

E-commerce System

```
package com.Moaaz.project1;

10 usages 3 inheritors
public class Product {
    3 usages
    private int productId;
    3 usages
    private String name;
    3 usages
    private float price;

    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
    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; }

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

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

    @Override //output used to bring memory location, use this to get the actual product
    public String toString() {
        return "Name: " + this.getName() + ", Price: $" + this.getPrice();
    }
}
```

E-commerce System

```
package com.Moaaz.project1;

2 usages
public class Order {
    2 usages
    private int customerId;
    2 usages
    private int orderId;
    3 usages
    private Product[] products;
    2 usages
    private float totalPrice;

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

    1 usage
    public void printOrderInfo(){
        System.out.println("Customer Id is " + customerId + ", Order Id is " + orderId);
        for (int i = 0; i < products.length; i++){
            System.out.println("Product number "+i+ " is "+products[i]);
        }
        System.out.println("Total price is " +totalPrice);
    }
}
```

E-commerce System

```
package com.Moaaz.project1;

2 usages
public class Cart{
    3 usages
    private int customerId;
    6 usages
    private int nProducts;
    6 usages
    private Product[] products;

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

    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); }

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

    1 usage
    public void addProduct(Product product, int el) {
        if (el >= 0 && el < nProducts) {
            products[el] = product;
        } else {
            System.out.println("incorrect size");
        }
    }

    no usages
    public void removeProduct(int el) {
        if (el >= 0 && el < nProducts) {
            products[el] = null;
        } else {
            System.out.println("incorrect size");
        }
    }

    2 usages
    public double calculatePrice() {
        double totalPrice = 0;
        for (int i=0; i < nProducts; i++) {
            if (products[i] != null) {
                totalPrice += products[i].getPrice();
            }
        }
        return totalPrice;
    }
}
```

E-commerce System

```
package com.Moaaz.project1;
```

2 usages

```
public class Customer {
```

3 usages

```
    private int customerId;
```

3 usages

```
    private String name;
```

3 usages

```
    private String address;
```

1 usage

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

1 usage

```
    public int getCustomerId() { return customerId; }
```

no usages

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

```
}
```

E-commerce System

```
package com.Moaaz.project1;

3 usages
public class BookProduct extends Product{
    3 usages
    private String author;
    3 usages
    private String publisher;

    2 usages
    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; }
}
```

E-commerce System

```
package com.Moaaz.project1;

3 usages
public class ClothingProduct extends Product {
    3 usages
    private String size;
    3 usages
    private String fabric;

    2 usages
    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) { this.size = size; }

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

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

E-commerce System

```
package com.Moaaz.project1;

3 usages
public class ElectronicProduct extends Product{
    3 usages
    private String brand;
    3 usages
    private int warrantyPeriod;

    2 usages
    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
    public int getWarrantyPeriod() { return warrantyPeriod; }

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

E-commerce System

```
package com.Moaaz.project1;
import java.util.Scanner;
public class EcommerceSystem{
    public static void main(String[] args){

        Scanner input = new Scanner(System.in);

        ElectronicProduct elo = new ElectronicProduct( productId: 1, name: "smartphone", price: 599.9f, brand: "Samsung", warrantyPeriod: 1);
        ClothingProduct clo = new ClothingProduct( productId: 2, name: "T-shirt", price: 19.99f, size: "Medium", fabric: "Cotton");
        BookProduct book = new BookProduct( productId: 3, name: "00P", price: 39.99f, author: "O'Reilly", publisher: "X Publications");

        System.out.println("Welcome to the E-commerce System!");
        System.out.println("Entre your ID");
        int id = input.nextInt();
        input.nextLine();
        System.out.println("Entre your name");
        String name = input.nextLine();
        System.out.println("Entre your address");
        String address = input.nextLine();
        Customer customer = new Customer(id,name,address);

        System.out.println("How many Products do you want to add to your cart");
        int size = input.nextInt();
        Cart cart = new Cart(customer.getId(),size);
        for (int i = 0; i <size;i++) {
            System.out.println("Which product do you want to add? 1- Smartphone 2- T-shirt 3- 00P");
            int choice = input.nextInt();
            Product product;
            switch(choice){
                case 1:
                    product = new ElectronicProduct( productId: 1, name: "Smartphone", price: 599.9f, brand: "Samsung", warrantyPeriod: 1);
                    break;
                case 2:
                    product = new ClothingProduct( productId: 2, name: "T-shirt", price: 19.99f, size: "Medium", fabric: "Cotton");
                    break;
                case 3:
                    product = new BookProduct( productId: 3, name: "00P", price: 39.99f, author: "O'Reilly", publisher: "X Publications");
                    break;
                default:
                    System.out.println("Invalid choice, try again");
                    i--;
                    continue;
            }
            cart.addProduct(product,i);
        }
        System.out.println("Your total is " + cart.calculatePrice() + ". Would you like to order? 1- Yes 2- No");
        int choice = input.nextInt();
        if (choice ==1){
            System.out.println("Here is your order summary");
            Order odr = new Order(id, orderId: 1, cart.getProducts(), (float)cart.calculatePrice());
            odr.printOrderInfo();
        } else{
            System.out.println("Thank you for shopping!");
        }
    }
}
```


E-commerce System

Output:

```
Welcome to the E-commerce System!
Entre your ID
123
Entre your name
Moaaz
Entre your address
alexandria
How many Products do you want to add to your cart
3
Which product do you want to add? 1- Smartphone 2- T-shirt 3- OOP
1
Which product do you want to add? 1- Smartphone 2- T-shirt 3- OOP
4
Invalid choice, try again
Which product do you want to add? 1- Smartphone 2- T-shirt 3- OOP
2
Which product do you want to add? 1- Smartphone 2- T-shirt 3- OOP
3
Your total is 659.8800258636475. Would you like to order? 1- Yes 2- No
1
Here is your order summary
Customer Id is 123, Order Id is 1
Product number 0 is Name: Smartphone, Price: $599.9
Product number 1 is Name: T-shirt, Price: $19.99
Product number 2 is Name: OOP, Price: $39.99
Total price is 659.88
```