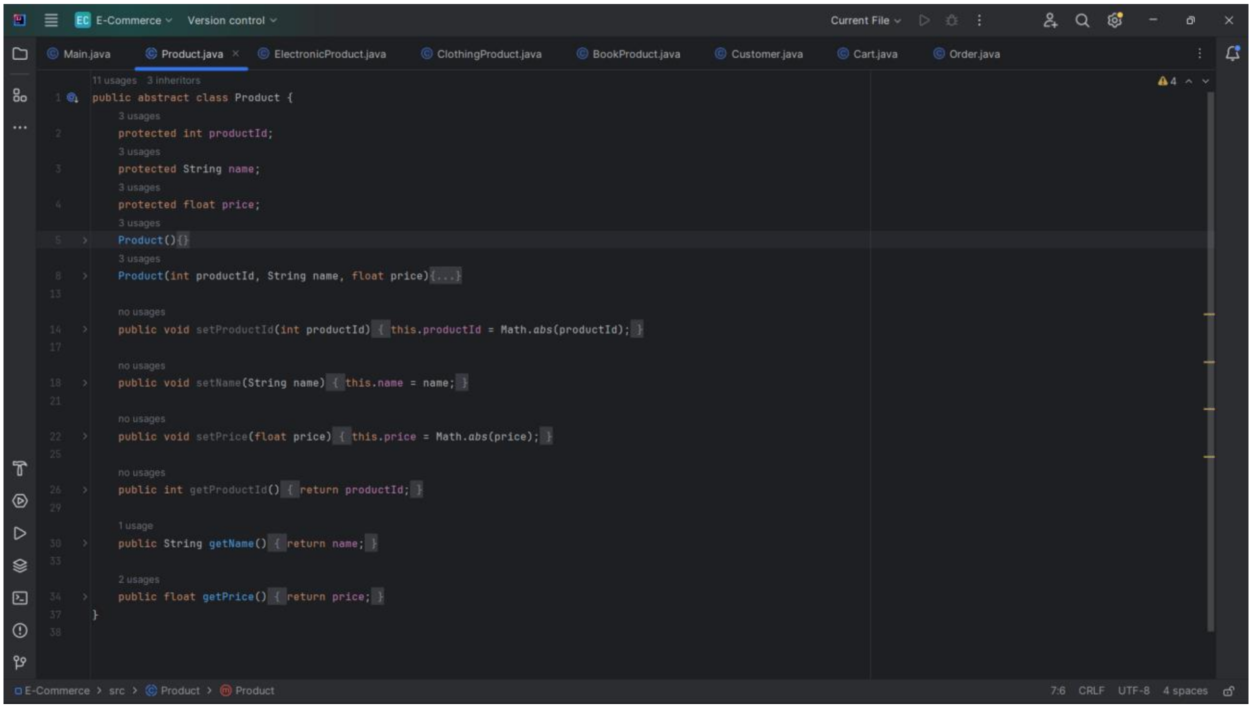
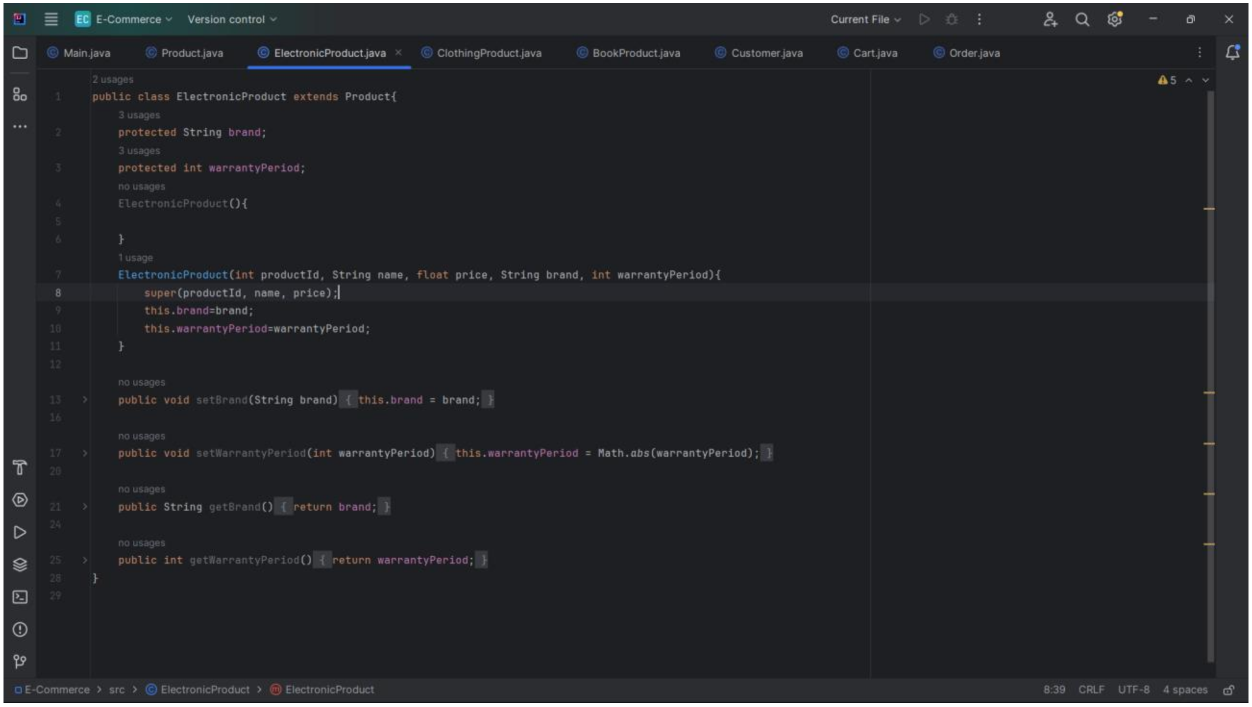
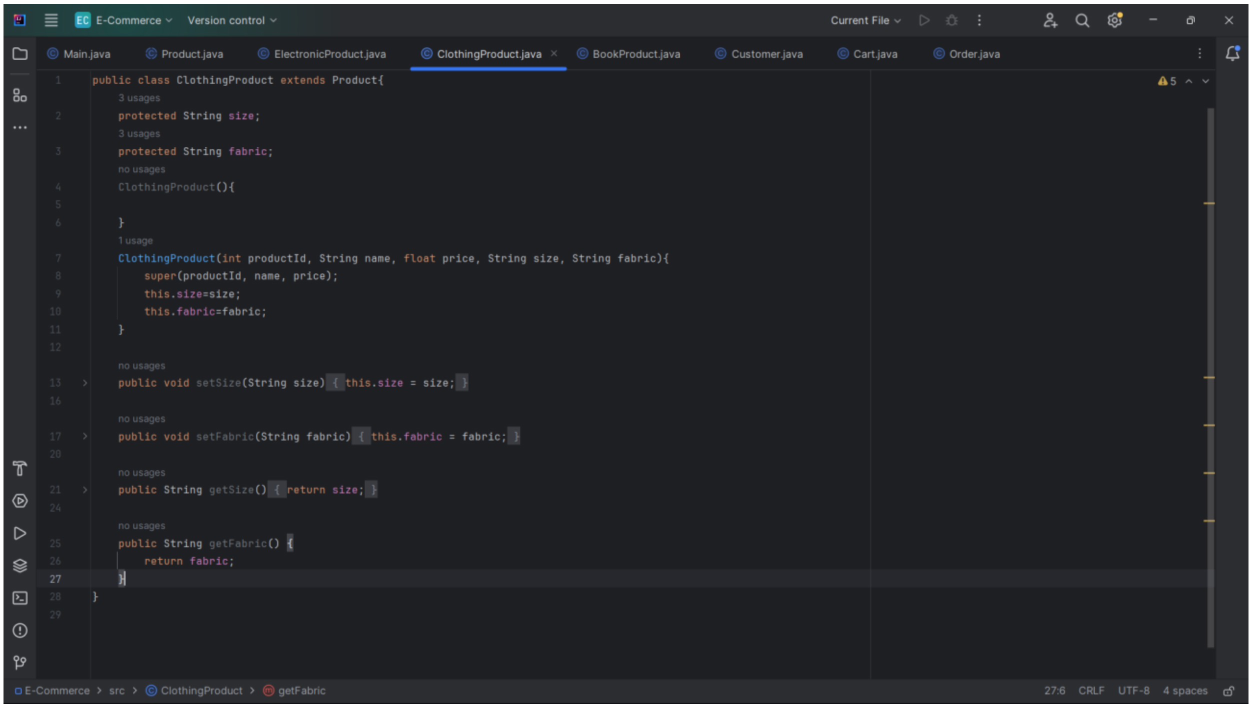


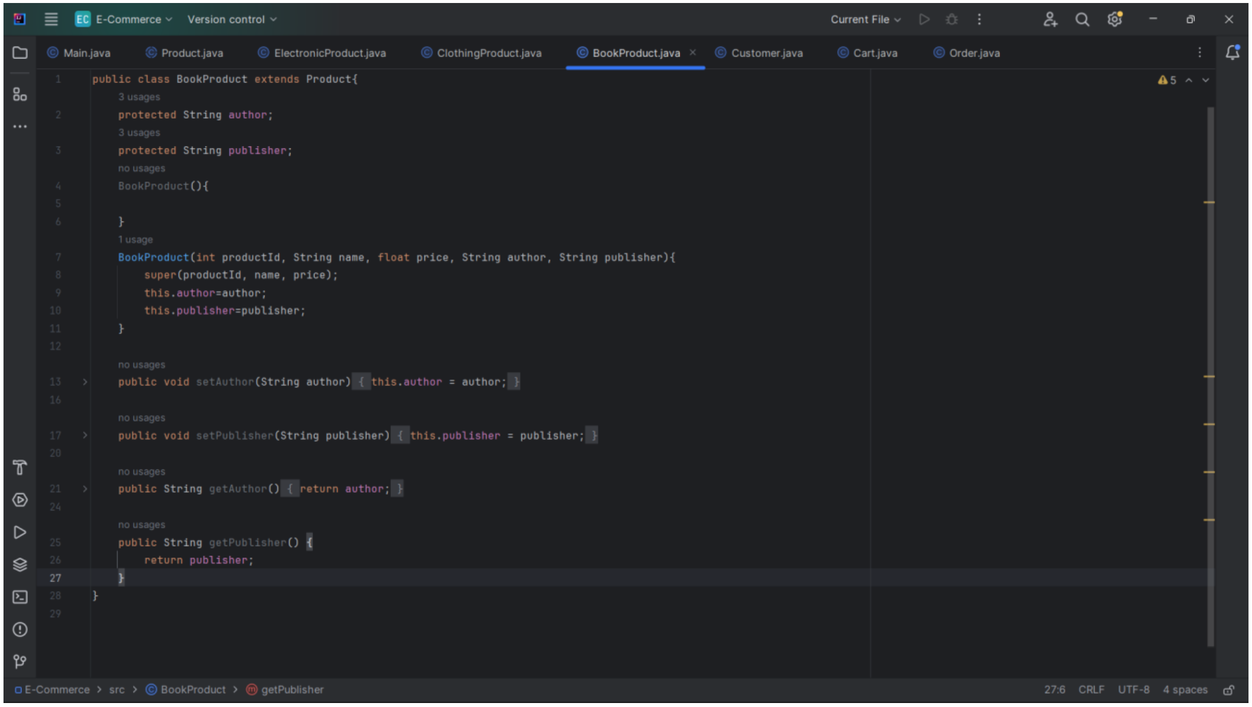
```java
public abstract class Product {
    protected int productId;
    protected String name;
    protected float price;
    Product(){}
    Product(int productId, String name, float price){...}

    public void setProductId(int productId) { this.productId = Math.abs(productId); }

    public void setName(String name) { this.name = name; }

    public void setPrice(float price) { this.price = Math.abs(price); }

    public int getProductId() { return productId; }

    public String getName() { return name; }

    public float getPrice() { return price; }
}
```



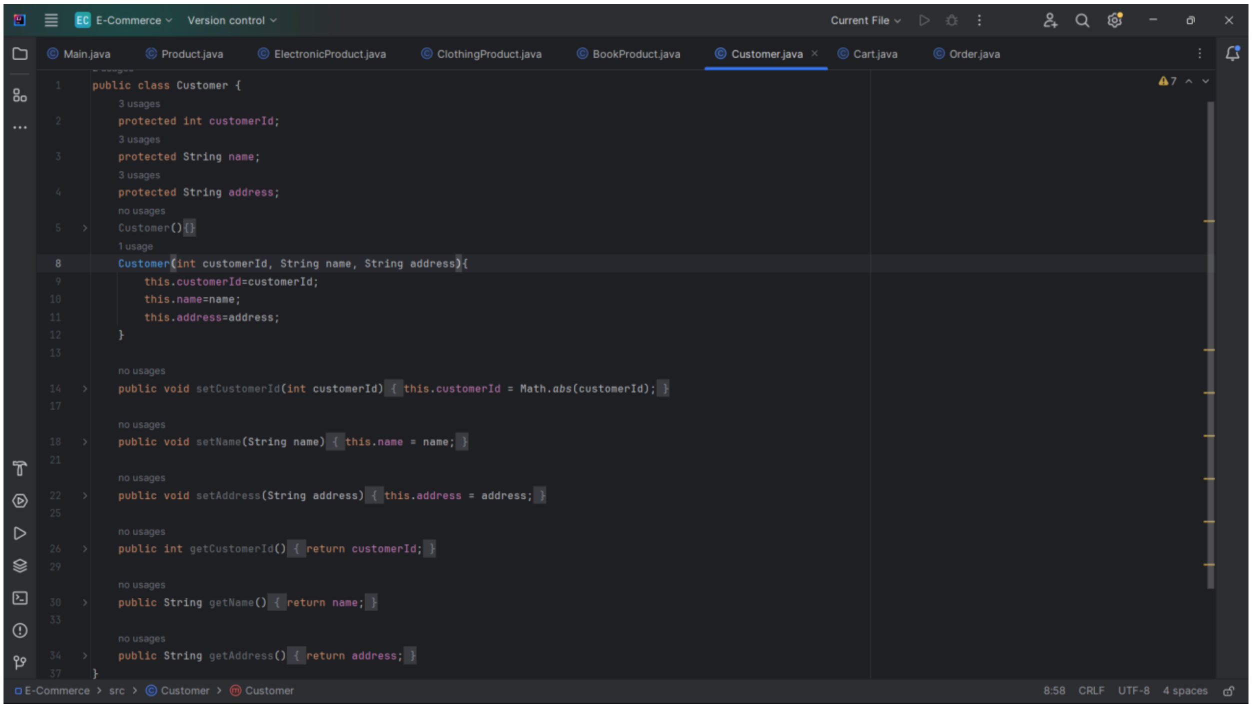
```java
public class ElectronicProduct extends Product{
    protected String brand;
    protected int warrantyPeriod;
    ElectronicProduct(){

    }
    ElectronicProduct(int productId, String name, float price, String brand, int warrantyPeriod){
        super(productId, name, price);
        this.brand=brand;
        this.warrantyPeriod=warrantyPeriod;
    }

    public void setBrand(String brand) { this.brand = brand; }

    public void setWarrantyPeriod(int warrantyPeriod) { this.warrantyPeriod = Math.abs(warrantyPeriod); }

    public String getBrand() { return brand; }

    public int getWarrantyPeriod() { return warrantyPeriod; }
}
```



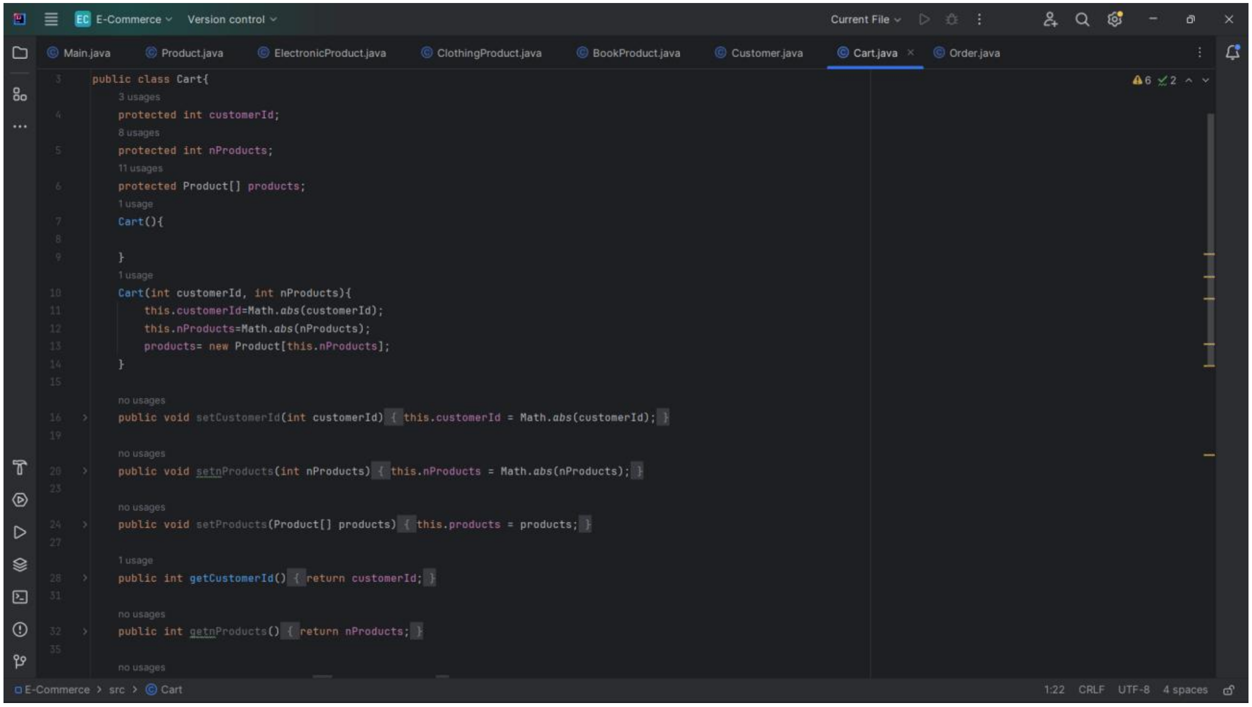
```java
public class ClothingProduct extends Product{
    3 usages
    protected String size;
    3 usages
    protected String fabric;
    no usages
    ClothingProduct(){

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

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

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

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

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



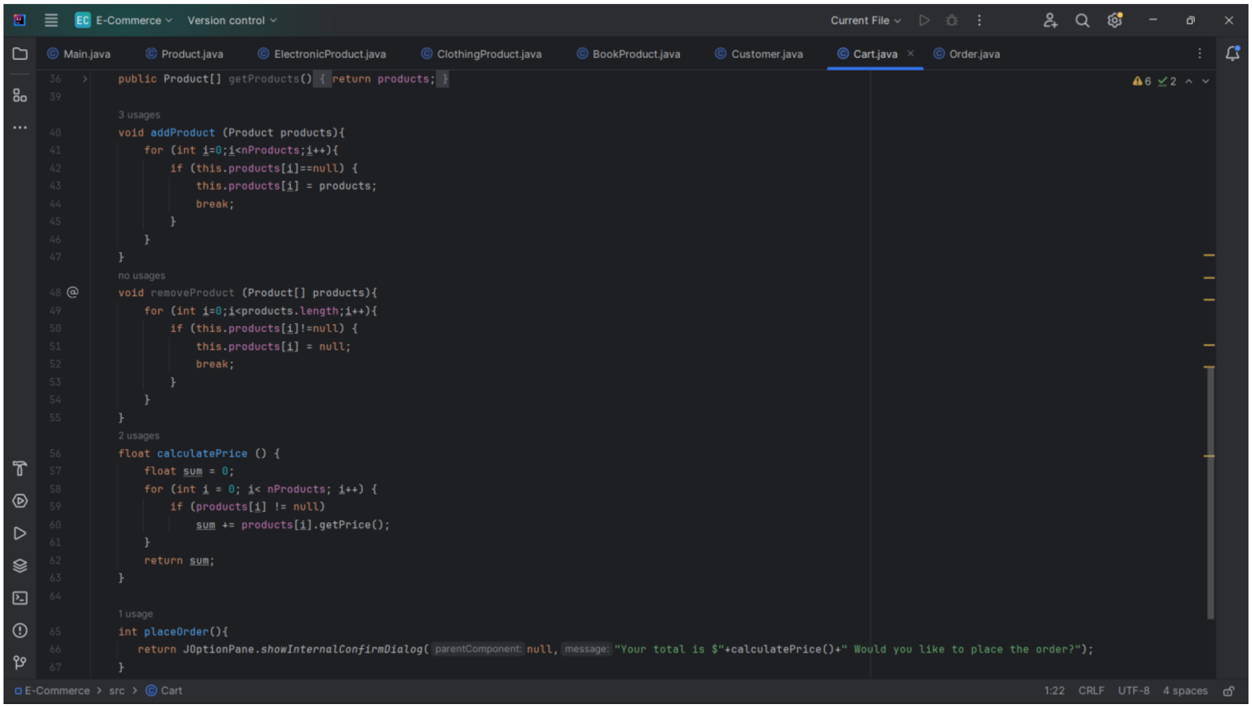
```java
public class BookProduct extends Product{
    3 usages
    protected String author;
    3 usages
    protected String publisher;
    no usages
    BookProduct(){

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

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

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

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

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



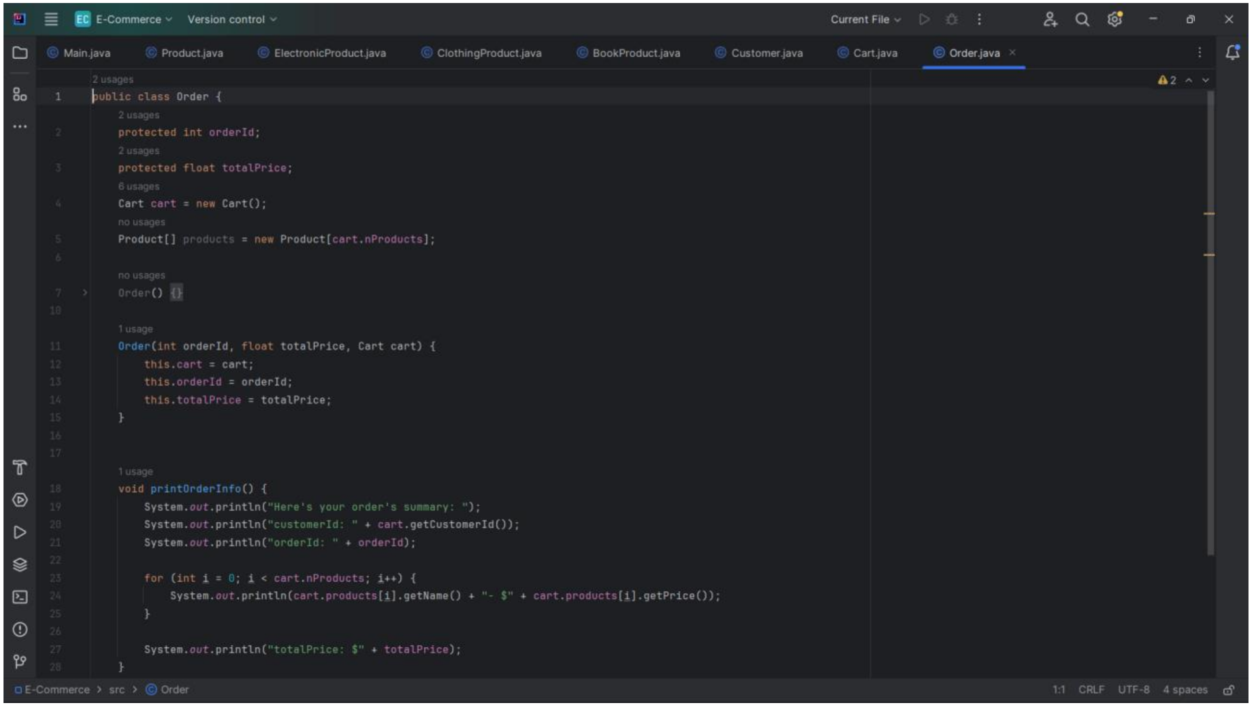
```
public class Customer {
    3 usages
    protected int customerId;
    3 usages
    protected String name;
    3 usages
    protected String address;
    no usages
    Customer(){}
    1 usage
    Customer(int customerId, String name, String address){
        this.customerId=customerId;
        this.name=name;
        this.address=address;
    }

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

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

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

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

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

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



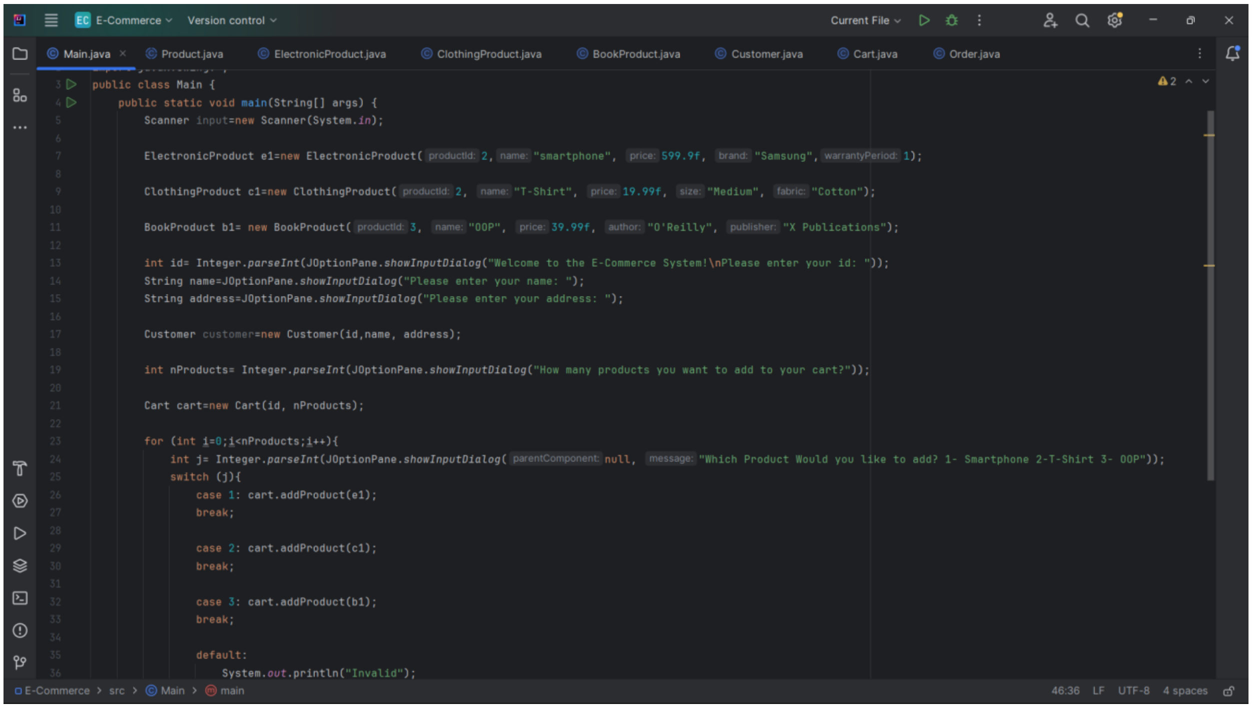
```
public class Cart{
    3 usages
    protected int customerId;
    8 usages
    protected int nProducts;
    11 usages
    protected Product[] products;
    1 usage
    Cart(){

    }
    1 usage
    Cart(int customerId, int nProducts){
        this.customerId=Math.abs(customerId);
        this.nProducts=Math.abs(nProducts);
        products= new Product[this.nProducts];
    }

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

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

    no usages
    public void setProducts(Product[] products) { this.products = products; }

    1 usage
    public int getCustomerId() { return customerId; }

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

    no usages
```



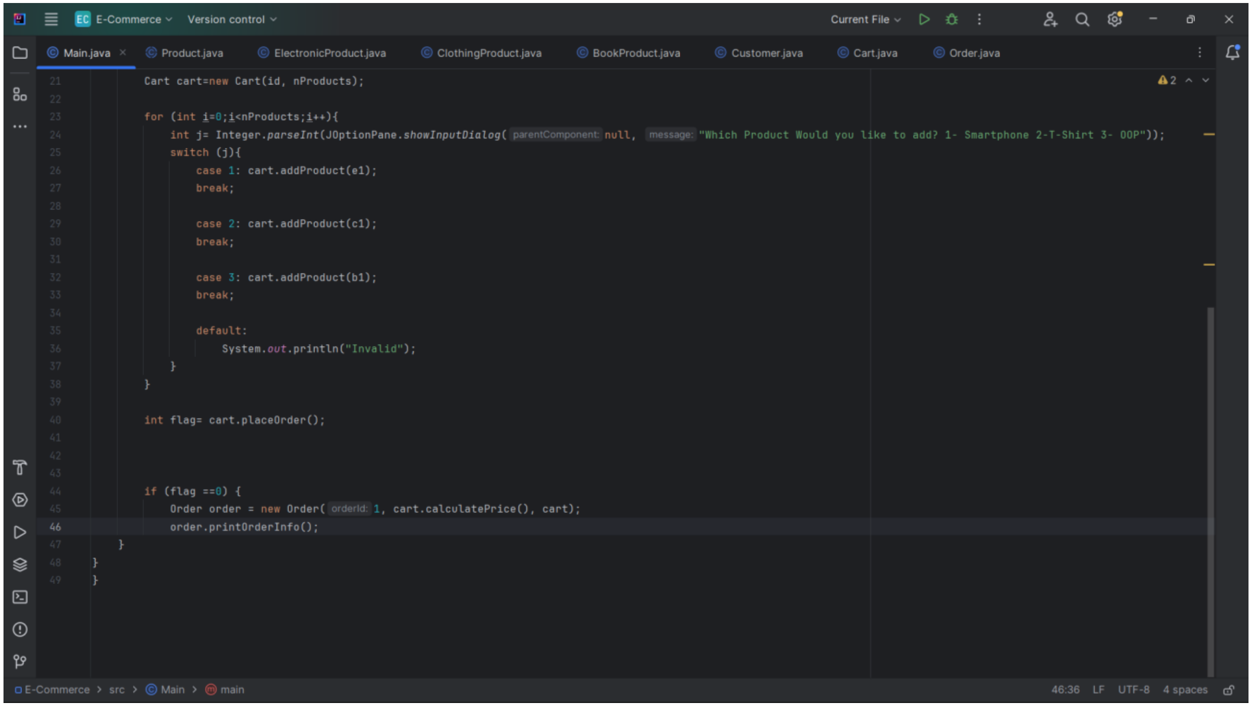
```java
    public Product[] getProducts() { return products; }

    void addProduct (Product products){
        for (int i=0;i<nProducts;i++){
            if (this.products[i]==null) {
                this.products[i] = products;
                break;
            }
        }
    }
    void removeProduct (Product[] products){
        for (int i=0;i<products.length;i++){
            if (this.products[i]!=null) {
                this.products[i] = null;
                break;
            }
        }
    }
    float calculatePrice () {
        float sum = 0;
        for (int i = 0; i< nProducts; i++) {
            if (products[i] != null)
                sum += products[i].getPrice();
        }
        return sum;
    }

    int placeOrder(){
       return JOptionPane.showInternalConfirmDialog( parentComponent: null, message: "Your total is $"+calculatePrice()+" Would you like to place the order?");
    }
```



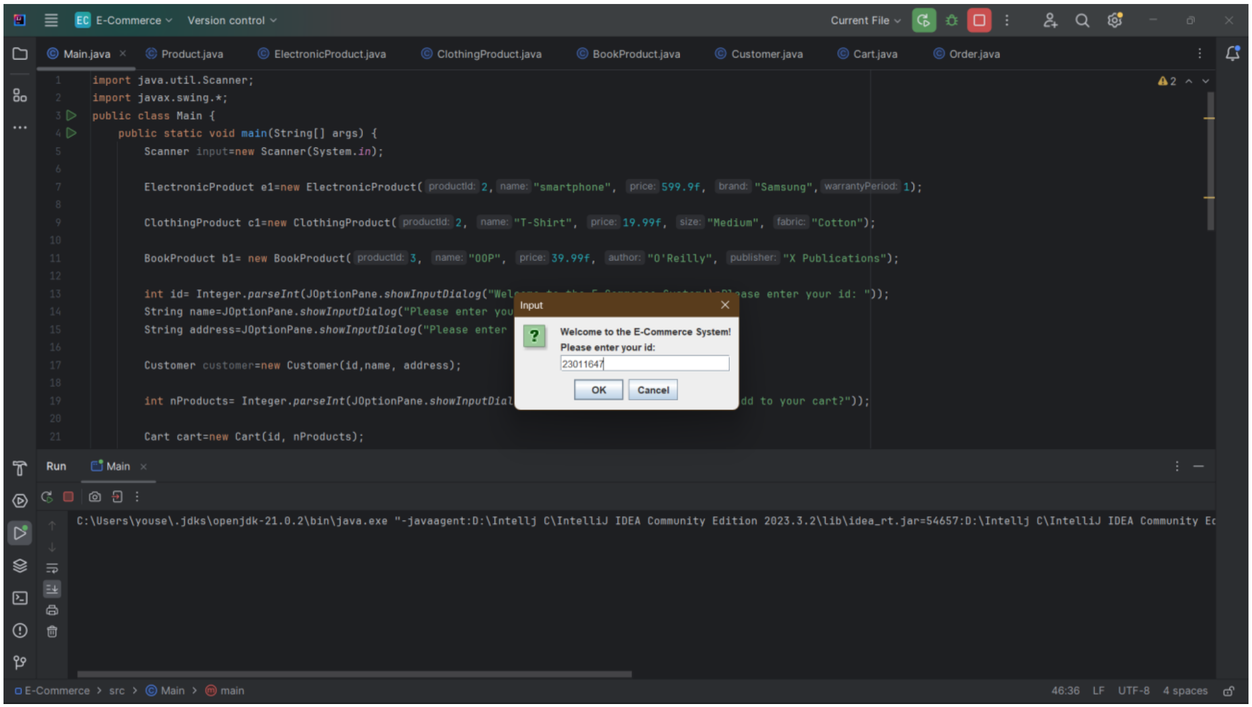
```java
public class Order {
    protected int orderId;
    protected float totalPrice;
    Cart cart = new Cart();
    Product[] products = new Product[cart.nProducts];

    Order() {}

    Order(int orderId, float totalPrice, Cart cart) {
        this.cart = cart;
        this.orderId = orderId;
        this.totalPrice = totalPrice;
    }


    void printOrderInfo() {
        System.out.println("Here's your order's summary: ");
        System.out.println("customerId: " + cart.getCustomerId());
        System.out.println("orderId: " + orderId);

        for (int i = 0; i < cart.nProducts; i++) {
            System.out.println(cart.products[i].getName() + "- $" + cart.products[i].getPrice());
        }

        System.out.println("totalPrice: $" + totalPrice);
    }
```



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

        ElectronicProduct e1=new ElectronicProduct( productId: 2, name: "smartphone",  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 Publications");

        int id= Integer.parseInt(JOptionPane.showInputDialog("Welcome to the E-Commerce System!\nPlease enter your id: "));
        String name=JOptionPane.showInputDialog("Please enter your name: ");
        String address=JOptionPane.showInputDialog("Please enter your address: ");

        Customer customer=new Customer(id,name, address);

        int nProducts= Integer.parseInt(JOptionPane.showInputDialog("How many products you want to add to your cart?"));

        Cart cart=new Cart(id, nProducts);

        for (int i=0;i<nProducts;i++){
            int j= Integer.parseInt(JOptionPane.showInputDialog( parentComponent: null,  message: "Which Product Would you like to add? 1- Smartphone 2-T-Shirt 3- OOP"));
            switch (j){
                case 1: cart.addProduct(e1);
                break;

                case 2: cart.addProduct(c1);
                break;

                case 3: cart.addProduct(b1);
                break;

                default:
                    System.out.println("Invalid");
```



```java
        Cart cart=new Cart(id, nProducts);

        for (int i=0;i<nProducts;i++){
            int j= Integer.parseInt(JOptionPane.showInputDialog( parentComponent: null,  message: "Which Product Would you like to add? 1- Smartphone 2-T-Shirt 3- OOP"));
            switch (j){
                case 1: cart.addProduct(e1);
                break;

                case 2: cart.addProduct(c1);
                break;

                case 3: cart.addProduct(b1);
                break;

                default:
                    System.out.println("Invalid");
            }
        }

        int flag= cart.placeOrder();



        if (flag ==0) {
            Order order = new Order( orderId: 1, cart.calculatePrice(), cart);
            order.printOrderInfo();
        }
    }
}
```



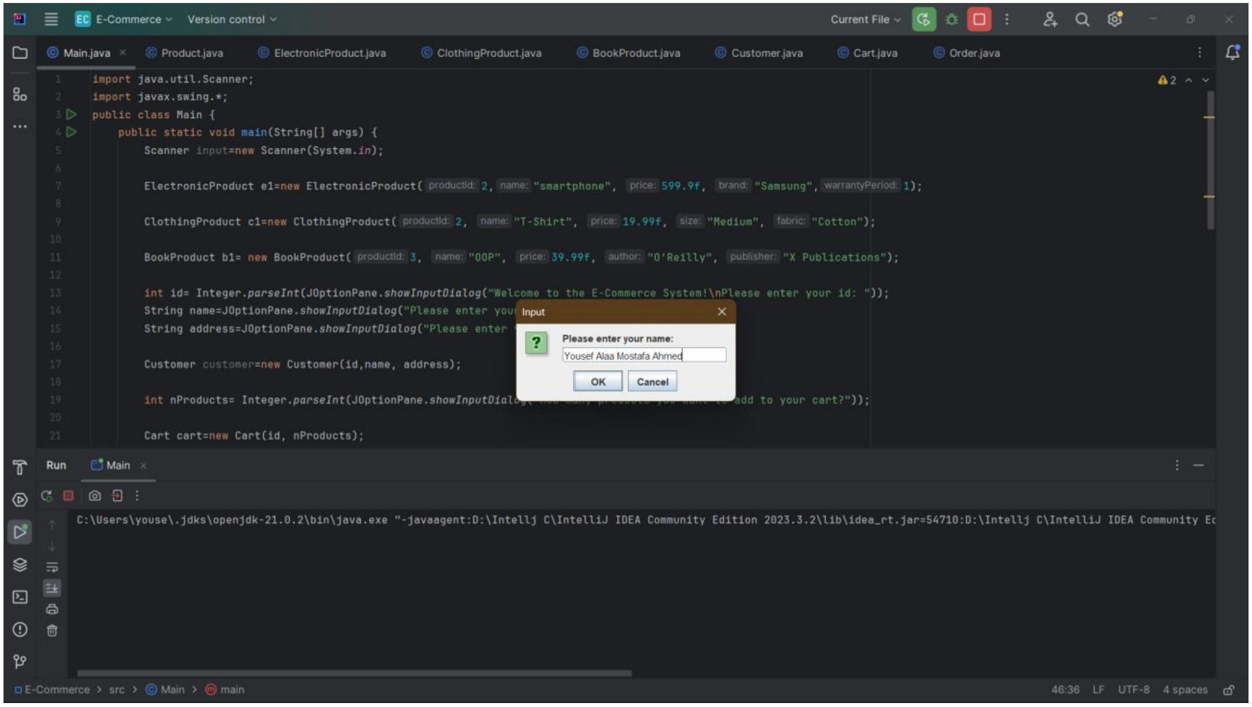
```
import java.util.Scanner;
import javax.swing.*;
public class Main {
    public static void main(String[] args) {
        Scanner input=new Scanner(System.in);

        ElectronicProduct e1=new ElectronicProduct( productId: 2, name: "smartphone",  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 Publications");

        int id= Integer.parseInt(JOptionPane.showInputDialog("Wel                                  ease enter your id: "));
        String name=JOptionPane.showInputDialog("Please enter you
        String address=JOptionPane.showInputDialog("Please enter

        Customer customer=new Customer(id,name, address);

        int nProducts= Integer.parseInt(JOptionPane.showInputDial                                  dd to your cart?"));

        Cart cart=new Cart(id, nProducts);
```

Input

Welcome to the E-Commerce System!
Please enter your id:
23011647

OK   Cancel

```
C:\Users\youse\.jdks\openjdk-21.0.2\bin\java.exe "-javaagent:D:\Intellj C\IntelliJ IDEA Community Edition 2023.3.2\lib\idea_rt.jar=54657:D:\Intellj C\IntelliJ IDEA Community Ec
```



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

        ElectronicProduct e1=new ElectronicProduct( productId: 2, name: "smartphone",  price: 599.9f,  brand: "Samsung", warrantyPeriod: 1);

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        BookProduct b1= new BookProduct( productId: 3,  name: "OOP",  price: 39.99f,  author: "O'Reilly",  publisher: "X Publications");

        int id= Integer.parseInt(JOptionPane.showInputDialog("Welcome to the E-Commerce System!\nPlease enter your id: "));
        String name=JOptionPane.showInputDialog("Please enter you
        String address=JOptionPane.showInputDialog("Please enter

        Customer customer=new Customer(id,name, address);

        int nProducts= Integer.parseInt(JOptionPane.showInputDialo                                  add to your cart?"));

        Cart cart=new Cart(id, nProducts);
```
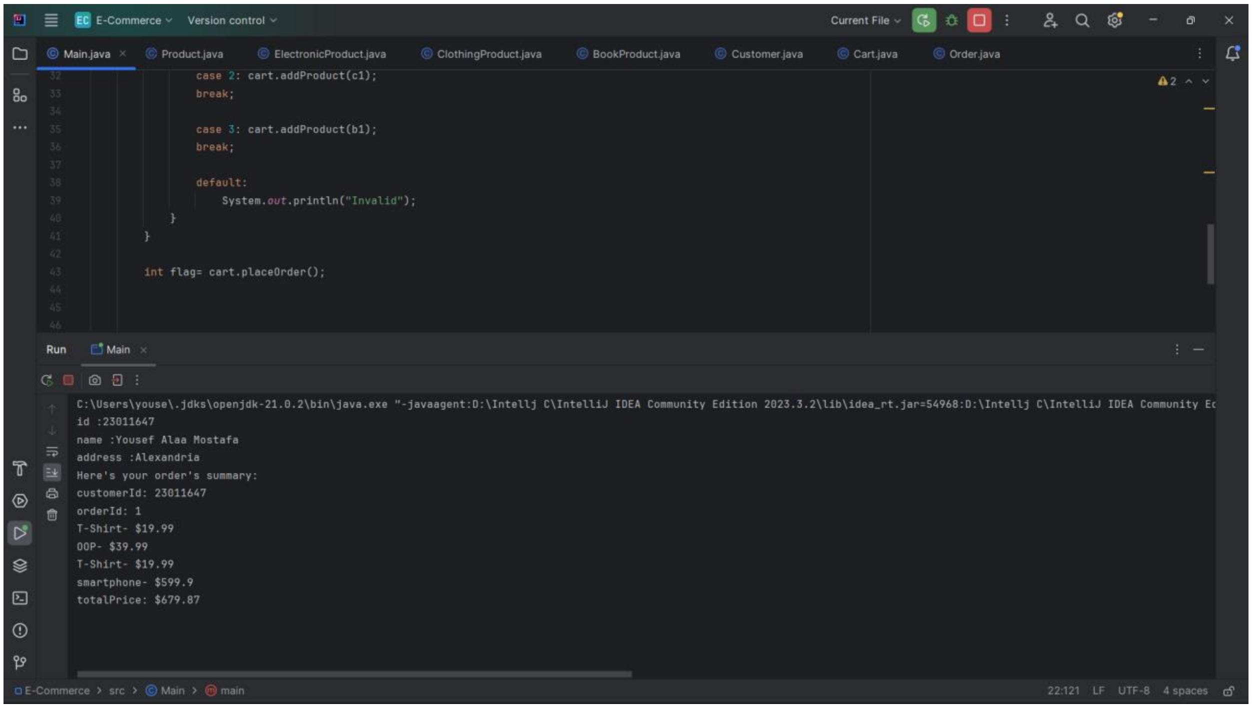

Input

Please enter your name:
Yousef Alaa Mostafa Ahmed

OK   Cancel

```
C:\Users\youse\.jdks\openjdk-21.0.2\bin\java.exe "-javaagent:D:\Intellj C\IntelliJ IDEA Community Edition 2023.3.2\lib\idea_rt.jar=54710:D:\Intellj C\IntelliJ IDEA Community Ec
```



```java
                    case 2: cart.addProduct(c1);
                    break;

                    case 3: cart.addProduct(b1);
                    break;

                    default:
                        System.out.println("Invalid");
                }
            }

            int flag= cart.placeOrder();


```

```
C:\Users\youse\.jdks\openjdk-21.0.2\bin\java.exe "-javaagent:D:\Intellj C\IntelliJ IDEA Community Edition 2023.3.2\lib\idea_rt.jar=54968:D:\Intellj C\IntelliJ IDEA Community Ec
id :23011647
name :Yousef Alaa Mostafa
address :Alexandria
Here's your order's summary:
customerId: 23011647
orderId: 1
T-Shirt- $19.99
OOP- $39.99
T-Shirt- $19.99
smartphone- $599.9
totalPrice: $679.87
```