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ID : 20201040753

The Main :

```
© Main.java x © ElectronicProduct.java © Product.java © ClothingProduct.java © BookProduct.java © Customer.java © Cart.java © Order.java
1  import java.util.Arrays;
2  import java.util.Scanner;
3  public class Main {
4      public static void main(String[] args) {
5          Scanner scanner = new Scanner(System.in);
6          ElectronicProduct electronicProduct = new ElectronicProduct( productId: 1, name: "smartphone", price: 599.99f , brand: "Samsung", warrantyPeriod: 1 );
7
8          ClothingProduct clothingProduct = new ClothingProduct( productId: 2, name: "T-shirt", price: 19.99f, size: "Medium", fabric: "Cotton");
9
10         BookProduct bookProduct = new BookProduct( productId: 3, name: "00P", price: 39.99f, author: "O'Reilly", publisher: "X Publications");
11         System.out.println("Welcome to E-commerce System");
12         System.out.print("Enter your customer ID: ");
13         long customerId = Math.abs(scanner.nextLong());
14         scanner.nextLine(); // Consume newline character
15         System.out.print("Enter your name: ");
16         String name = scanner.nextLine();
17         System.out.print("Enter your address: ");
18         String address = scanner.nextLine();
19         Customer customer = new Customer(customerId, name, address);
20         System.out.print("How many products you want to add to your cart? ");
21         int nProducts = Math.abs(scanner.nextInt());
22         scanner.nextLine();
23         Cart cart = new Cart(customer.getCustomerId(), nProducts);
24         for (int i = 0; i < nProducts; i++) {
25             System.out.println("Choose product type:");
26             System.out.println("1. Electronic");
27             System.out.println("2. Clothing");
28             System.out.println("3. Book");
29             int productType = scanner.nextInt();
30             scanner.nextLine();
31             Product product = null ;
```

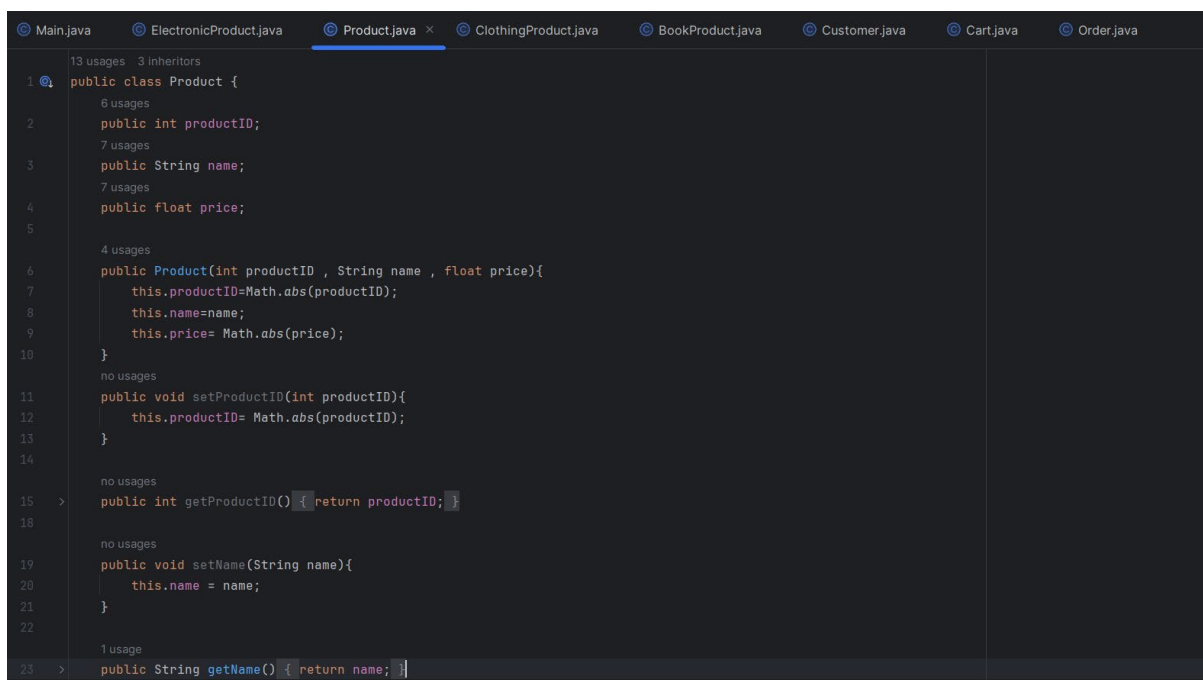
```
31         Product product = null ;
32         switch (productType) {
33             case 1:
34                 product = new ElectronicProduct(electronicProduct.productId, electronicProduct.name, electronicProduct.price, electronicProduct.brand, electronicProduct.warrantyPeriod);
35                 break;
36             case 2:
37                 product = new ClothingProduct(clothingProduct.productId, clothingProduct.name, clothingProduct.price, clothingProduct.size, clothingProduct.fabric);
38                 break;
39             case 3:
40                 product = new BookProduct(bookProduct.productId, bookProduct.name, bookProduct.price, bookProduct.author, bookProduct.publisher);
41                 break;
42             default:
43                 product = new Product(productType, product.name, product.price);
44                 break;
45         }
```

```

44         break;
45     }
46     cart.addProduct(product, i);
47 }
48 System.out.print("Your total is " +cart.calculatePrice()+" . Would you like to place the order ? 1-Yes 2-No");
49 String placeOrder = scanner.nextLine();
50 if (placeOrder.equalsIgnoreCase( anotherString: "Yes")) {
51     Order order = new Order(customer.getCustomerID(), orderId: 1, cart.calculatePrice(), cart.getProducts());
52     order.printOrderInfo();
53     cart.placeOrder();
54 } else {
55     System.out.println("Order placement canceled.");
56 }
57 scanner.close();
58 System.out.println("Here's your order's summary :");
59 System.out.println("Order ID : 1");
60 System.out.println("Customer ID : "+customerId);
61 System.out.println("Products : ");
62 System.out.println(Arrays.toString(cart.products));
63 System.out.println("Total price : "+cart.calculatePrice());
64 }
65 }

```

## Product class :



```

13 usages 3 inheritors
1 public class Product {
2     6 usages
3     public int productID;
4     7 usages
5     public String name;
6     7 usages
7     public float price;
8
9     4 usages
10    public Product(int productID , String name , float price){
11        this.productID=Math.abs(productID);
12        this.name=name;
13        this.price= Math.abs(price);
14    }
15    no usages
16    public void setProductID(int productID){
17        this.productID= Math.abs(productID);
18    }
19    no usages
20    public int getProductID() { return productID; }
21
22    no usages
23    public void setName(String name){
24        this.name = name;
25    }
26
27    1 usage
28    public String getName() { return name; }

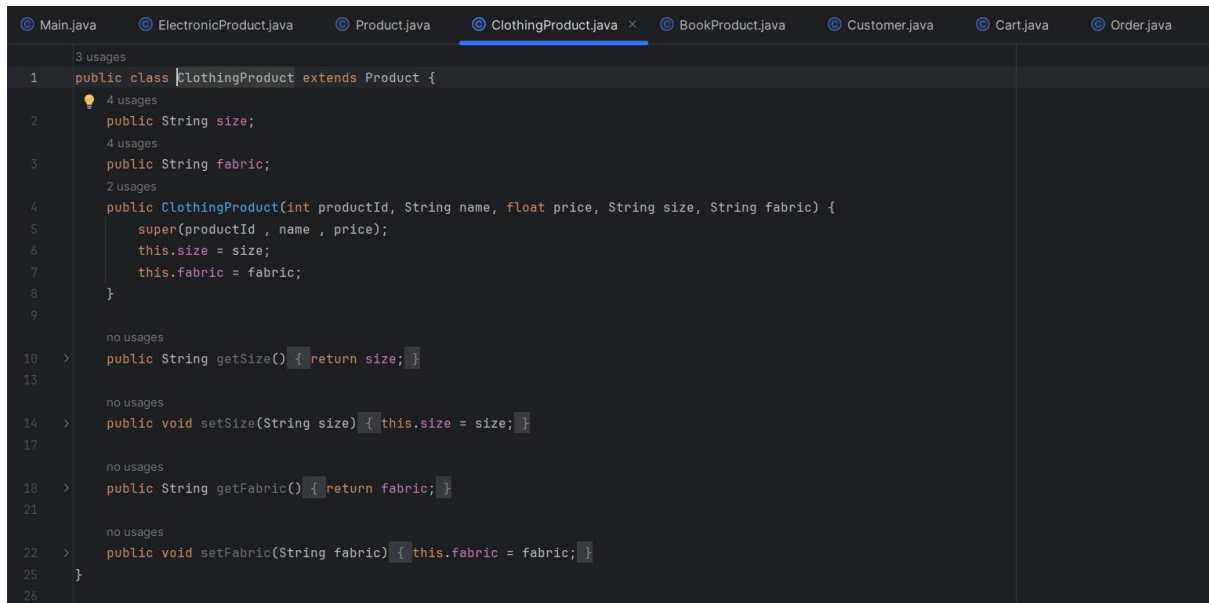
```

```

23 > public String getName() { return name; }
26
27 > public void setPrice(float price) { this.price = Math.abs(price); }
28    2 usages
29 > public float getPrice() { return price; }
30
31 }
32
33
34

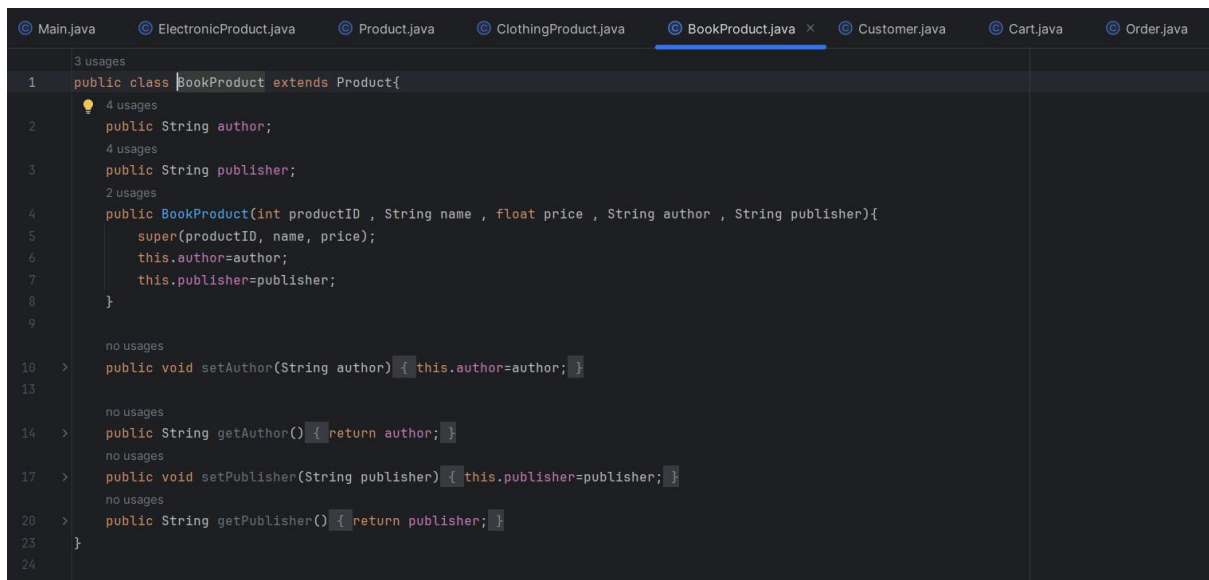
```

# Clothing Product Class



```
1 public class ClothingProduct extends Product {  
2     public String size;  
3     public String fabric;  
4     public ClothingProduct(int productId, String name, float price, String size, String fabric) {  
5         super(productId, name, price);  
6         this.size = size;  
7         this.fabric = fabric;  
8     }  
9  
10    no usages  
11    public String getSize() { return size; }  
12  
13    no usages  
14    public void setSize(String size) { this.size = size; }  
15  
16    no usages  
17    public String getFabric() { return fabric; }  
18  
19    no usages  
20    public void setFabric(String fabric) { this.fabric = fabric; }  
21  
22 }  
23  
24
```

# Book Product Class



```
1 public class BookProduct extends Product {  
2     public String author;  
3     public String publisher;  
4     public BookProduct(int productId, String name, float price, String author, String publisher) {  
5         super(productId, name, price);  
6         this.author = author;  
7         this.publisher = publisher;  
8     }  
9  
10    no usages  
11    public void setAuthor(String author) { this.author = author; }  
12  
13    no usages  
14    public String getAuthor() { return author; }  
15  
16    no usages  
17    public void setPublisher(String publisher) { this.publisher = publisher; }  
18  
19    no usages  
20    public String getPublisher() { return publisher; }  
21  
22 }  
23  
24
```

# Electronic Product Class

```
1 public class ElectronicProduct extends Product {
2     public String brand;
3     public int warrantyPeriod;
4
5     public ElectronicProduct(int productId, String name, float price, String brand, int warrantyPeriod) {
6         super(productId, name, price);
7         this.brand = brand;
8         this.warrantyPeriod = Math.abs(warrantyPeriod);
9     }
10
11     public String getBrand() { return brand; }
12
13     public void setBrand(String brand) { this.brand = brand; }
14
15     public int getWarrantyPeriod() { return warrantyPeriod; }
16
17     public void setWarrantyPeriod(int warrantyPeriod) { this.warrantyPeriod = Math.abs(warrantyPeriod); }
18 }
19
```

## Customer Class

```
1 public class Customer {
2     public long customerID;
3     public String name;
4     public String address;
5
6     public Customer(long customerID, String name, String address){
7         this.customerID= Math.abs(customerID);
8         this.name=name;
9         this.address=address;
10    }
11
12    public void setName(String name) { this.name=name; }
13
14    public String getName() { return name; }
15
16    public void setCustomerID(long customerID) { this.customerID=Math.abs(customerID); }
17
18    public long getCustomerID() { return customerID; }
19
20    public void setAddress(String address) { this.address=address; }
21
22    public String getAddress() { return address; }
23 }
24
```

## Cart Class

```
© Main.java © ElectronicProduct.java © Product.java © ClothingProduct.java © BookProduct.java © Customer.java © Cart.java × © Order.java

2 usages
1 public class Cart {
2     3 usages
3     public long customerID;
4     7 usages
5     public int nProduct;
6     7 usages
7     public Product[] products;
8
9     1 usage
10    public Cart(long customerID , int nProduct){
11        this.customerID=Math.abs(customerID);
12        this.nProduct=Math.abs(nProduct);
13        this.products = new Product[nProduct];
14    }
15
16    no usages
17    public void setCustomerID(int customerID){ this.customerID=Math.abs(customerID); }
18
19    no usages
20    public long getCustomerID(){ return customerID; }
21
22    no usages
23    public void setnProduct(int nProduct){ this.nProduct=Math.abs(nProduct); }
24
25    no usages
26    public int getnProduct(){ return nProduct; }
27
28    1 usage
29    public Product[] getProducts(){ return products; }
30
31    1 usage
32    public void addProduct(Product product, int index) {
33        if (index >= 0 && index < nProduct) {
34            products[index] = product;
35        } else {
36            System.out.println("Invalid index for adding product to cart.");
37        }
38    }
39 }
```

```
© Main.java © ElectronicProduct.java © Product.java © ClothingProduct.java © BookProduct.java © Customer.java © Cart.java × © Order.java

32    }
33
34    }
35
36    no usages
37    public void removeProduct(int index) {
38        if (index >= 0 && index < nProduct) {
39            products[index] = null;
40        } else {
41            System.out.println("Invalid index for removing product from cart.");
42        }
43    }
44
45    3 usages
46    public float calculatePrice() {
47        float totalPrice = 0;
48        for (int i = 0 ; i<nProduct; i++){
49            if (products[i] != null){
50                totalPrice += products[i].getPrice();
51            }
52        }
53        return totalPrice;
54    }
55
56    1 usage
57    public void placeOrder() {
58        if (nProduct > 0) {
59            System.out.println("Order placed successfully.");
60        } else {
61            System.out.println("No products in the cart. Order placement failed.");
62        }
63    }
64 }
```

## Order Class

```

Main.java  ElectronicProduct.java  Product.java  ClothingProduct.java  BookProduct.java  Customer.java  Cart.java  Order.java x
1  2 usages
public class Order {
2  2 usages
    public long customerID;
3  2 usages
    public int orderID;
4  3 usages
    public Product [] products;
5  2 usages
    public float totalPrice;
6  1 usage
    public Order(long customerID , int orderID , float totalPrice , Product[]products){
7      this.customerID=Math.abs(customerID);
8      this.orderID=Math.abs(orderID);
9      this.products= products;
10     this.totalPrice = calculateTotalPrice();
11 }
12 1 usage
    public void printOrderInfo() {
13     System.out.println("Order Information:");
14     System.out.println("Order ID: " + orderID);
15     System.out.println("Customer ID: " + customerID);
16     System.out.println("Products:");
17     for (Product product : products) {
18         if (product != null) {
19             System.out.println("- " + product.getName());
20         }
21     }
22     System.out.println("Total Price: $" + totalPrice);
23 }
24
1 usage
```

```

1 usage
25     private float calculateTotalPrice() {
26         float totalPrice = 0;
27         for (Product product : products) {
28             if (product != null) {
29                 totalPrice += product.getPrice();
30             }
31         }
32         return totalPrice;
33     }
34 }
35
```

The Output:

```
Welcome to E-commerce System
Enter your customer ID: 20201040753
Enter your name: Abdallah Amr Sayed
Enter your address: Moharam-beh
How many products you want to add to your cart? 4
Choose product type:
1. Electronic
2. Clothing
3. Book
2
Choose product type:
1. Electronic
2. Clothing
3. Book
3
Choose product type:
1. Electronic
2. Clothing
3. Book
2
Choose product type:
1. Electronic
2. Clothing
3. Book
1
Your total is 679.95996 . Would you like to place the order ? 1-Yes 2-No 1
Order placement canceled.
```

```
Here's your order's summary :
Order ID : 1
Customer ID : 20201040753
Products :
[ClothingProduct@1d56ce6a, BookProduct@5197848c, ClothingProduct@17f052a3, ElectronicProduct@2e0fa5d3]
Total price : 679.95996

Process finished with exit code 0
```

GUI Code :

Welcome to Abdallah's Small GUI

Enter Name

OK

Enter Your ID

OK

Enter Your Address

OK

How many products you want to add to your cart?

OK

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Welcome to Abdallah's Small GUI

Enter Name

Abdallah Amr

OK

Enter Your ID

OK

Enter Your Address

OK

How many products you want to add to your cart?

OK

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Which product would you like to add?

☐ Smartphone ☐ T-Shirt ☐ OOP

Message

Abdallah Amr ,Welcome

OK



Welcome to Abdallah's Small GUI

Enter Name: Abdallah Amr

Enter Your ID: 20201040753

Enter Your Address:

How many products you want to add to your cart?

Which product would you like to add?

Which product would you like to add?

Which product would you like to add?

Which product would you like to add?

Message: 20201040753 Is your ID

OK

OK

OK

OK

OK

Smartphone T-Shirt OOP

Smartphone T-Shirt OOP

Smartphone T-Shirt OOP

Smartphone T-Shirt OOP

Welcome to Abdallah's Small GUI

Enter Name: Abdallah Amr

Enter Your ID: 20201040753

Enter Your Address: Moharem-Beh

How many products you want to add to your cart? 4

Which product would you like to add?

Which product would you like to add?

Which product would you like to add?

Which product would you like to add?

Smartphone T-Shirt OOP

Smartphone T-Shirt OOP

Smartphone T-Shirt OOP

Smartphone T-Shirt OOP

Smartphone T-Shirt OOP

# The Code

```

Main.java  UI.java  UI.form  ElectronicProduct.java  Product.java  ClothingProduct.java  BookProduct.java  Customer.java  Cart.java
1  import javax.swing.*;
2  import java.awt.event.ActionEvent;
3  import java.awt.event.ActionListener;
4
5  public class UI extends JFrame{
6      private JPanel panelMain;
7      private JTextField txtName;
8      private JButton btnClick;
9      private JTextField txtID;
10     private JButton btnID;
11     private JTextField txtAddress;
12     private JButton btnAddress;
13     private JTextField txtProduct;
14     private JButton btnProduct;
15     private JRadioButton op1;
16     private JRadioButton op2;
17     private JRadioButton op3;
18     private JRadioButton smartphoneRadioButton;

```

```

Main.java  UI.java  UI.form  ElectronicProduct.java  Product.java  ClothingProduct.java  BookProduct.java  Customer.java  Cart.java  Orc
19     private JRadioButton OPPradioButton;
20     private JRadioButton tShirtRadioButton;
21     private JRadioButton smartphoneRadioButton1;
22     private JRadioButton tShirtRadioButton1;
23     private JRadioButton OPPradioButton1;
24     private JRadioButton smartphoneRadioButton2;
25     private JRadioButton tShirtRadioButton2;
26     private JRadioButton OPPradioButton2;
27
28     public UI() {
29         btnClick.addActionListener(new ActionListener() {
30             @Override
31             public void actionPerformed(ActionEvent e) {
32                 JOptionPane.showMessageDialog(btnClick, message: txtName.getText()+" ,Welcome");
33             }
34         });
35         btnID.addActionListener(new ActionListener() {
36             @Override
37             public void actionPerformed(ActionEvent e) {
38                 JOptionPane.showMessageDialog(btnID, message: txtID.getText()+" Is your ID");
39             }
40         });
41         btnAddress.addActionListener(new ActionListener() {
42             @Override

```

```
41         btnAddress.addActionListener(new ActionListener() {
42             @Override
43             public void actionPerformed(ActionEvent e) {
44                 JOptionPane.showMessageDialog(btnAddress, message: txtAddress.getText()+" , Is your Address");
45             }
46         });
47         btnnProduct.addActionListener(new ActionListener() {
48             @Override
49             public void actionPerformed(ActionEvent e) {
50             }
51         });
52     });
53 }
54
55 public static void main(String[] args) {
56     UI ui = new UI();
57     ui.setContentPane(ui.panalMain);
58     ui.setTitle("Welcome to Abdallah's Small GUI");
59     ui.setSize( width: 300, height: 400);
60     ui.setVisible(true);
61     ui.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
62 }
63
64 }
```