Name : يامن ابوالنجا حسين السيد
Id : 23011184
Project programming 1

```java
public class Product {
    private int productId;
    private String name;
    private double price;


    public Product(int productId, String name, double price) {
        this.productId = Math.abs(productId);
        this.name = name;
        this.price = Math.abs(price);
    }


    public int getProductId() {
        return productId;
    }

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

    public String getName() {
        return name;
    }

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

    public double getPrice() {
        return price;
    }

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

```java
public class ElectronicProduct extends Product {
    private String brand;
    private int warrantyPeriod;

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

    public String getBrand() {
        return brand;
    }

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

    public int getWarrantyPeriod() {
        return warrantyPeriod;
    }

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

```java
public class ClothingProduct extends Product {
    private String size;
    private String fabric;

    public ClothingProduct(int productId, String name, double price, String size, String fabric) {
        super(productId, name, price);
        this.size = size;
        this.fabric = fabric;
    }

    public String getSize() {
        return size;
    }

    public void setSize(String size) {
        this.size = size;
    }

    public String getFabric() {
        return fabric;
    }

    public void setFabric(String fabric) {
        this.fabric = fabric;
    }
}
```

```java
public class BookProduct extends Product {
    private String author;
    private String publisher;

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

    public String getAuthor() {
        return author;
    }

    public void setAuthor(String author) {
        this.author = author;
    }

    public String getPublisher() {
        return publisher;
    }

    public void setPublisher(String publisher) {
        this.publisher = publisher;
    }
}
```

```java
public class Customer {
    private int customerId;
    private String name;
    private String address;

    public Customer() {

    }

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

    public int getCustomerId() {
        return customerId;
    }

    public void setCustomerId(int customerId) {
        this.customerId = Math.abs(customerId);
    }

    public String getName() {
        return name;
    }

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

    public String getAddress() {
        return address;
    }

    public void setAddress(String address) {
        this.address = address;
    }
}
```

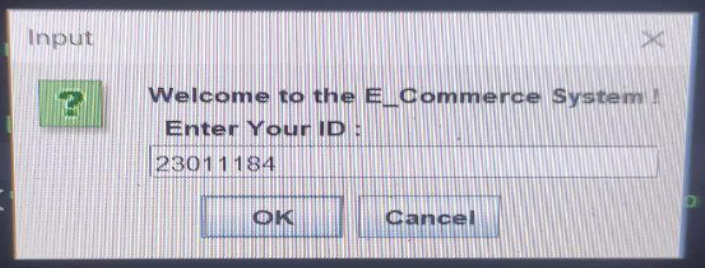
```java
import javax.swing.*;
public class Cart {
    private int customerId ;
    private int nProducts=0 ;
    private int n ;
    private Product[] products =new Product[n];

    public int getCustomerId() {
        return customerId;
    }

    public void setCustomerId(int customerId) {
            this.customerId = Math.abs(customerId);
    }

    public int getnProducts() {
        return nProducts;
    }

    public void setnProducts(int nProducts) {
            this.nProducts = Math.abs(nProducts);
    }
    public int getN() {
        return n;
    }

    public void setN(int n) {
        this.n = n;
    }

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

    public void setProducts(Product[] products) {
        this.products = products;
    }

    public int addProduct(Product product){
        if(nProducts< products.length){
            products[nProducts]= product ;
            JOptionPane.showMessageDialog(null,"Product is add to the cart");
            return nProducts++;
        }
        else {
            JOptionPane.showMessageDialog(null,"Can't add the product , because the cart is full ");
            return nProducts ;
        }
    }

    public void removeProduct(Product product){
        for (int i=0 ;i<products.length ; i++){
            if(products[i]==product){
                products[i] = null;
                this.nProducts--;
                break;
            }

        }
    }
    public float calculatePrice(Product[] products){
        float sum =0 ;
        for (int i=0 ; i<nProducts ; i++){
            if ( products != null) {
                sum += products[i].getPrice();
            }
        }
        return sum ;
```

```
    }
    public void placeOrder(){
        if (nProducts ==0){
            JOptionPane.showMessageDialog(null,"Can't place order ,because  th cart is empty");
        }
        for (int i=0 ; i<n ; i++) {
            JOptionPane.showMessageDialog(null,"Product ID : "+products[i].getProductId()+"\n"
                    +"Product Name : "+products[i].getName()+"\n"
                    +"Product Price : "+products[i].getPrice()+"\n"
                    +"Total Pricce : "+calculatePrice(products)+"\n\n");
        }

    }
}
```

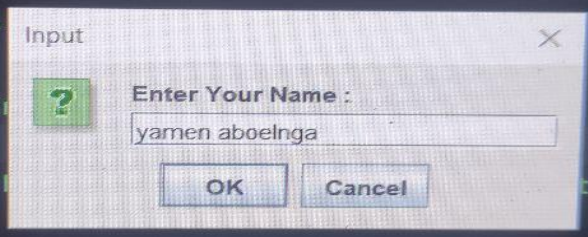
```
import javax.swing.*;

public class Order extends Cart{
    private int orderId =1 ;
    private float totalPrice = calculatePrice(getProducts()) ;

    public int Order(){
        return orderId++;
    }

    public int getOrderId() {
        return orderId;
    }

    public void setOrderId(int orderId) {
        this.orderId =Math.abs(orderId);
    }

    public float getTotalPrice() {
        return totalPrice;
    }

    public void setTotalPrice(float totalPrice) {
        this.totalPrice =Math.abs(totalPrice);
    }
    public void printOrderInfo(Cart cart){
        JOptionPane.showMessageDialog(null,"Order ID : "+getOrderId());
        cart.placeOrder();

    }
}
```

```java
import javax.swing.*;
public class EcommerceSystem {
    public static void main(String[] args) {
        ElectronicProduct smartPhone = new ElectronicProduct(1,"Smart Phone",599.9,"Samsung",1);
        ClothingProduct T_shirt = new ClothingProduct(2,"T_shirt",19.99,"Medium","Cotton");
        BookProduct oop = new BookProduct(3,"OOP",39.99,"O'Reilly","X Publication");
        Customer c1 = new Customer();
        Cart cart1 =new Cart();
        Order o1 =new Order();
        int id = Integer.parseInt(JOptionPane.showInputDialog("Welcome to the E_Commerce System ! \n
Enter Your ID : "));
        c1.setCustomerId(id);
        cart1.setCustomerId(id);
        String cuustumer_name =JOptionPane.showInputDialog("Enter Your Name : ");
        c1.setName(cuustumer_name);
        String cuustumer_address =JOptionPane.showInputDialog(" Enter Your Address : ");
        c1.setAddress(cuustumer_address);
        int num1 = Integer.parseInt(JOptionPane.showInputDialog("How many products you want to add to
your cart ? "));
        cart1.setN(num1);
        Product[] products = new Product[cart1.getN()];
        cart1.setProducts(products);
        for (int i=1 ; i<=cart1.getN(); i++) {
            int num2 = Integer.parseInt(JOptionPane.showInputDialog("Which product you want to add ?
\n 1- Smart Phone   2- T_shirt   3- OPP"+"\n Enter your choise :"));
            switch (num2) {
                case 1:cart1.addProduct(smartPhone);
                    break;
                case 2:cart1.addProduct(T_shirt);
                    break;
                case 3:cart1.addProduct(oop);
                    break;
            }
        }
        JOptionPane.showMessageDialog(null,"Your Total Price is
"+cart1.calculatePrice(cart1.getProducts()));
        int num3 =Integer.parseInt(JOptionPane.showInputDialog("Would you want to place order? \n 1-
Yes  2- No"+"\n Enter your choise : "));
        switch (num3){
            case 1: o1.printOrderInfo(cart1);
        }
    }
}
```

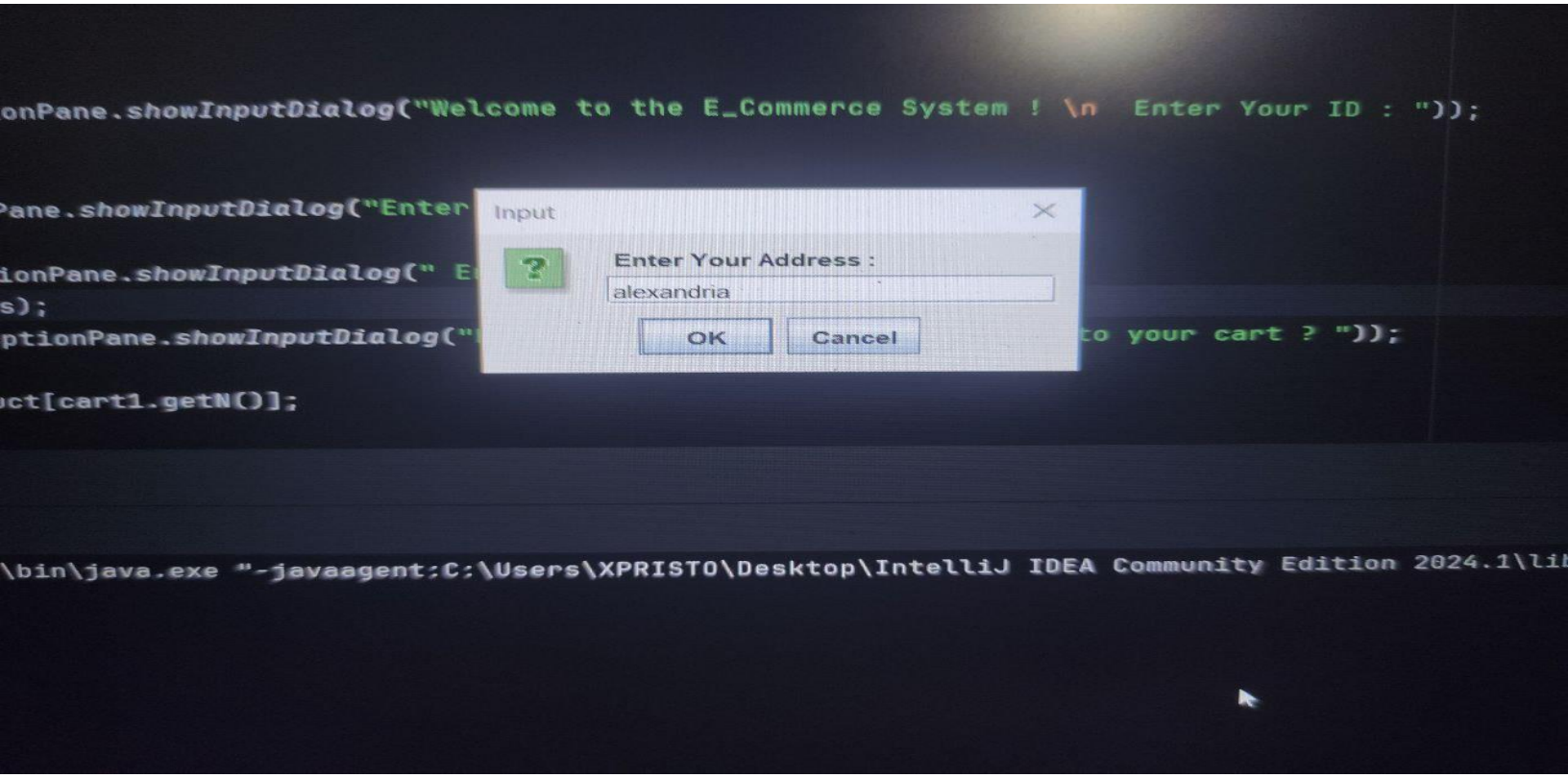
```
duct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");

otionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

onPane.showInputDialog("Ente

OptionPane.showInputDialog("
ress);
(JOptionPane.showInputDialog(                                    o your cart ? "));

oduct[cart1.getN()];
);
```

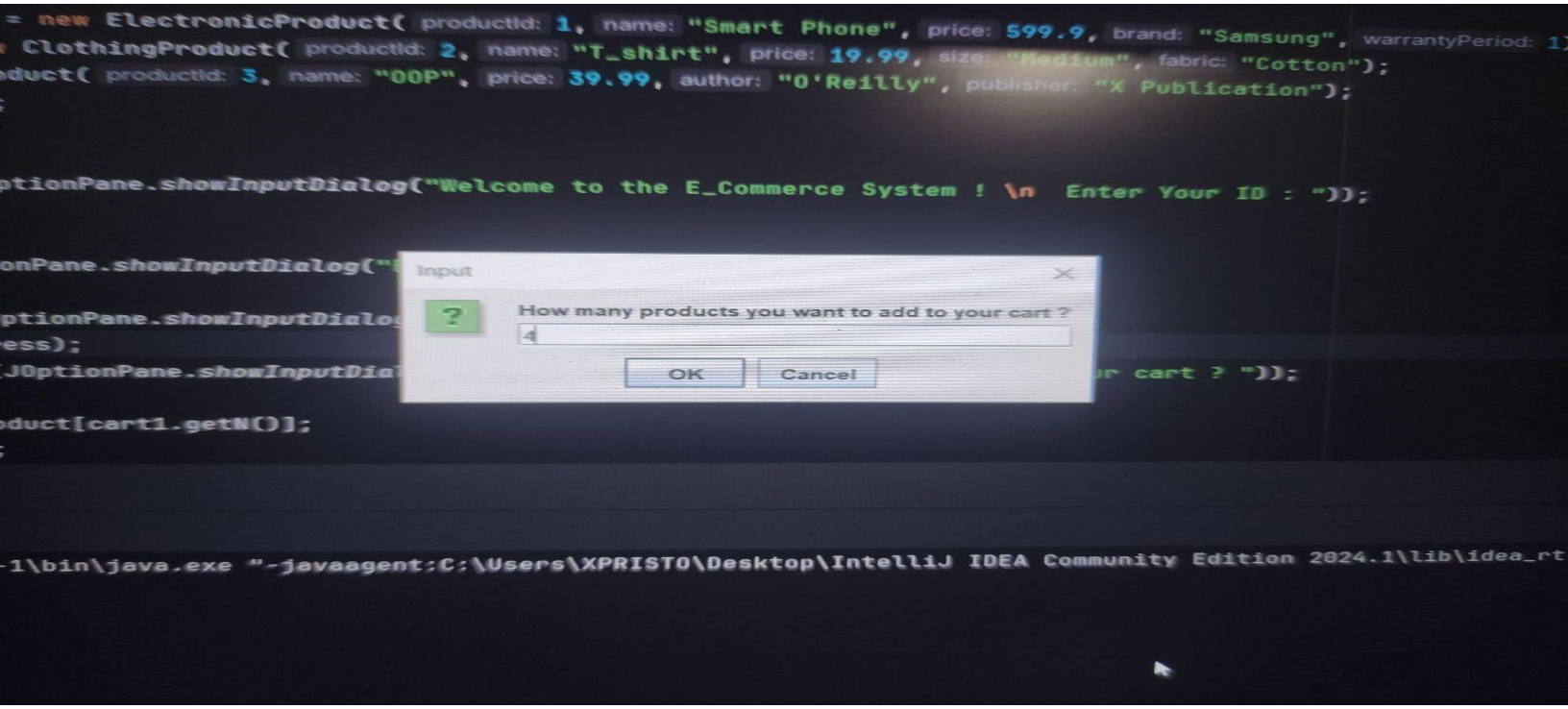



```
2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.

ng[] args) {
none = new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warran
= new ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
okProduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
er();


t(JOptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

;
JOptionPane.showInputDialog("Enter
me);
s =JOptionPane.showInputDialog("
_address);
eInt(JOptionPane.showInputDialog("                                    to your cart ? "));

w Product[cart1.getN()];
ucts);
```

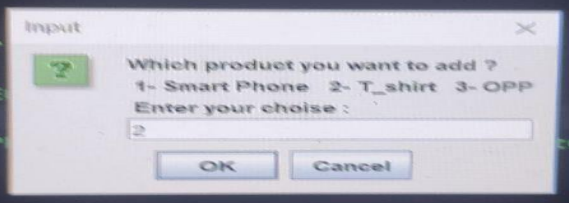



```
1.0.2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib
```

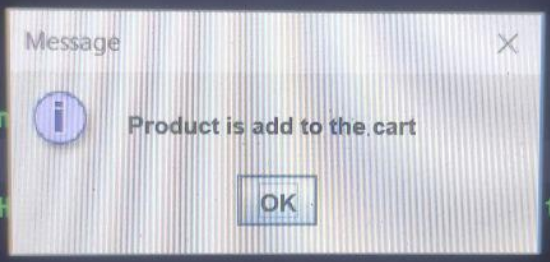

onPane.showInputDialog("Welcome to the E_Commerce System ! \n Enter Your ID : "));
Pane.showInputDialog("Enter
ionPane.showInputDialog(" E
s);
ptionPane.showInputDialog("
to your cart ? "));
uct[cart1.getN()];
Input
Enter Your Address :
alexandria
OK
Cancel
\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\li


= new ElectronicProduct(productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1
ClothingProduct(productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
oduct(productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
ptionPane.showInputDialog("Welcome to the E_Commerce System ! \n Enter Your ID : "));
onPane.showInputDialog("
ptionPane.showInputDialo
ess);
JOptionPane.showInputDia
r cart ? "));
oduct[cart1.getN()];
Input
How many products you want to add to your cart ?
4
OK
Cancel
-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt

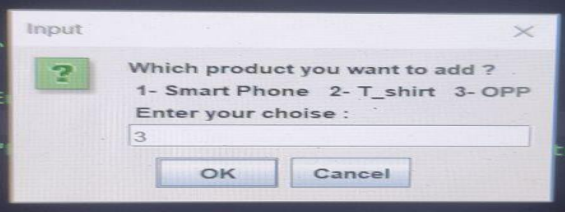
```
e = new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
ew ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
roduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
);

OptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

tionPane.showInputDialog("Enter
JOptionPane.showInputDialog(" E
dress);
t(JOptionPane.showInputDialog("                                    to your cart ? "));
roduct[cart1.getN()];
);

2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.
```



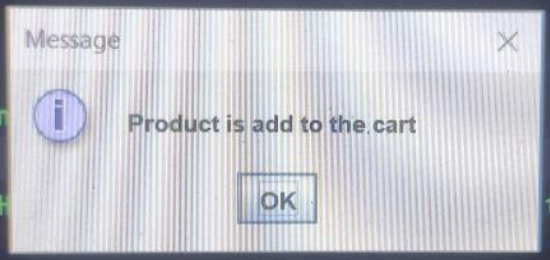

```
 = new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
w ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
oduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
;


ptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));


ionPane.showInputDialog("Enter

OptionPane.showInputDialog(" En
ress);
(JOptionPane.showInputDialog("H                                    to your cart ? "));

oduct[cart1.getN()];
;


2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.
```



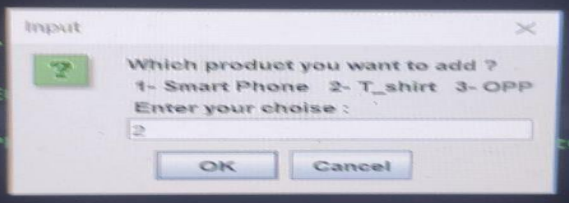
```
= new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
w ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
oduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
;

ptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

onPane.showInputDialog("Enter
ptionPane.showInputDialog(" E
ress);
(JOptionPane.showInputDialog("                                    to your cart ? "));

oduct[cart1.getN()];
;

-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.ja
```



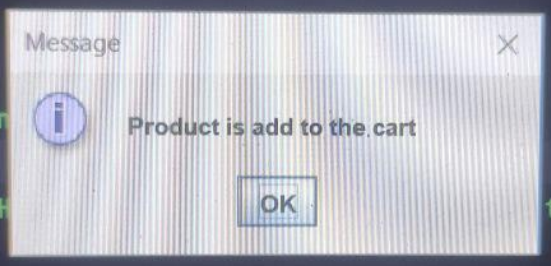

```
= new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
w ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
oduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
;

ptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

ionPane.showInputDialog("Enter
OptionPane.showInputDialog(" En
ress);
(JOptionPane.showInputDialog("H                                    to your cart ? "));

oduct[cart1.getN()];
;

2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.
```

```
e = new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1)
ew ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
roduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
);

OptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

tionPane.showInputDialog("Enter
JOptionPane.showInputDialog(" E
dress);
t(JOptionPane.showInputDialog("                                                    to your cart ? "));

roduct[cart1.getN()];
);

2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.
```




```
 = new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
w ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
oduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
;

ptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

ionPane.showInputDialog("Enter
OptionPane.showInputDialog(" En
ress);
(JOptionPane.showInputDialog("H                                                    to your cart ? "));

oduct[cart1.getN()];
;

2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.
```



```
one = new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warra
= new ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
okProduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
er();

t(JOptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));

JOptionPane.showInputDialog("Enter
me);
s =JOptionPane.showInputDialog("
_address);
eInt(JOptionPane.showInputDialog("
                                                    to your cart ? "));

ew Product[cart1.getN()];
ucts);
```

Input

Which product you want to add ?
1- Smart Phone 2- T_shirt 3- OPP
Enter your choise :
1

OK Cancel

```
1.0.2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\li
```

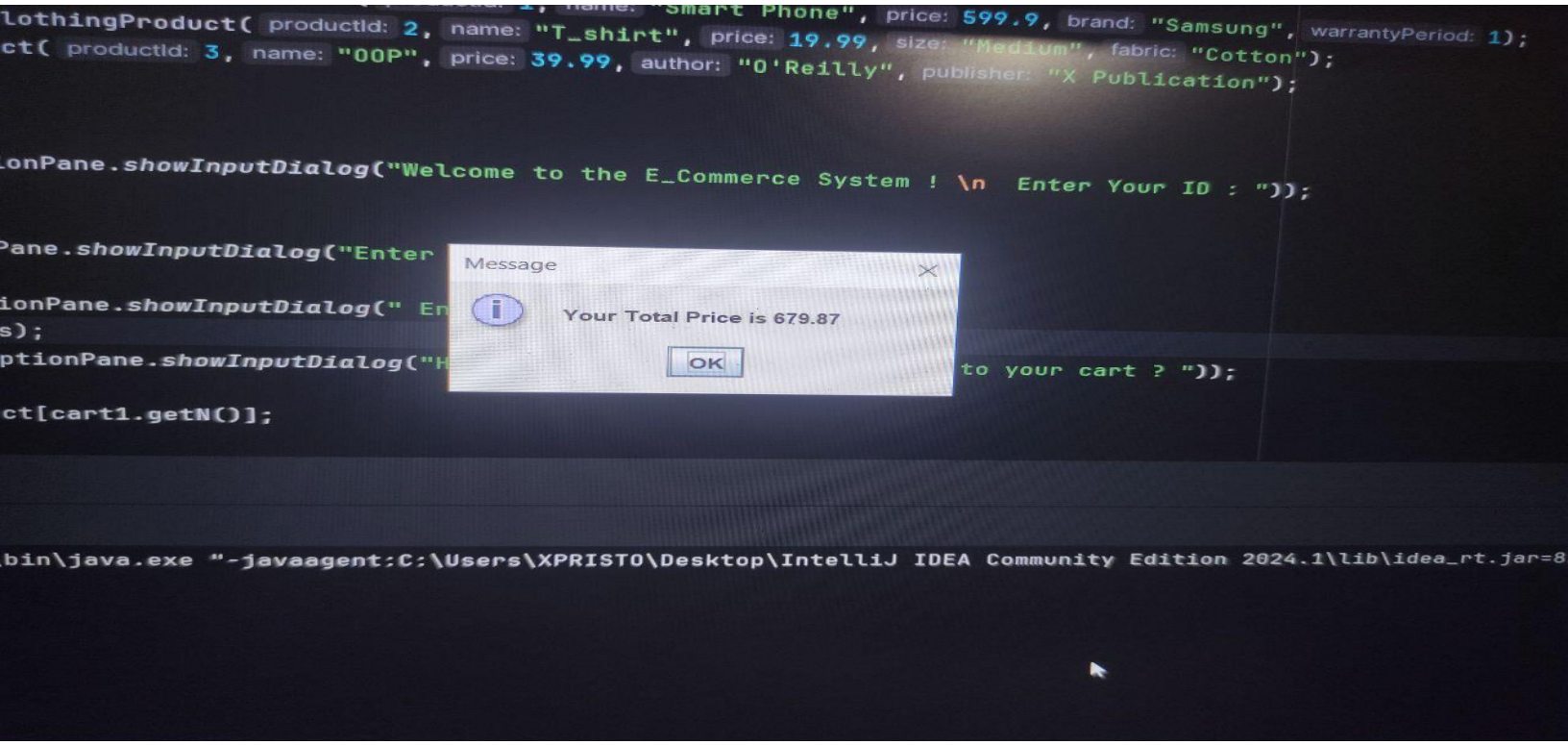
```
= new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
w ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
oduct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
;


ptionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));


ionPane.showInputDialog("Enter

OptionPane.showInputDialog(" En
ress);
(JOptionPane.showInputDialog("H                                    to your cart ? "));

oduct[cart1.getN()];
;
```

Message

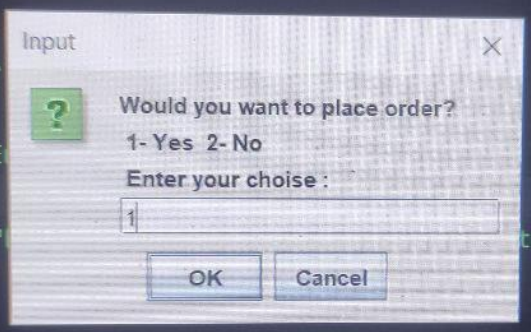
Product is add to the cart

OK

```
2-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.
```

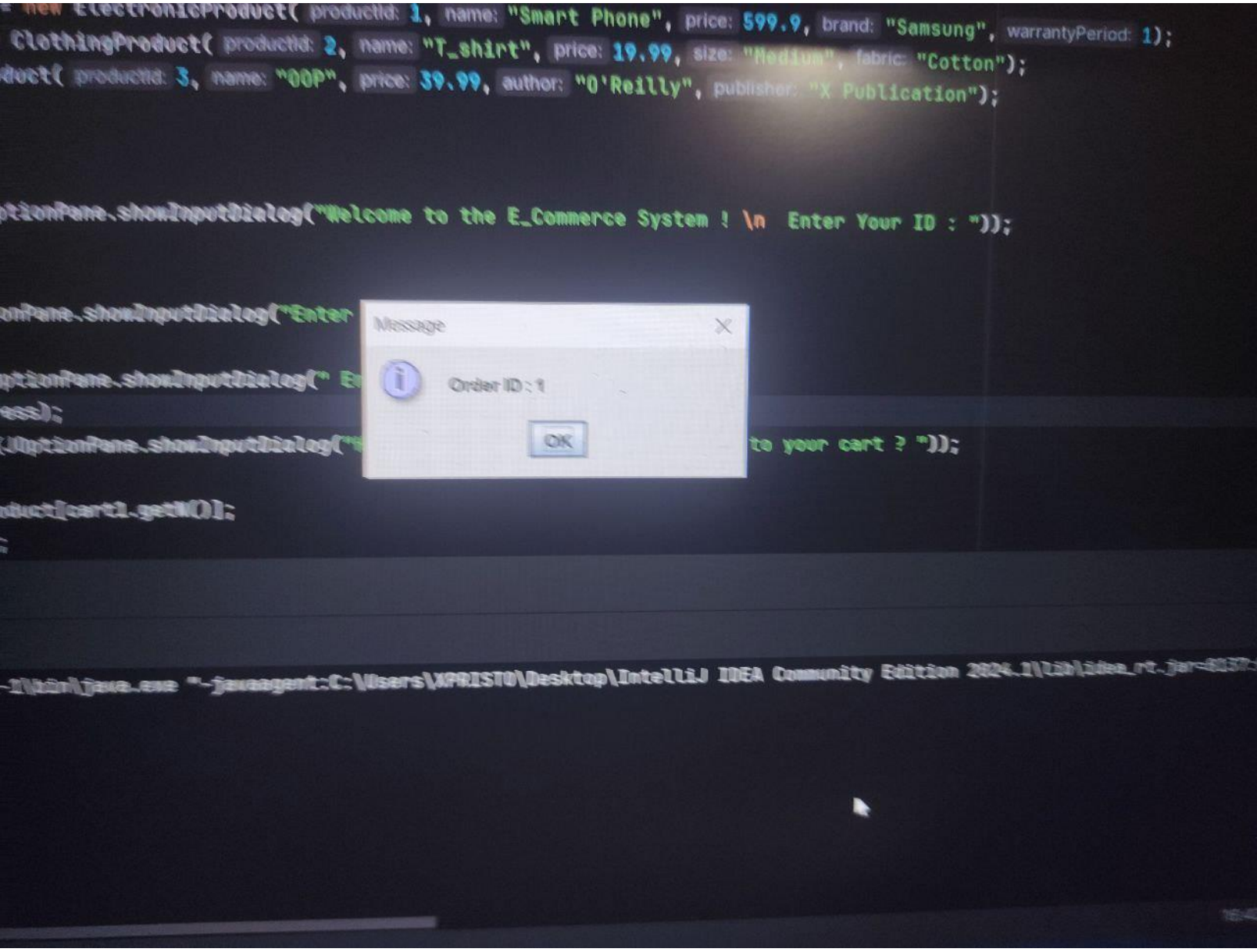

lothingProduct(productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
ct(productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
ionPane.showInputDialog("Welcome to the E_Commerce System ! \n Enter Your ID : "));
Pane.showInputDialog("Enter
ionPane.showInputDialog(" En
s);
ptionPane.showInputDialog("H
to your cart ? "));
ct[cart1.getN()];
Message
Your Total Price is 679.87
OK
\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.jar=8

```
new ElectronicProduct( productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
ClothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
uct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");


ionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));


nPane.showInputDialog("Enter

tionPane.showInputDialog(" E
ss);
OptionPane.showInputDialog("                                    to your cart ? "));

uct[cart1.getN()];
```

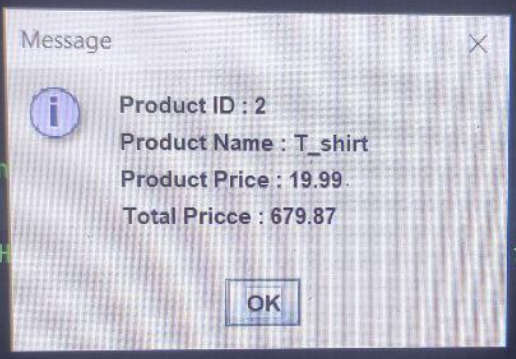



```
\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.jar=8137:C:
```

16:42


= new ElectronicProduct(productId: 1, name: "Smart Phone", price: 599.9, brand: "Samsung", warrantyPeriod: 1);
ClothingProduct(productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
duct(productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");
ptionPane.showInputDialog("Welcome to the E_Commerce System ! \n Enter Your ID : "));
onPane.showInputDialog("Enter
ptionPane.showInputDialog(" E
ess);
(JOptionPane.showInputDialog("
to your cart ? "));
duct[cart1.getID()];
;
Message
Order ID : 1
OK
-1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.jar

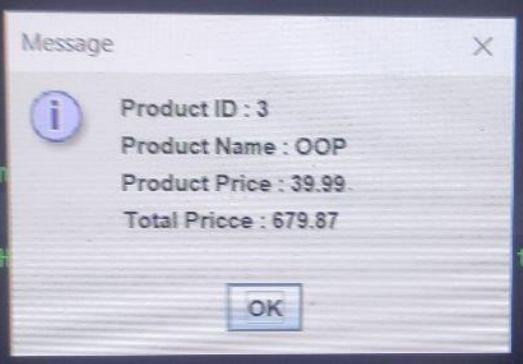
```
othingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
t( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");


onPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));


ane.showInputDialog("Enter

ionPane.showInputDialog(" En
s);
ptionPane.showInputDialog("H                                    to your cart ? "));

ct[cart1.getN()];
```




```
\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.jar=8137:C:\
```

16:42

```
lothingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
ct( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");


ionPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));


Pane.showInputDialog("Enter

tionPane.showInputDialog(" En
ss);
OptionPane.showInputDialog("H                                    to your cart ? "));

uct[cart1.getN()];
```

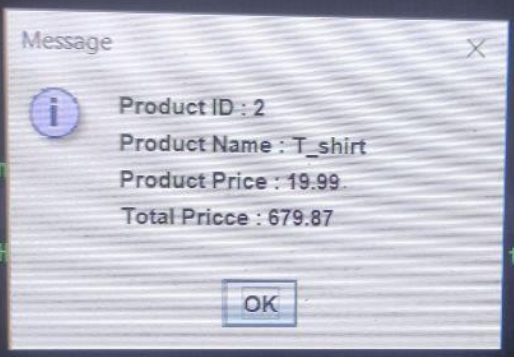



```
1\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.jar=8137:
```

16:43

main

```
othingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton");
t( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");


onPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));


ane.showInputDialog("Enter

onPane.showInputDialog(" En
);
tionPane.showInputDialog("H                                    to your cart ? "));

ct[cart1.getN()];
```

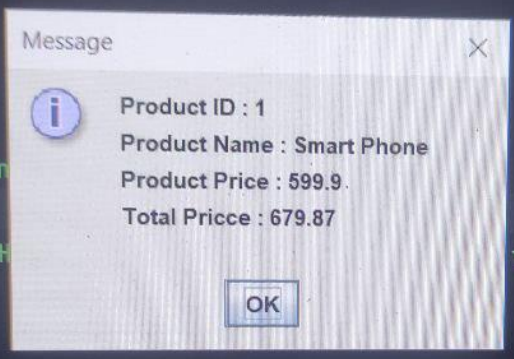



```
bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.jar=8137:C:\Us
```

16:42 CR

main

```
...othingProduct( productId: 2, name: "T_shirt", price: 19.99, size: "Medium", fabric: "Cotton", brand: "Samsung", warrantyPeriod: 1);
...t( productId: 3, name: "OOP", price: 39.99, author: "O'Reilly", publisher: "X Publication");


...onPane.showInputDialog("Welcome to the E_Commerce System ! \n  Enter Your ID : "));


...ane.showInputDialog("Enter

...ionPane.showInputDialog(" En
...s);
...ptionPane.showInputDialog("H                                    to your cart ? "));

...ct[cart1.getN()];
```




```
...\bin\java.exe "-javaagent:C:\Users\XPRISTO\Desktop\IntelliJ IDEA Community Edition 2024.1\lib\idea_rt.jar=8137:C:\...
```

16:42

main