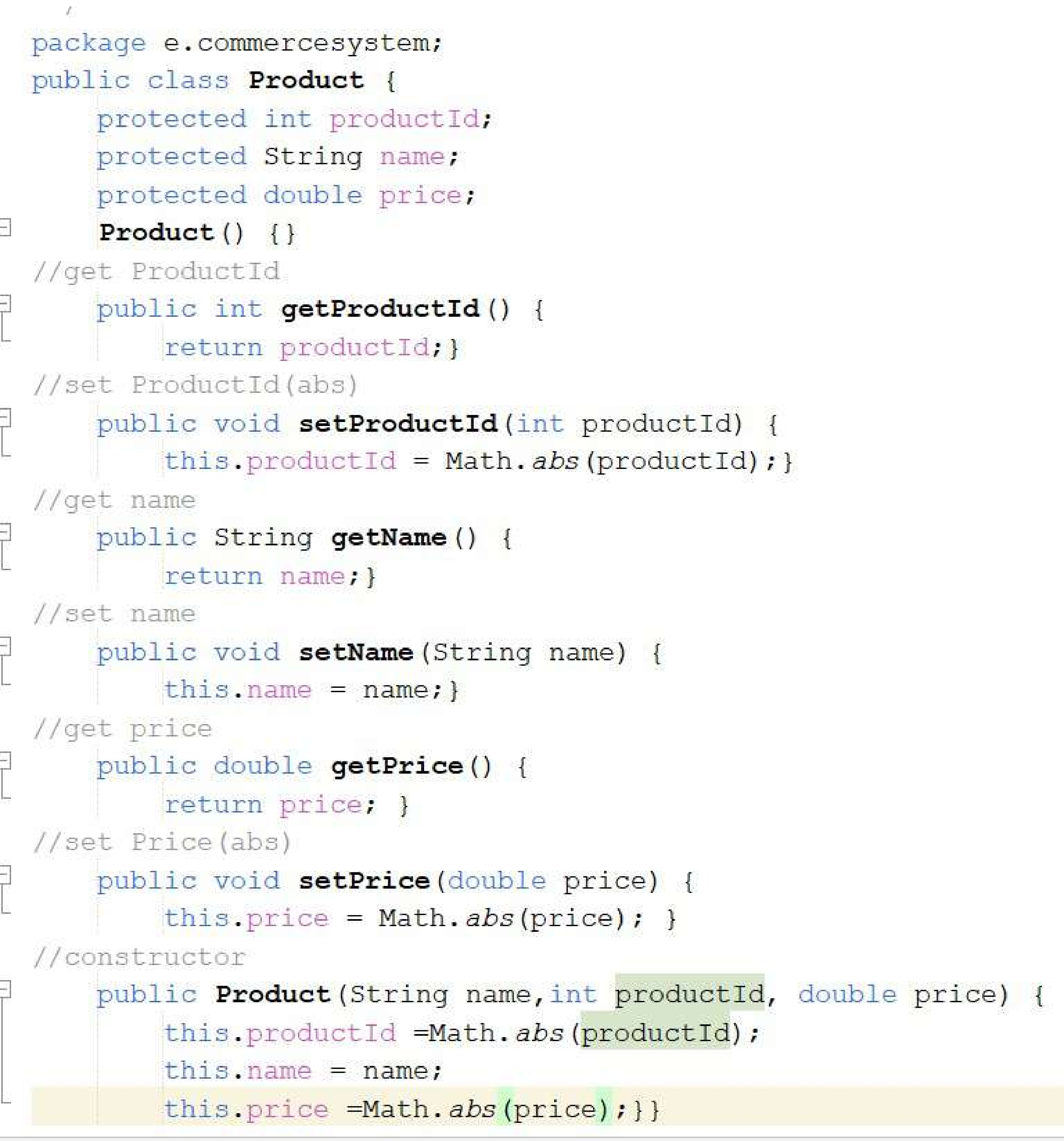
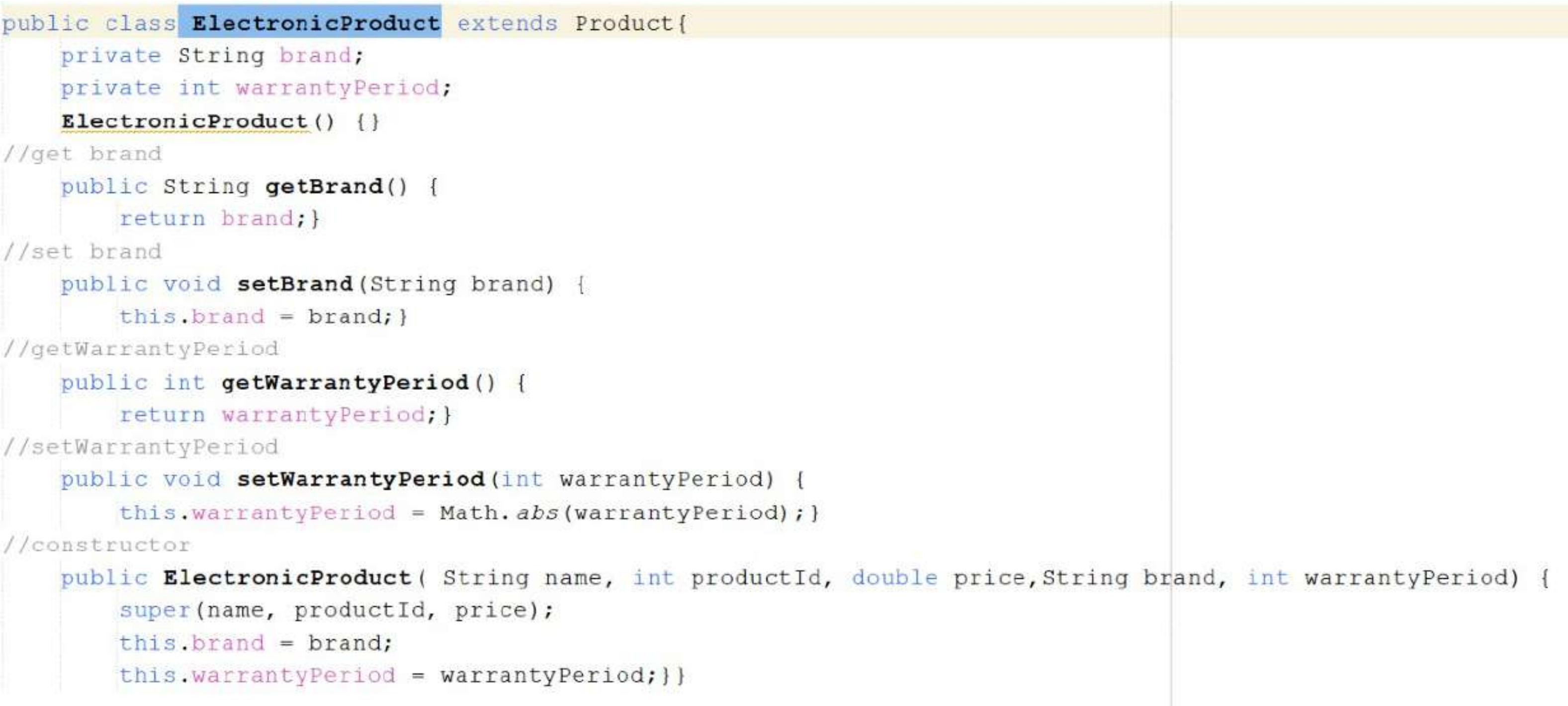
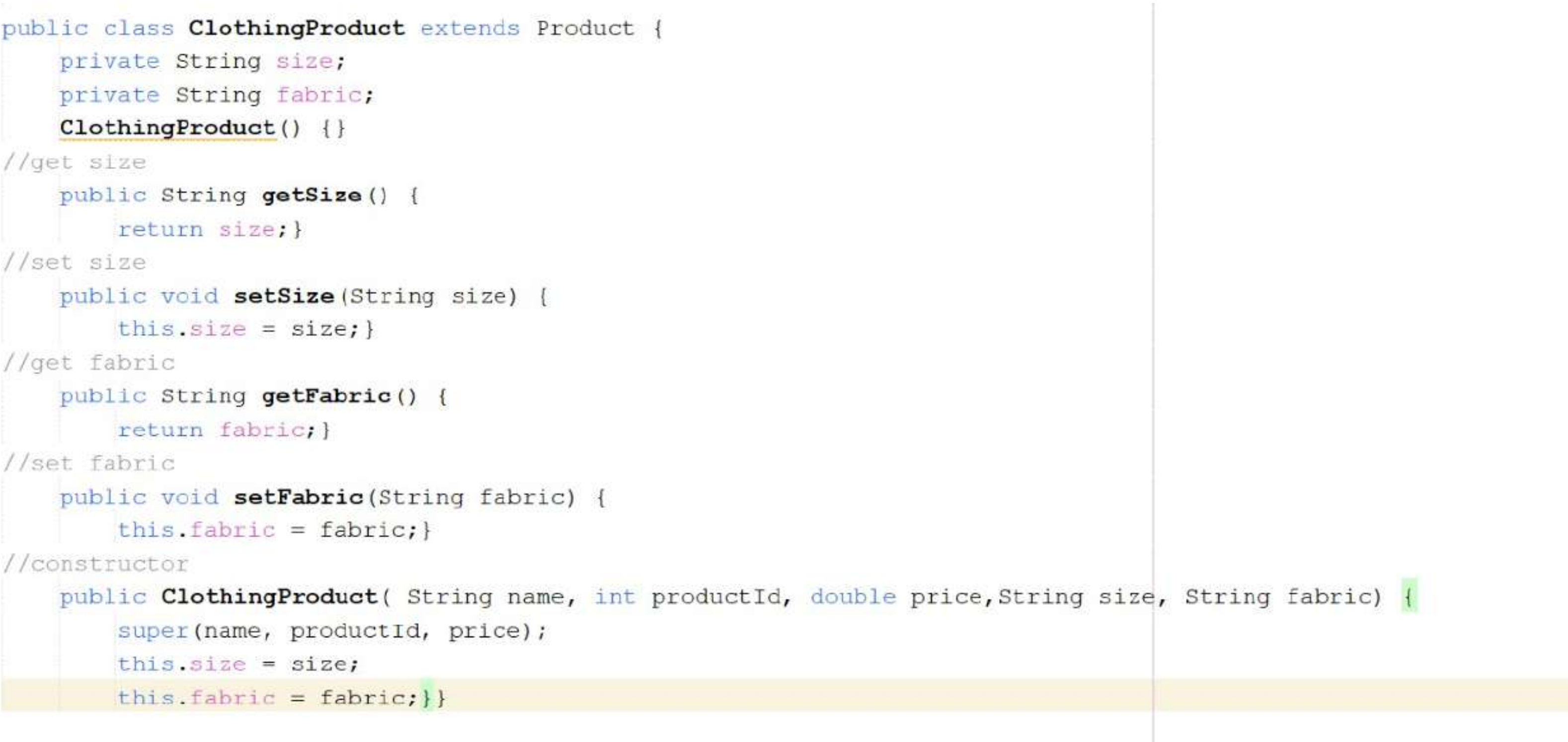


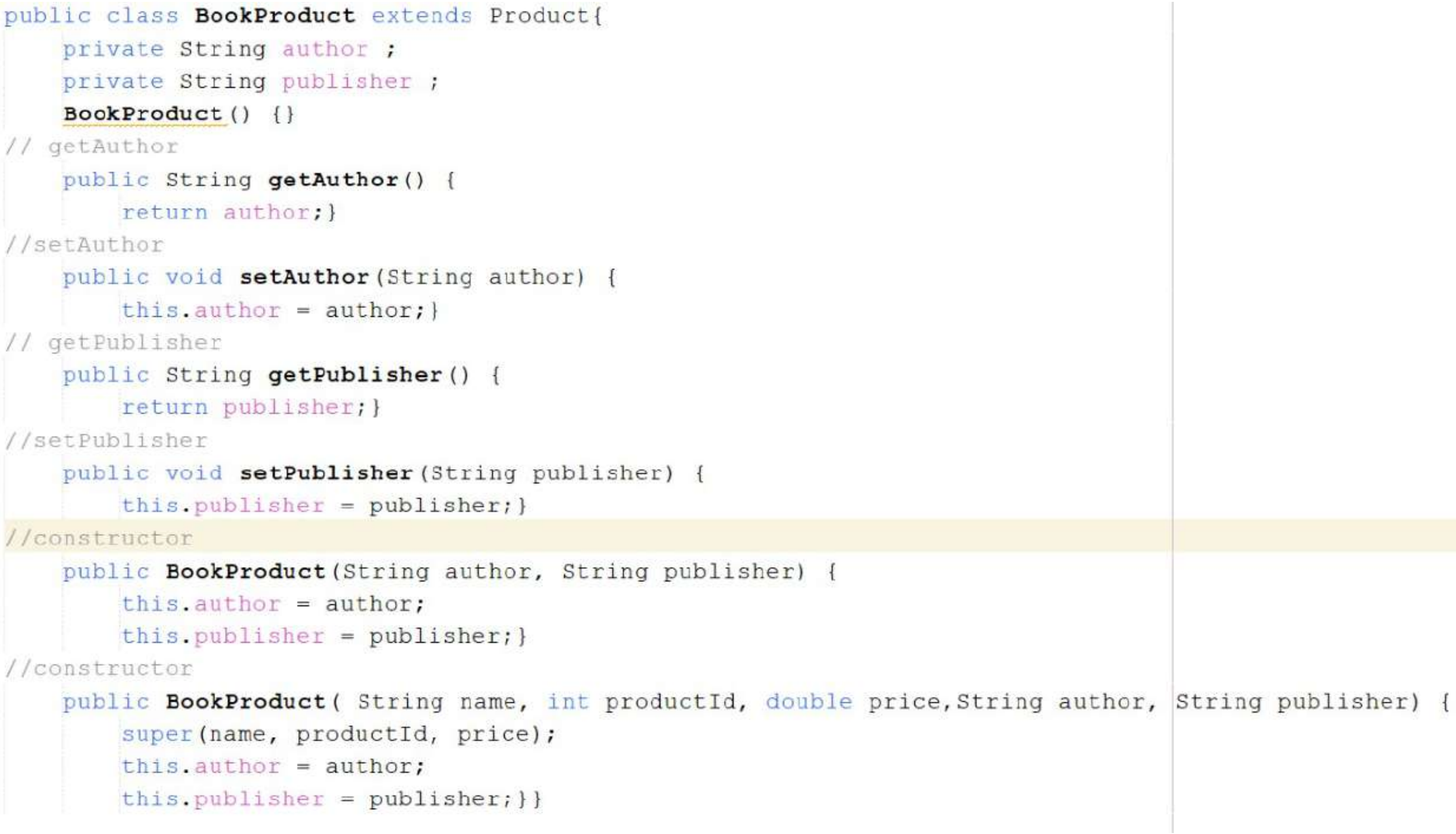
```java
package e.commercesystem;
public class Product {
    protected int productId;
    protected String name;
    protected double price;
    Product() {}
//get ProductId
    public int getProductId() {
        return productId;}
//set ProductId(abs)
    public void setProductId(int productId) {
        this.productId = Math.abs(productId);}
//get name
    public String getName() {
        return name;}
//set name
    public void setName(String name) {
        this.name = name;}
//get price
    public double getPrice() {
        return price; }
//set Price(abs)
    public void setPrice(double price) {
        this.price = Math.abs(price); }
//constructor
    public Product(String name,int productId, double price) {
        this.productId =Math.abs(productId);
        this.name = name;
        this.price =Math.abs(price);}}
```



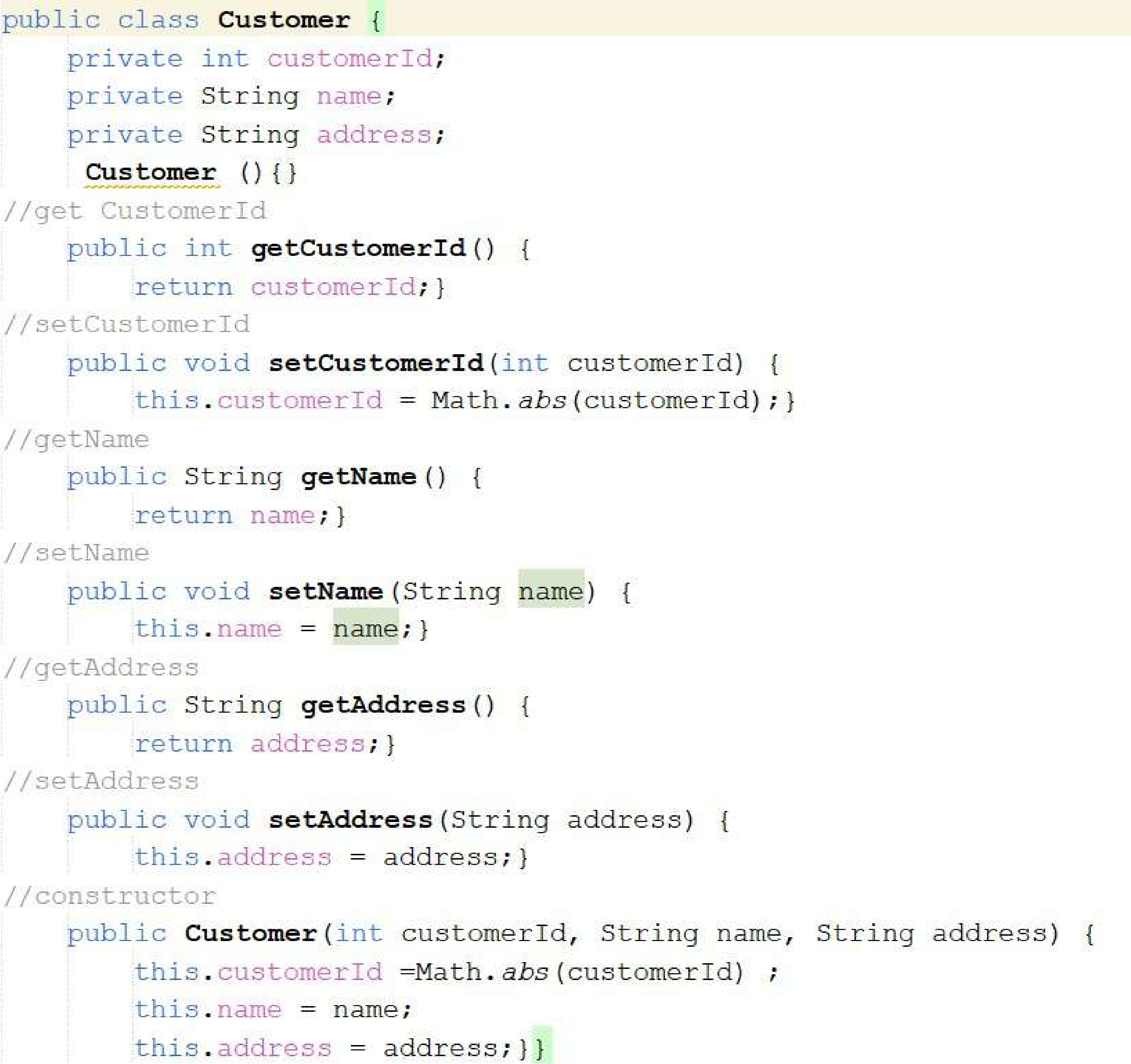
```java
public class ElectronicProduct extends Product{
    private String brand;
    private int warrantyPeriod;
    ElectronicProduct() {}
//get brand
    public String getBrand() {
        return brand;}
//set brand
    public void setBrand(String brand) {
        this.brand = brand;}
//getWarrantyPeriod
    public int getWarrantyPeriod() {
        return warrantyPeriod;}
//setWarrantyPeriod
    public void setWarrantyPeriod(int warrantyPeriod) {
        this.warrantyPeriod = Math.abs(warrantyPeriod);}
//constructor
    public ElectronicProduct( String name, int productId, double price,String brand, int warrantyPeriod) {
        super(name, productId, price);
        this.brand = brand;
        this.warrantyPeriod = warrantyPeriod;}}
```



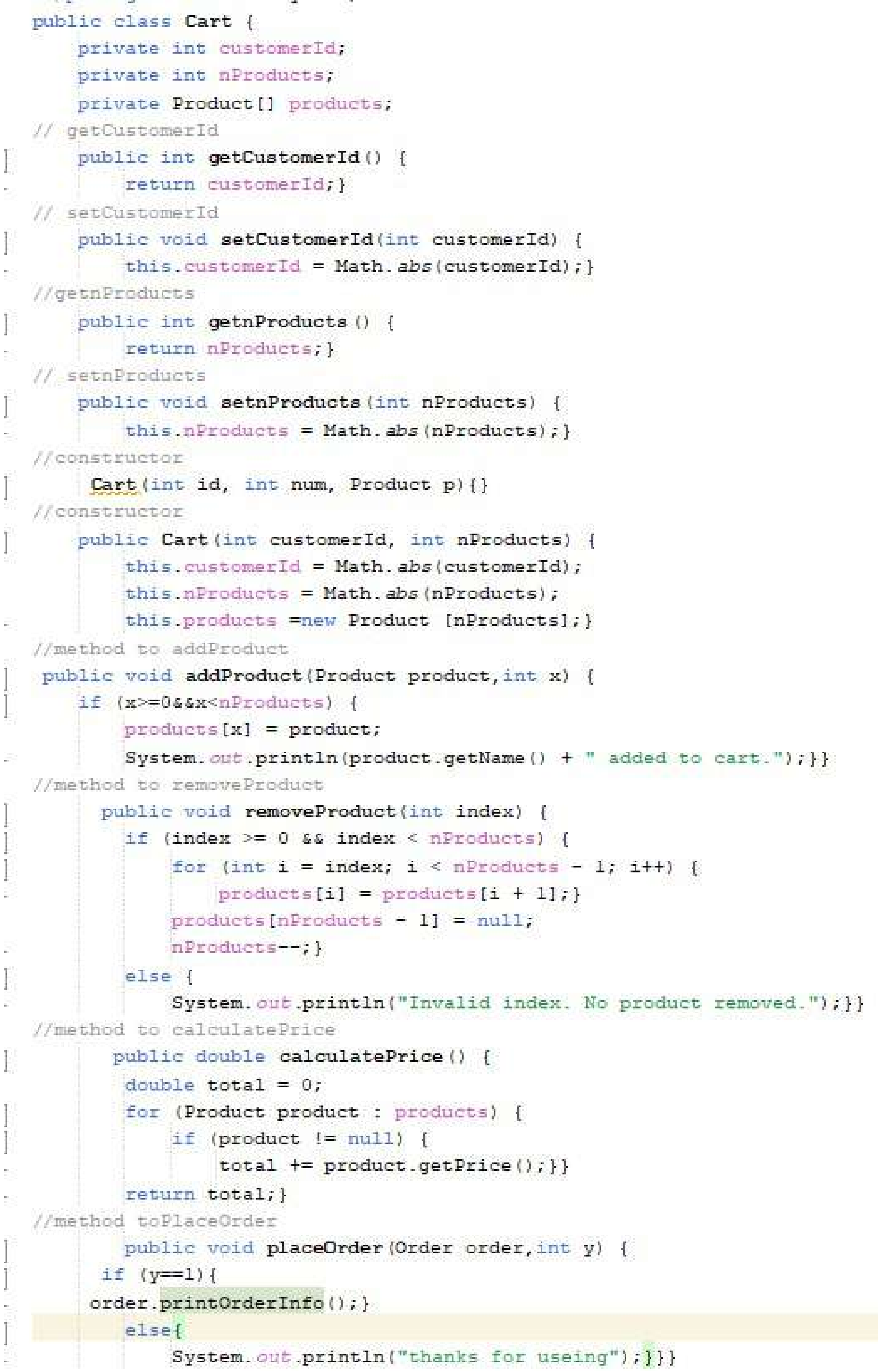
```
public class ClothingProduct extends Product {
    private String size;
    private String fabric;
    ClothingProduct() {}
//get size
    public String getSize() {
        return size;}
//set size
    public void setSize(String size) {
        this.size = size;}
//get fabric
    public String getFabric() {
        return fabric;}
//set fabric
    public void setFabric(String fabric) {
        this.fabric = fabric;}
//constructor
    public ClothingProduct( String name, int productId, double price,String size, String fabric) {
        super(name, productId, price);
        this.size = size;
        this.fabric = fabric;}}
```



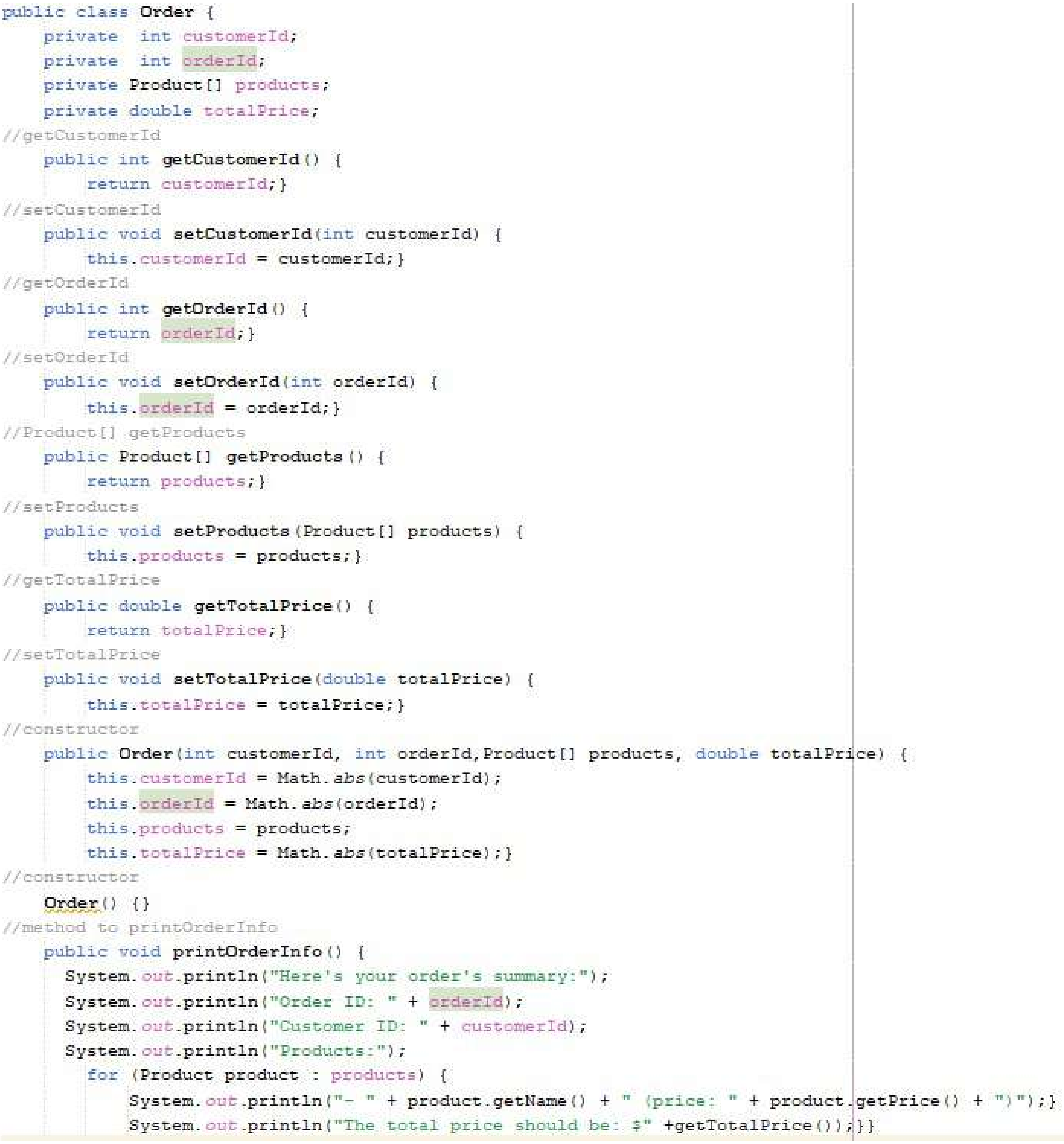
```java
public class BookProduct extends Product{
    private String author ;
    private String publisher ;
    BookProduct() {}
// getAuthor
    public String getAuthor() {
        return author;}
//setAuthor
    public void setAuthor(String author) {
        this.author = author;}
// getPublisher
    public String getPublisher() {
        return publisher;}
//setPublisher
    public void setPublisher(String publisher) {
        this.publisher = publisher;}
//constructor
    public BookProduct(String author, String publisher) {
        this.author = author;
        this.publisher = publisher;}
//constructor
    public BookProduct( String name, int productId, double price,String author, String publisher) {
        super(name, productId, price);
        this.author = author;
        this.publisher = publisher;}}
```



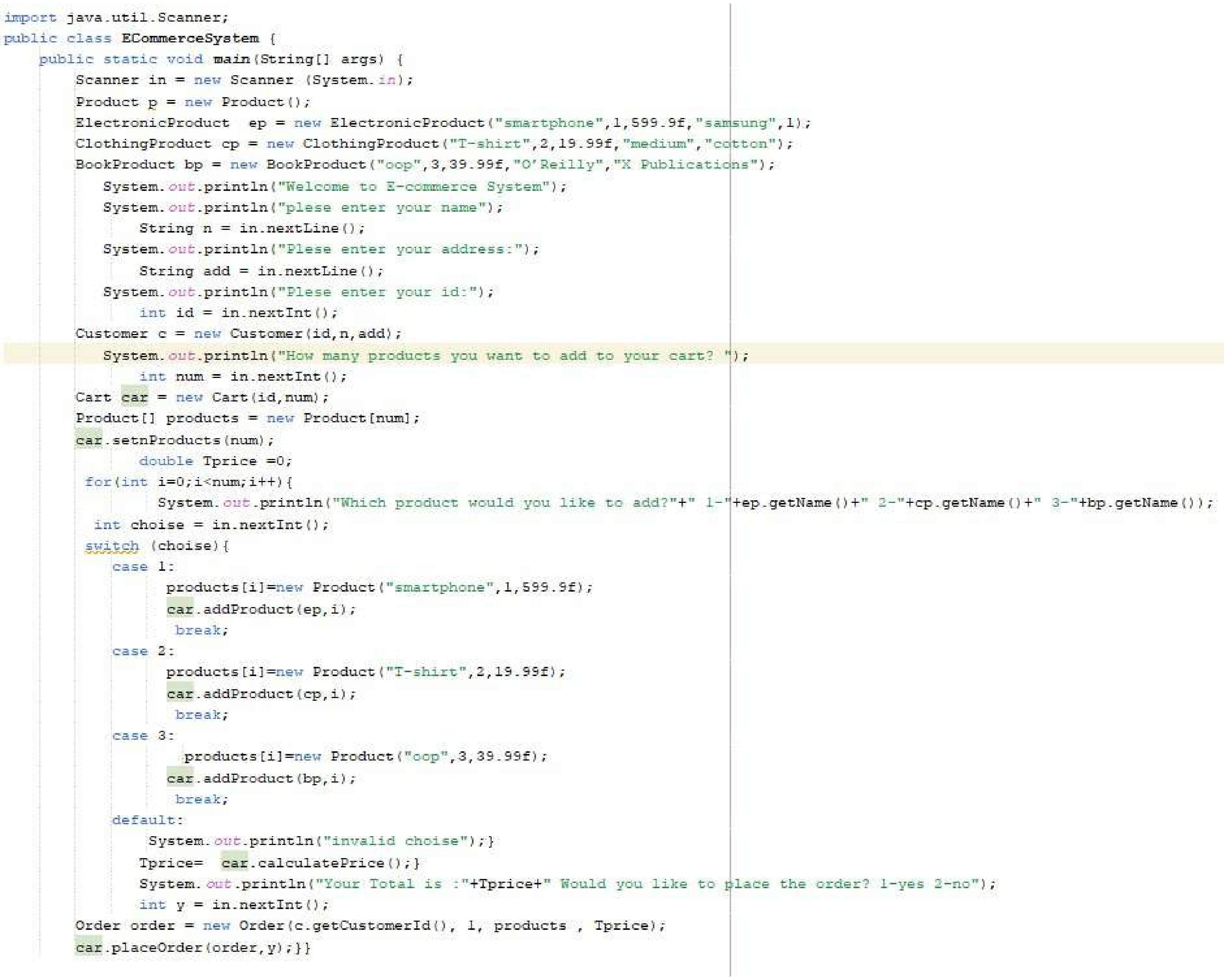
```
public class Customer {
    private int customerId;
    private String name;
    private String address;
     Customer (){}
//get CustomerId
    public int getCustomerId() {
        return customerId;}
//setCustomerId
    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);}
//getName
    public String getName() {
        return name;}
//setName
    public void setName(String name) {
        this.name = name;}
//getAddress
    public String getAddress() {
        return address;}
//setAddress
    public void setAddress(String address) {
        this.address = address;}
//constructor
    public Customer(int customerId, String name, String address) {
        this.customerId =Math.abs(customerId) ;
        this.name = name;
        this.address = address;}}
```



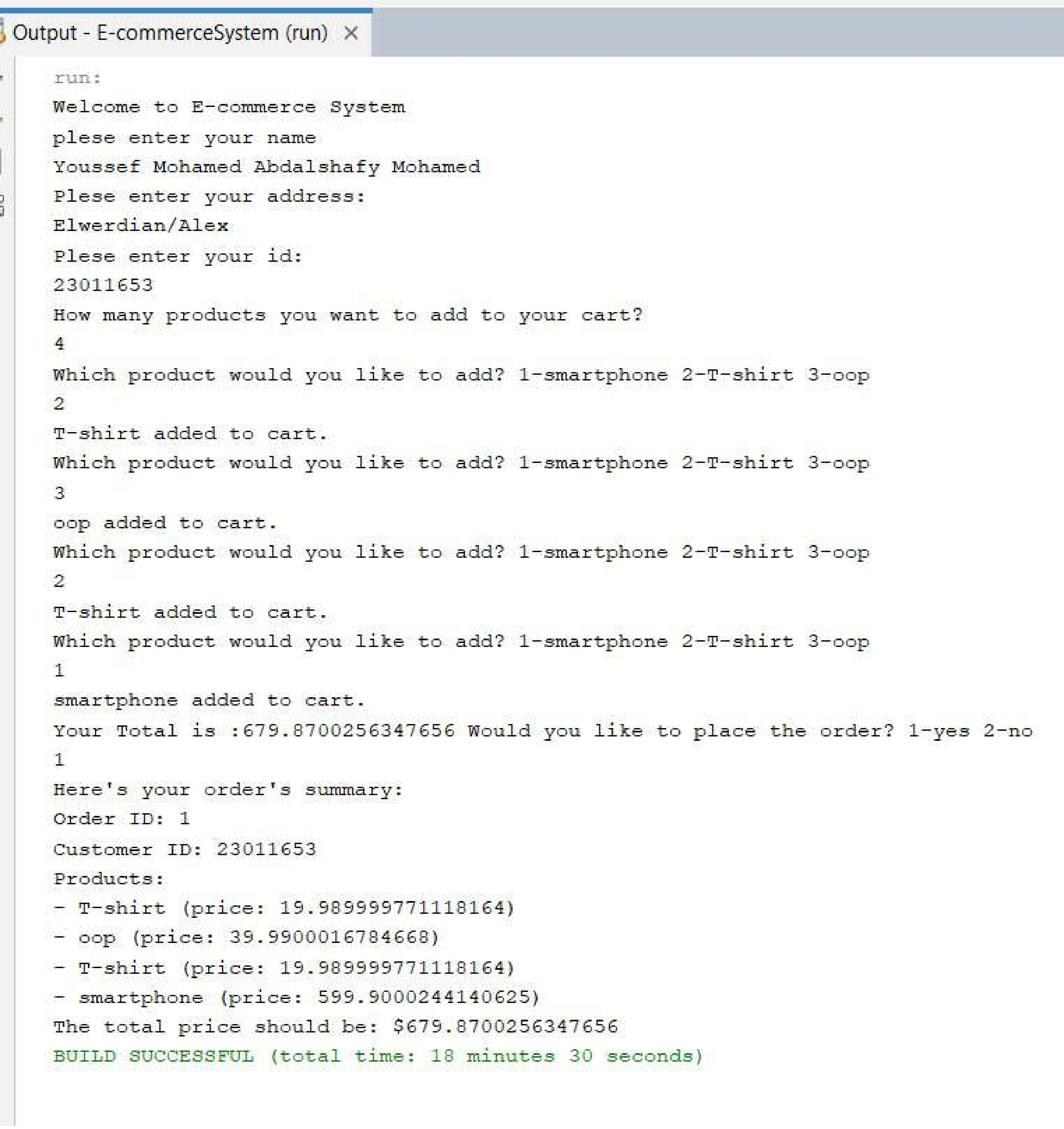
```
public class Cart {
    private int customerId;
    private int nProducts;
    private Product[] products;
// getCustomerId
    public int getCustomerId() {
        return customerId;}
// setCustomerId
    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);}
//getnProducts
    public int getnProducts() {
        return nProducts;}
// setnProducts
    public void setnProducts(int nProducts) {
        this.nProducts = Math.abs(nProducts);}
//constructor
     Cart(int id, int num, Product p){}
//constructor
    public Cart(int customerId, int nProducts) {
        this.customerId = Math.abs(customerId);
        this.nProducts = Math.abs(nProducts);
        this.products =new Product [nProducts];}
//method to addProduct
 public void addProduct(Product product,int x) {
    if (x>=0&&x<nProducts) {
        products[x] = product;
        System.out.println(product.getName() + " added to cart.");}}
//method to removeProduct
      public void removeProduct(int index) {
        if (index >= 0 && index < nProducts) {
            for (int i = index; i < nProducts - 1; i++) {
                products[i] = products[i + 1];}
            products[nProducts - 1] = null;
            nProducts--;}
        else {
            System.out.println("Invalid index. No product removed.");}}
//method to calculatePrice
       public double calculatePrice() {
        double total = 0;
        for (Product product : products) {
            if (product != null) {
                total += product.getPrice();}}
        return total;}
//method toPlaceOrder
        public void placeOrder(Order order,int y) {
      if (y==1){
     order.printOrderInfo();}
        else{
            System.out.println("thanks for useing");}}}
```



```
public class Order {
    private  int customerId;
    private  int orderId;
    private Product[] products;
    private double totalPrice;
//getCustomerId
    public int getCustomerId() {
        return customerId;}
//setCustomerId
    public void setCustomerId(int customerId) {
        this.customerId = customerId;}
//getOrderId
    public int getOrderId() {
        return orderId;}
//setOrderId
    public void setOrderId(int orderId) {
        this.orderId = orderId;}
//Product[] getProducts
    public Product[] getProducts() {
        return products;}
//setProducts
    public void setProducts(Product[] products) {
        this.products = products;}
//getTotalPrice
    public double getTotalPrice() {
        return totalPrice;}
//setTotalPrice
    public void setTotalPrice(double totalPrice) {
        this.totalPrice = totalPrice;}
//constructor
    public Order(int customerId, int orderId,Product[] products, double totalPrice) {
        this.customerId = Math.abs(customerId);
        this.orderId = Math.abs(orderId);
        this.products = products;
        this.totalPrice = Math.abs(totalPrice);}
//constructor
    Order() {}
//method to printOrderInfo
    public void printOrderInfo() {
      System.out.println("Here's your order's summary:");
      System.out.println("Order ID: " + orderId);
      System.out.println("Customer ID: " + customerId);
      System.out.println("Products:");
        for (Product product : products) {
            System.out.println("- " + product.getName() + " (price: " + product.getPrice() + ")");}
            System.out.println("The total price should be: $" +getTotalPrice());}}
```



```java
import java.util.Scanner;
public class ECommerceSystem {
    public static void main(String[] args) {
        Scanner in = new Scanner (System.in);
        Product p = new Product();
        ElectronicProduct  ep = new ElectronicProduct("smartphone",1,599.9f,"samsung",1);
        ClothingProduct cp = new ClothingProduct("T-shirt",2,19.99f,"medium","cotton");
        BookProduct bp = new BookProduct("oop",3,39.99f,"O'Reilly","X Publications");
           System.out.println("Welcome to E-commerce System");
           System.out.println("plese enter your name");
               String n = in.nextLine();
           System.out.println("Plese enter your address:");
               String add = in.nextLine();
           System.out.println("Plese enter your id:");
               int id = in.nextInt();
        Customer c = new Customer(id,n,add);
           System.out.println("How many products you want to add to your cart? ");
               int num = in.nextInt();
        Cart car = new Cart(id,num);
        Product[] products = new Product[num];
        car.setnProducts(num);
               double Tprice =0;
         for(int i=0;i<num;i++){
                 System.out.println("Which product would you like to add?"+" 1-"+ep.getName()+" 2-"+cp.getName()+" 3-"+bp.getName());
          int choise = in.nextInt();
         switch (choise){
            case 1:
                  products[i]=new Product("smartphone",1,599.9f);
                  car.addProduct(ep,i);
                   break;
            case 2:
                  products[i]=new Product("T-shirt",2,19.99f);
                  car.addProduct(cp,i);
                   break;
            case 3:
                    products[i]=new Product("oop",3,39.99f);
                  car.addProduct(bp,i);
                   break;
            default:
                 System.out.println("invalid choise");}
               Tprice=  car.calculatePrice();}
               System.out.println("Your Total is :"+Tprice+" Would you like to place the order? 1-yes 2-no");
               int y = in.nextInt();
        Order order = new Order(c.getCustomerId(), 1, products , Tprice);
        car.placeOrder(order,y);}}
```



```
run:
Welcome to E-commerce System
plese enter your name
Youssef Mohamed Abdalshafy Mohamed
Plese enter your address:
Elwerdian/Alex
Plese enter your id:
23011653
How many products you want to add to your cart?
4
Which product would you like to add? 1-smartphone 2-T-shirt 3-oop
2
T-shirt added to cart.
Which product would you like to add? 1-smartphone 2-T-shirt 3-oop
3
oop added to cart.
Which product would you like to add? 1-smartphone 2-T-shirt 3-oop
2
T-shirt added to cart.
Which product would you like to add? 1-smartphone 2-T-shirt 3-oop
1
smartphone added to cart.
Your Total is :679.8700256347656 Would you like to place the order? 1-yes 2-no
1
Here's your order's summary:
Order ID: 1
Customer ID: 23011653
Products:
- T-shirt (price: 19.989999771118164)
- oop (price: 39.9900016784668)
- T-shirt (price: 19.989999771118164)
- smartphone (price: 599.9000244140625)
The total price should be: $679.8700256347656
BUILD SUCCESSFUL (total time: 18 minutes 30 seconds)
```