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ENG/ sara

Monday 10:30

Project 1 OOP

- ***Main:***

```
import java.util.Scanner;

 To Run code, press Shift F10 or click the ▷ icon in the gutter.
public class Main {
    public static void main(String[] args) {

            GUI G=new GUI();
            ////////////////////////////////////////////////////////
            Scanner in = new Scanner(System.in);
            System.out.println("welcome to the E_commerce System");
            Electronicproduct smartphone = new Electronicproduct( productId: 1,  name: "Smartphone",  price: 599.9F,  brand: "samsung",  warrantlyprice: 1);
            clothingproduct Tshirt = new clothingproduct( product_id: 2,  name: "T_shirt",  price: 19.99F,  size: "medium",  fabric: "cotton");
            Bookproduct OOP = new Bookproduct( productId: 3,  name: "OOP",  price: 39.99F,  author: "O'Reilly",  publisher: "X Publications");
            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();
            customer me = new customer(id, name, address);
            System.out.println("How many product you want to add to the cart ? ");
            int n = in.nextInt();
            cart c = new cart(me.customer_id, n);
            order o = new order(me.customer_id,  orderID: 1);

            for(int i = 0; i < n; ++i) {
                System.out.println("which product you want to add to the cart?  1.smartphone 2.T-shirt 3.OOP ");
                int product = in.nextInt();
                switch (product) {
                    case 1:
```

```
                case 1:
                    c.setArr(smartphone, i);
                    break;
                case 2:
                    c.setArr(Tshirt, i);
                    break;
                case 3:
                    c.setArr(OOP, i);
            }
        }

        System.out.print("your total is : $" + c.calculateprice());
        System.out.println(" would you like to place the order ? 1.yes 2.No");
         c.placeorder(in.nextInt());
        }
    }
```

- ***Product:***

```java
public class product {  8 usages  3 inheritors
    protected int productId;  4 usages
    protected String name;
    protected float price;  8 usages

    public product(int productId, String name, float price) {  3 usages
        this.productId = Math.abs(productId);
        this.price = Math.abs(price);
        this.name = name;
    }

    public void setproductId(int productId) {  no usages
        if (productId < 0) {
            this.productId = Math.abs(productId);
        } else {
            this.productId = productId;
        }

    }

    public void setprice(float price) {  no usages
        if (price < 0) {
            this.price = Math.abs(price);
        } else {
            this.price = price;
        }

    }

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

    public int getproductId() { return productId; }
```

```
    public String getname() {  no usages
        return name;
    }

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

- ***Book product:***

```
public class Bookproduct extends product {  6 usages
    protected String author;  3 usages
    protected String publisher;  3 usages

    public Bookproduct(int productId, String name, float price, String author, String publisher) {  3 usages
        super(productId, name, price);
        this.author = author;
        this.publisher = publisher;
    }

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

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

    public String getAuthor() { return author; }

    public String getPublisher() { return publisher; }

}
```

- ***Clothing product :***

```java
public class clothingproduct extends product {  6 usages
        protected String size;
        protected String fabric;  3 usages

    public clothingproduct(int product_id, String name, float price, String size, String fabric) {  3 usages
            super(product_id, name, price);
            this.size = size;
            this.fabric = fabric;
        }

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

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

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

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

}
```

- ***Electronic product :***

```java
public class Electronicproduct extends product {  6 usages
    protected String brand;  3 usages
    protected int warrantlyprice;  3 usages

    public Electronicproduct(int productId, String name, float price, String brand, int warrantlyprice) {  3 usages
        super(productId, name, price);
        this.brand = brand;
        this.warrantlyprice = Math.abs(warrantlyprice);
    }

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

    public String getBrand() { return brand; }

    public void setWarrantlyprice(int warrantlyprice) { this.warrantlyprice = Math.abs(warrantlyprice); }

    public int getWarrantlyprice() { return warrantlyprice; }

}
```

- ***cart:***

```java
import java.util.Scanner;

public class cart {  5 usages
    protected int customer_id;  no usages
    protected int nproduct;  7 usages
    protected product[] arr;  12 usages

    public cart(int customer_id, int nproduct) {  2 usages
        this.nproduct = Math.abs(nproduct);
        this.arr = new product[nproduct];
    }

    public cart() {  no usages
    }

    public void setNproduct(int nproduct) { this.nproduct = Math.abs(nproduct); }

    public int getNproduct() {  no usages
        return nproduct;
    }

    public void setArr(product p, int index) { this.arr[index] = p; }

    public product[] getArr() { return arr; }

    public void addproduct(product p, int index) {  3 usages
        if (index >= 0 && index < this.arr.length) {
            this.arr[index] = p;
        } else {
            System.out.println("out of bounds");
        }
```

```java
public void removeproduct(int index) {  1 usage
    this.arr[index] = null;
}

public double calculateprice() {  3 usages
    double sum = 0.0;

    for (int i = 0; i < nproduct; i++) {
        if (this.getArr()[i] != null) {
            sum += arr[i].price;
        }
    }

    return sum;
}

public void placeorder(int j) {  2 usages
    if (j==1) {
        for (int i = 0; i < nproduct; i++) {
            System.out.println(arr[i].name + " " + arr[i].price);
            arr[i] = null;
        }
    } else if (j==2) {
        System.out.println("Do you want to delete or add product? 1.delete or 2.add");
        Scanner sc = new Scanner(System.in);
        int choice = sc.nextInt();
        switch (choice) {
            case 1:
                System.out.println("enter the index of the product you would like to remove");
                int index = sc.nextInt();
                removeproduct(index);
```

```java
        break;
    case 2:
        System.out.println("enter the index of the product you would like to add");
        int index1 = sc.nextInt();
        System.out.println("which product you want to add to the cart?  1.smartphone 2.T-shirt 3.OOP");
        Electronicproduct smartphone = new Electronicproduct( productId: 1,  name: "Smartphone",  price: 599.9F,  brand: "samsung",  warrantlyprice: 1);
        clothingproduct Tshirt = new clothingproduct( product_id: 2,  name: "T_shirt",  price: 19.99F,  size: "medium",  fabric: "cotton");
        Bookproduct OOP = new Bookproduct( productId: 3,  name: "OOP",  price: 39.99F,  author: "O'Reilly",  publisher: "X Publications");
        int product = sc.nextInt();
        switch (product) {
            case 1:
                addproduct(smartphone, index1);
                break;
            case 2:
                addproduct(Tshirt, index1);
                break;
            case 3:
                addproduct(OOP, index1);
        }
        for (int i = 0; i < nproduct; i++) {
            System.out.println(arr[i].name + " " + arr[i].price);
        }

}
```

- ***customer:***

```java
public class customer {  5 usages
    protected int customer_id;  6 usages
    protected String name;
    protected String address;  3 usages

    public customer(int customer_id, String name, String address) {  2 usages
        this.customer_id = Math.abs(customer_id);
        this.name = name;
        this.address = address;
    }

    public customer() {  no usages
    }

    public void setCustomer_id(int customer_id) { this.customer_id = Math.abs(customer_id); }

    public int getCustomer_id() { return customer_id; }

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

    public String getName() { return name; }

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

    public String getAddress() { return address; }
}
```

- ***Order:***

```
public class order {  2 usages
    protected int customer_id;  1 usage
    protected int orderID;  2 usages
    protected float totalprice;  no usages

    public order(int customer_id, int orderID) {  1 usage
        this.customer_id = customer_id;
        this.orderID = orderID;
    }

    public void printorderInfo(cart n, customer s) {  no usages
        System.out.println("Here is order's summary :");
        System.out.println("Order ID: " + orderID);
        System.out.println("customer ID: " + s.customer_id);
        System.out.println("products:");

        for(int i = 0; i < n.nproduct; ++i) {
            System.out.println(n.getArr()[i].name + " \t  $" + n.getArr()[i].price);
        }

        System.out.println("Total Price : " + Math.abs(n.calculateprice()));
    }
}
```

- ***Run:***

```
"C:\Program Files\Java\jdk-21\bin\java.exe" --enable-preview "-javaagent:D:\intellij\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61044:D:\intellij\IntelliJ IDEA 2024.1\bin" -Dfile.en
welcome to the E_commerce System
please enter your id
23011562
please enter your name
Menna
please enter your address
alex
How many product you want to add to the cart ?
4
which product you want to add to the cart?  1.smartphone 2.T-shirt 3.OOP
3
which product you want to add to the cart?  1.smartphone 2.T-shirt 3.OOP
2
which product you want to add to the cart?  1.smartphone 2.T-shirt 3.OOP
3
which product you want to add to the cart?  1.smartphone 2.T-shirt 3.OOP
1
your total is : $699.8700275421143 would you like to place the order ? 1.yes 2.No
1
OOP 39.99
T_shirt 19.99
OOP 39.99
Smartphone 599.9
```

- ***GUI:***

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class GUI extends JFrame implements ActionListener {  2 usages
     JTextField idField;  3 usages
     JTextField nameField;  3 usages
     JTextField addressField;  3 usages
     JButton addToCartButton;  4 usages
     JButton placeOrderButton;  4 usages
     JTextArea outputArea;  7 usages

     Electronicproduct smartphone;  2 usages
     clothingproduct tshirt;  2 usages
     Bookproduct oop;  2 usages
    customer customer;  5 usages
     cart cart;  6 usages

    public GUI() {  1 usage
        initializeComponents();
        setLayout(new GridLayout( rows: 0,  cols: 2));
        setSize( width: 500,  height: 300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setVisible(true);
    }

    private void initializeComponents() {  1 usage
        idField = new JTextField();
        nameField = new JTextField();
        addressField = new JTextField();
        addToCartButton = new JButton( text: "Add to Cart");
```

```
    placeOrderButton = new JButton( text: "Place Order");
    outputArea = new JTextArea();
    outputArea.setEditable(false);

    addToCartButton.addActionListener( l: this);
    placeOrderButton.addActionListener( l: this);

    add(new JLabel( text: "ID: "));
    add(idField);
    add(new JLabel( text: "Name: "));
    add(nameField);
    add(new JLabel( text: "Address: "));
    add(addressField);
    add(addToCartButton);
    add(placeOrderButton);
    add(outputArea);

    smartphone = new Electronicproduct( productId: 1,  name: "Smartphone",  price: 599.9F,  brand: "Samsung",  warrantlyprice: 1);
    tshirt = new clothingproduct( product_id: 2,  name: "T-Shirt",  price: 19.99F,  size: "Medium",  fabric: "Cotton");
    oop = new Bookproduct( productId: 3,  name: "OOP",  price: 39.99F,  author: "O'Reilly",  publisher: "X Publications");

    customer = new customer( customer_id: 0,  name: "",  address: "");


    cart = new cart(customer.getCustomer_id(),  nproduct: 3); // Assuming 3 products in cart initially
}

@Override
public void actionPerformed(ActionEvent e) {
    if (e.getSource() == addToCartButton) {
```

```
        int id = Integer.parseInt(idField.getText());
        String name = nameField.getText();
        String address = addressField.getText();
        customer.setCustomer_id(id);
        customer.setName(name);
        customer.setAddress(address);

        String output = "";
        int productChoice = Integer.parseInt(JOptionPane.showInputDialog("Enter product choice: \n1. Smartphone\n2. T-Shirt\n3. OOP"));
        switch (productChoice) {
            case 1:
                cart.setArr(smartphone, index: 0);
                JOptionPane.showConfirmDialog( parentComponent: this, message: "smartphone costs 599.9$");
                output = "Smartphone added to cart.\n";
                break;
            case 2:
                cart.setArr(tshirt, index: 1);
                JOptionPane.showConfirmDialog( parentComponent: this, message: " tshirt costs 19.99$");
                output = "T-Shirt added to cart.\n";
                break;
            case 3:
                cart.setArr(oop, index: 2);
                JOptionPane.showConfirmDialog( parentComponent: this, message: "oop costs 39.99$");
                output = "OOP book added to cart.\n";
                break;
            default:
                output = "Invalid choice.\n";
        }
        outputArea.append(output);
    } else if (e.getSource() == placeOrderButton) {
```

```
        } else if (e.getSource() == placeOrderButton) {
            float totalPrice = (float) cart.calculateprice();
            outputArea.append("Total price: $" + totalPrice + "\n");
            int option = JOptionPane.showConfirmDialog( parentComponent: this, message: "Do you want to place the order?");
            if (option == JOptionPane.YES_OPTION) {
                cart.placeorder( j: 0);
                outputArea.append("Order placed successfully!\n");
            } else {
                outputArea.append("Order not placed.\n");
            }
        }
    }

}
```