Project 1

Product class:

```java
package oop;

public class Product {
    private int productId;
    private String name;
    private float price;

    public int getProductId() {
        return productId;
    }

    public void setProductId(int productId) {
        if (productId < 0)
            this.productId = Math.abs(productId);
        else
            this.productId = productId;
    }

    public String getName() {
        return name;
    }

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

    public float getPrice() {
        return price;
    }

    public void setPrice(float price) {
        if (price < 0)
            this.price = Math.abs(price);
        else
            this.price = price;
    }

    @Override
```

```java
    public String toString() {
        return   name + " -$" + price ;
    }

}
```

ElectronicProduct class:

```java
package oop;

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

    public String getBrand() {
        return brand;
    }

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

    public int getWarrantyPeriod() {
        return warrantyPeriod;
    }

    public void setWarrantyPeriod(int warrantyPeriod) {
        if (warrantyPeriod < 0)
            this.warrantyPeriod = Math.abs(warrantyPeriod);
        else
            this.warrantyPeriod = warrantyPeriod;
    }

}
```

ClothingProduct class:

```java
package oop;
```

```
public class ClothingProduct extends Product {
    private String size;
    private String 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;
    }

}
```

BookProduct class:

```
package oop;

public class BookProduct extends Product {
    private String author;
    private String 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;
    }


}
```

Customer class:

```
package oop;

public class Customer {
    private int customerId;
    private String name;
    private String address;
    public int getCustomerId() {
        return customerId;
    }

    public void setCustomerId(int customerId) {
        if (customerId < 0)
            this.customerId = Math.abs(customerId);
        else
            this.customerId = 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;
    }
```

```
}
```

Cart class:

```java
package oop;

import java.lang.reflect.Array;
import java.util.*;

public class Cart {
    private int counter = 0;
    private int customerId;
    private int nProduct;
     Product[] products ;

    public int getCustomerId() {
        return customerId;
    }

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

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

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

    public int getnProduct() {
        return nProduct;
    }

    public void setnProduct(int nProduct) {
            this.nProduct = Math.abs(nProduct);
            products = new Product[nProduct];

    }

    public void addProduct(Product p) {
        products[counter] = p;
        counter++;
```

```java
    }

    public void removeProduct(Product p) {
        Product[] products2 = new Product[getnProduct() - 1];
        int indexRemoved = 0;
        for (int i = 0; i < products.length; i++) {
            if (products[i].getProductId() == p.getProductId()) {
                indexRemoved = i;
                break;

            }
        }
        int p2_iterator=0;
        for (int i = 0; i < products.length; i++) {
            if (i != indexRemoved) {
                products2[p2_iterator] = products[i];
                p2_iterator++;
            }


        }
        setnProduct(getnProduct()-1);
        setProducts(products2);

    }

    public float calculatePrice() {
        float totalPrice = 0;
        for (int i = 0; i < nProduct; i++) {
            totalPrice += products[i].getPrice();
        }
        return totalPrice;
    }

    public boolean placeOrder(int place) {
        if (place == 1)
            return true;
        else
            return false;

    }

}
```

Order class:

```java
package oop;

import java.util.ArrayList;

public class Order {
    private int customerId;
    private static int orderId = 0;
    private int nProduct;
    private Product[] products = new Product[nProduct];
    private float totalPrice;

    public Order() {
        orderId++;
    }

    public int getCustomerId() {
        return customerId;
    }


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

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

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

    public float getTotalPrice() {
        return totalPrice;
    }

    public void setTotalPrice(float totalPrice) {
        this.totalPrice = totalPrice;
    }
```

```java
    public void printOrderInfo() {
        System.out.println("Here's your order's summary ");
        System.out.println("order id: " + orderId);
        System.out.println("customer's id: " + getCustomerId());
        System.out.println("Products: ");
     for (Product product : products) {
        System.out.println(product.getName()+" -$" +product.getPrice());
     }

        System.out.println("Total price: $" + getTotalPrice());

    }

}
```

Main class:

```java
package oop;

import java.util.*;

public class Main {
  public static void main(String[] args) {
    Scanner in = new Scanner(System.in);
    System.out.println("Welcome to E-commerce System!");
    // product#1-----------------------------
    ElectronicProduct p1 = new ElectronicProduct();
    p1.setName("smartphone");
    p1.setProductId(1);
    p1.setPrice(599.9f);
    p1.setBrand("Samsung");
    p1.setWarrantyPeriod(1);
    // product#2-----------------------------
    ClothingProduct p2 = new ClothingProduct();
    p2.setName("T-shirt");
    p2.setProductId(2);
    p2.setPrice(19.99f);
    p2.setSize("Medium");
    p2.setFabric("Cotton");
    // product#3-----------------------------
    BookProduct p3 = new BookProduct();
    p3.setName("OOP");
    p3.setProductId(3);
```

```java
    p3.setPrice(39.99f);
    p3.setAuthor("O'Reilly");
    p3.setPublisher("X Publications");
    // customer----------------------------
    Customer c = new Customer();
    System.out.println("Please enter your id:");
    int id = in.nextInt();
    System.out.println("Please enter your name:");
    String name = in.next();
    System.out.println("Please enter your address:");
    String address = in.next();
    c.setCustomerId(id);
    c.setName(name);
    c.setAddress(address);
    // cart and order--------------------------------
    Order o = new Order();
    o.setCustomerId(id);
    Cart cart = new Cart();
    System.out.println("How many producs you want to add to cart?");
    int nProduct = in.nextInt();
    cart.setnProduct(nProduct);
    for (int i = 0; i < nProduct; i++) {
      System.out.println("which product you would like to add? 1-smartphone 2-T-
shirt 3-OOP");
      int product = in.nextInt();
      switch (product) {
        case 1:
          cart.addProduct(p1);
          break;
        case 2:
          cart.addProduct(p2);
          break;
        case 3:
          cart.addProduct(p3);
          break;
        default:
          System.out.println("Product is not available");
          break;
      }


    }
    System.out.println("Do you want to remove any product from the cart?1-Yes 2-
No");
    int removeProduct = in.nextInt();
```

```java
    if(removeProduct==1){
      while (true) {
        System.out.println("How many products do you want to remove?");
        int removedProducts = in.nextInt();
        if(removedProducts>nProduct){
          System.out.println("Not valid number");
        }else{
      for (int i = 0; i < removedProducts; i++) {
        System.out.println("which product you would like to remove? 1-smartphone
2-T-shirt 3-OOP");
        int product = in.nextInt();
        switch (product) {
          case 1:
            cart.removeProduct(p1);
            break;
          case 2:
          cart.removeProduct(p2);
            break;
          case 3:
          cart.removeProduct(p3);
            break;
          default:
            System.out.println("Product is not available");
            break;
        }


      }
      break;
    }

      }
}
    o.setProducts(cart.getProducts());
    o.setTotalPrice(cart.calculatePrice());
    System.out.println("Your total is $"+ cart.calculatePrice() +". Do you want
to place your order? 1-Yes 2-No");
    int placeOrder = in.nextInt();
    if (cart.placeOrder(placeOrder))
      o.printOrderInfo();

      }
```

```
    }
```

Output:

```
Welcome to E-commerce System!
Please enter your id:
23010151
Please enter your name:
Salsabil
Please enter your address:
adress
How many producs you want to add to cart?
4
which product you would like to add? 1-smartphone 2-T-shirt 3-OOP
2
which product you would like to add? 1-smartphone 2-T-shirt 3-OOP
3
which product you would like to add? 1-smartphone 2-T-shirt 3-OOP
2
which product you would like to add? 1-smartphone 2-T-shirt 3-OOP
1
Your total is $679.87. Do you want to place your order? 1-Yes 2-No
1
Here's your order's summary
order id: 1
customer's id: 23010151
Products:
T-shirt -$19.99
OOP -$39.99
T-shirt -$19.99
smartphone -$599.9
Total price: $679.87
PS C:\Users\salsa\OneDrive\Desktop\first>
```