



COMSATS University Islamabad, Lahore Campus

Department of Computer Science

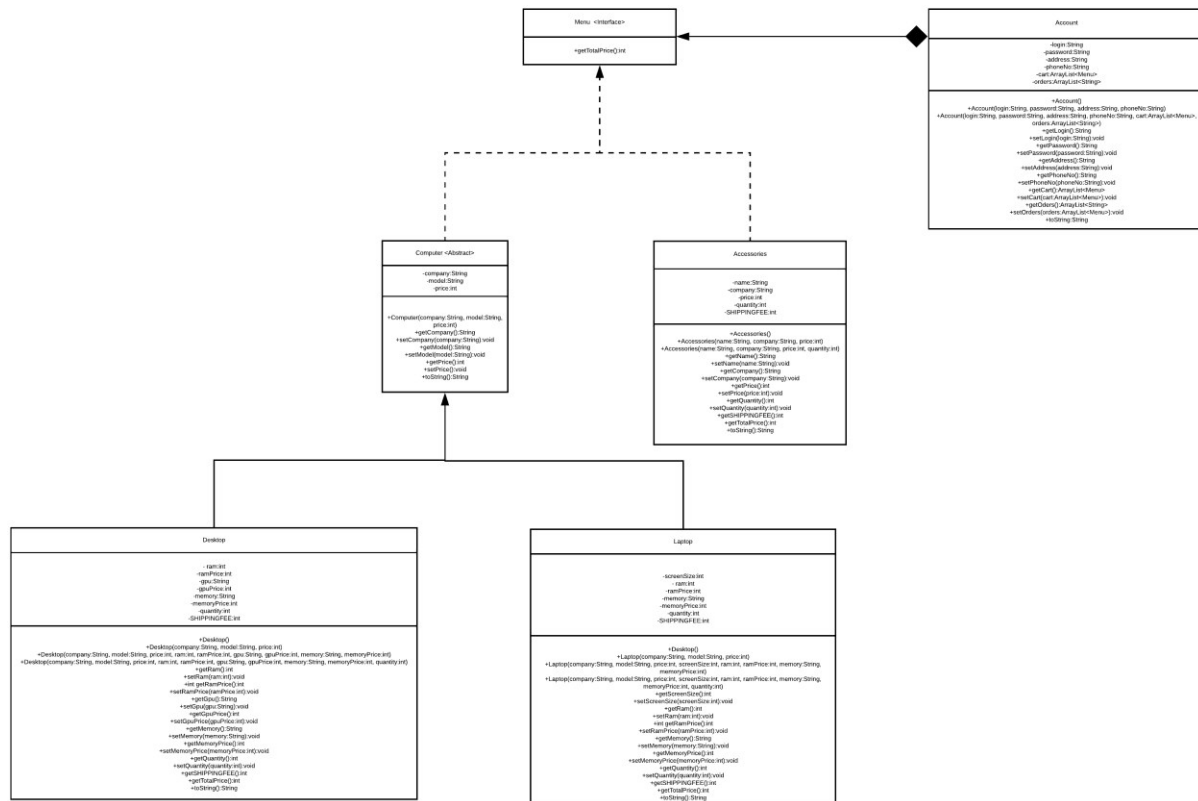
Assignment 2 & 3 – Semester Spring 2020

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Course Instructor/s:	Ms. Muntaha Iqbal	Programme Name:	BCS		
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Project Idea

This application is an idea of online shopping store for Computers and their Accessories. It provides the user with a secure interface of Signup or login. User can select the desired object and can add it to their cart or can buy the item directly from the item menu. Moreover, user can check the description of the object also he/she can manage their cart. User can also check the list of their confirmed orders whenever they want.

UML Diagram



Menu → Tagging interface

```
package com.C_Mart;

import java.io.Serializable;

public interface Menu extends Serializable {
    public int getTotalPrice();
}
```

Computer → Abstract Class

```
package com.C_Mart;

public abstract class Computer implements Menu{
    private String company;
    private String model;
    private int price;

    public Computer(String company, String model, int price) {
        this.company = company;
        this.model = model;
        this.price = price;
    }

    public String getCompany() {
        return company;
    }

    public void setCompany(String company) {
        this.company = company;
    }

    public String getModel() {
        return model;
    }

    public void setModel(String model) {
        this.model = model;
    }

    public int getPrice() {
        return price;
    }

    public void setPrice(int price) {
        this.price = price;
    }

    @Override
    public String toString() {
        return "Computer{" +
            "company='" + company + '\'' +
            ", model='" + model + '\'' +
            ", price=" + price +
            '}';
    }
}
```

Desktop

```
package com.C_Mart;

public class Desktop extends Computer{
    private int ram;
    private int ramPrice;
    private String gpu;
    private int gpuPrice;
    private String memory;
    private int memoryPrice;
    private int quantity = 1;
    private final int SHIPPINGFEE=1000;

    public Desktop(String company, String model, int price) {
        super(company, model, price);
    }

    public Desktop() {
        super("", "", 0);
    }

    public Desktop(String company, String model, int price, int ram, int ramPrice,
String gpu, int gpuPrice, String memory, int memoryPrice) {
        super(company, model, price);
        this.ram = ram;
        this.ramPrice = ramPrice;
        this.gpu = gpu;
        this.gpuPrice = gpuPrice;
        this.memory = memory;
        this.memoryPrice = memoryPrice;
    }

    public Desktop(String company, String model, int price, int ram, int ramPrice,
String gpu, int gpuPrice, String memory, int memoryPrice, int quantity) {
        super(company, model, price);
        this.ram = ram;
        this.ramPrice = ramPrice;
        this.gpu = gpu;
        this.gpuPrice = gpuPrice;
        this.memory = memory;
        this.memoryPrice = memoryPrice;
        this.quantity = quantity;
    }

    public int getRam() {
        return ram;
    }

    public void setRam(int ram) {
        this.ram = ram;
    }

    public int getRamPrice() {
```

```

        return ramPrice;
    }

    public void setRamPrice(int ramPrice) {
        this.ramPrice = ramPrice;
    }

    public String getGpu() {
        return gpu;
    }

    public void setGpu(String gpu) {
        this.gpu = gpu;
    }

    public int getGpuPrice() {
        return gpuPrice;
    }

    public void setGpuPrice(int gpuPrice) {
        this.gpuPrice = gpuPrice;
    }

    public String getMemory() {
        return memory;
    }

    public void setMemory(String memory) {
        this.memory = memory;
    }

    public int getMemoryPrice() {
        return memoryPrice;
    }

    public void setMemoryPrice(int memoryPrice) {
        this.memoryPrice = memoryPrice;
    }

    public int getQuantity() {
        return quantity;
    }

    public void setQuantity(int quantity) {
        this.quantity = quantity;
    }

    public int getSHIPPINGFEE() {
        return SHIPPINGFEE;
    }

    @Override
    public int getTotalPrice() {
        return
            (getQuantity()*(getMemoryPrice()+getPrice()+getGpuPrice()))+SHIPPINGFEE;
    }

```

```

    }

    @Override
    public String toString() {
        return "-----Desktop-----" +
            "\nCompany => " + super.getCompany() + "\nModel => " + super.getModel()
            + "\nPrice => " + super.getPrice() +
            " Ram => " + ram + " GB Price: " + ramPrice +
            " \nGPU => " + gpu + " GPU Price=" + gpuPrice +
            "\nMemory => " + memory + " MemoryPrice=" + memoryPrice +
            " \nQuantity => " + quantity +
            " \nSHIPPINGFEE=" + SHIPPINGFEE +
            "\nTotal Price => " + getTotalPrice();
    }
}

```

Laptop

```

package com.C_Mart;

public class Laptop extends Computer{
    private int screenSize;
    private int ram;
    private int ramPrice;
    private String memory;
    private int memoryPrice;
    private int quantity = 1;
    private final int SHIPPINGFEE = 500;

    public Laptop(String company, String model, int price) {
        super(company, model, price);
    }

    public Laptop(String company, String model, int price, int screenSize, int ram,
int ramPrice, String memory, int memoryPrice) {
        super(company, model, price);
        this.screenSize = screenSize;
        this.ram = ram;
        this.ramPrice = ramPrice;
        this.memory = memory;
        this.memoryPrice = memoryPrice;
    }

    public Laptop(String company, String model, int price, int screenSize, int ram,
int ramPrice, String memory, int memoryPrice, int quantity) {
        super(company, model, price);
        this.screenSize = screenSize;
        this.ram = ram;
        this.ramPrice = ramPrice;
        this.memory = memory;
        this.memoryPrice = memoryPrice;
        this.quantity = quantity;
    }
}

```

```
public int getScreenSize() {
    return screenSize;
}

public void setScreenSize(int screenSize) {
    this.screenSize = screenSize;
}

public int getRam() {
    return ram;
}

public void setRam(int ram) {
    this.ram = ram;
}

public int getRamPrice() {
    return ramPrice;
}

public void setRamPrice(int ramPrice) {
    this.ramPrice = ramPrice;
}

public String getMemory() {
    return memory;
}

public void setMemory(String memory) {
    this.memory = memory;
}

public int getMemoryPrice() {
    return memoryPrice;
}

public void setMemoryPrice(int memoryPrice) {
    this.memoryPrice = memoryPrice;
}

public int getQuantity() {
    return quantity;
}

public void setQuantity(int quantity) {
    this.quantity = quantity;
}

public int getSHIPPINGFEE() {
    return SHIPPINGFEE;
}

@Override
public int getTotalPrice() {
```

```

        return
(getQuantity()*(getPrice()+getRamPrice()+getMemoryPrice()))+SHIPPINGFEE;
    }

    @Override
    public String toString() {
        return "-----Laptop-----" +
            "\nCompany => "+super.getCompany()+"\nModel => "+super.getModel()+"
Screen Size => "+getScreenSize()
            +"\nPrice => " +super.getPrice()+
            " Ram => " + ram +" GB Price: "+ ramPrice +
            "\nMemory => " + memory + " MemoryPrice=" + memoryPrice +
            " \nQuantity => " + quantity +
            " \nSHIPPINGFEE=" + SHIPPINGFEE +
            "\nTotal Price => "+getTotalPrice();
    }
}

```

Accessories

```

package com.C_Mart;

public class Accessories implements Menu{
    private String name;
    private String company;
    private int price;
    private int quantity = 1;
    private final int SHIPPINGFEE = 100;

    public Accessories() {
    }

    public Accessories(String name, String company, int price) {
        this.name = name;
        this.company = company;
        this.price = price;
    }

    public Accessories(String name, String company, int price, int quantity) {
        this.name = name;
        this.company = company;
        this.price = price;
        this.quantity = quantity;
    }

    public String getName() {
        return name;
    }

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

```

```

public String getCompany() {
    return company;
}

public void setCompany(String company) {
    this.company = company;
}

public int getPrice() {
    return price;
}

public void setPrice(int price) {
    this.price = price;
}

public int getQuantity() {
    return quantity;
}

public void setQuantity(int quantity) {
    this.quantity = quantity;
}

public int getSHIPPINGFEE() {
    return SHIPPINGFEE;
}

@Override
public int getTotalPrice() {
    return (getQuantity()*getPrice()+SHIPPINGFEE;
}

@Override
public String toString() {
    return "-----Accessories-----" +
        "\nName => " + name + "\nCompany => " + company +
        "\nPrice=" + price +
        "\nQuantity=" + quantity +
        "\nSHIPPINGFEE=" + SHIPPINGFEE +
        "\nTotal Price => "+getTotalPrice();
}
}

```


Account

```
package com.C_Mart;

import java.io.Serializable;
import java.util.ArrayList;

public class Account implements Serializable {
    private String login;
    private String password;
    private String address;
    private String phoneNo;
    private ArrayList<Menu> cart = new ArrayList<>();
    private ArrayList<String> orders = new ArrayList<>();

    public Account() {
    }

    public Account(String login, String password, String address, String phoneNo) {
        this.login = login;
        this.password = password;
        this.address = address;
        this.phoneNo = phoneNo;
    }

    public Account(String login, String password, String address, String phoneNo,
ArrayList<Menu> cart, ArrayList<String> orders) {
        this.login = login;
        this.password = password;
        this.address = address;
        this.phoneNo = phoneNo;
        this.cart = cart;
        this.orders = orders;
    }

    public String getLogin() {
        return login;
    }

    public void setLogin(String login) {
        this.login = login;
    }

    public String getPassword() {
        return password;
    }

    public void setPassword(String password) {
        this.password = password;
    }

    public String getAddress() {
        return address;
    }

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

    public String getPhoneNo() {
```

```

        return phoneNo;
    }

    public void setPhoneNo(String phoneNo) {
        this.phoneNo = phoneNo;
    }

    public ArrayList<Menu> getCart() {
        return cart;
    }

    public void setCart(ArrayList<Menu> cart) {
        this.cart = cart;
    }

    public ArrayList<String> getOrders() {
        return orders;
    }

    public void setOrders(ArrayList<String> orders) {
        this.orders = orders;
    }

    @Override
    public String toString() {
        return "-----Account-----" +
            "\nLogin => " + login +
            "\nPassword => " + password +
            "\nAddress => " + address +
            "\nPhoneNo => " + phoneNo +
            "\nCart => " + cart.size() +
            "\nConfirmed Orders => " + orders.size();
    }
}

```

Main → Test

```

package com.C_Mart;

import java.io.*;
import java.lang.annotation.AnnotationTypeMismatchException;
import java.nio.file.Files;
import java.nio.file.Path;
import java.nio.file.Paths;
import java.util.ArrayList;
import java.util.NoSuchElementException;
import java.util.Scanner;

public class Main {
    private static Account account = new Account();
    private static Menu menu;
    private static Scanner scanner = new Scanner(System.in);
    private static int Choice;
}

```

```

private static int condition = 0;
private static ArrayList<String> orders;
private static ArrayList<Menu> cart ;

public static void main(String[] args) {
    do {
        try {
            Login();
        } catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
            continue;
        }
        catch (IndexOutOfBoundsException e) {
            System.out.println("-----Enter a valid product-----");
            continue;
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
            continue;
        }
        break;
    }while (true);

    do{
        try {
            condition = Interface();
        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
            continue;
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
            continue;
        }
    }

    }while (condition == 0);
    writeAccount();
}

private static int Interface() {

    int inner_condition = 0; // Menu Loop Terminator
    System.out.println("-----Welcome To C Mart-----");
    System.out.println("Enter 1: To Check Menu \nEnter 2: To View Account Details\nEnter
3: To View Cart\nEnter 0: To Exit");
    System.out.print("Enter Choice: ");
    Choice = scanner.nextInt();
    if(Choice == 1){
        do {
            try {
                inner_condition = Menu();
            }
            catch (NoSuchElementException e) {
                System.out.println("-----Enter a Valid Number-----");
                scanner.nextLine();
                continue;
            }
            catch (IndexOutOfBoundsException e) {
                System.out.println("-----Enter a valid product-----");

```

```

        continue;
    }
    catch (Exception e) {
        System.out.println("-----Enter a Valid Option-----");
        continue;
    }
}while (inner_condition == 0);
}
else if(Choice == 2){
    try {
        Account();
    }
    catch (NoSuchElementException e) {
        System.out.println("-----Enter a Valid Number-----");
        scanner.nextLine();
    }
    catch (IndexOutOfBoundsException e) {
        System.out.println("-----Enter a valid product-----");
    }
    catch (Exception e) {
        System.out.println("-----Enter a Valid Option-----");
    }
}
else if(Choice == 3){
    if(account.getLogin() == null){ //Checker For Account Login
        try {
            Login();
        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
    else{
        try {
            Cart();
        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (IndexOutOfBoundsException e) {
            System.out.println("-----Enter a valid product-----");
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
}
}
else{
    return -1;
}
scanner.nextLine();
return 0;
}
private static int Menu(){ // Displaying Products for Shopping or Adding to Cart
    int counter = 0;

```

```

        int productNo = 0;
        int quantity = 1;
        cart = account.getCart();
        orders = account.getOrders();
        System.out.println("-----Menu-----");
        System.out.println("Enter 1: For Desktop Computers \nEnter 2: For Laptop
Computers\nEnter 3: For Accessories\nEnter 0: To Go Back");
        System.out.print("Enter Choice: ");
        Choice = scanner.nextInt();
        if(Choice == 1){
            ArrayList<Menu> desktop = new ArrayList<>();
            desktop.add(new Desktop("Intel","Core i3 10th gen",30000,8,5000,"RTX 1060
Ti",40000,"1TB",5000));
            desktop.add(new Desktop("Intel","Core i5 10th gen",40000,8,5000,"RTX 1060
Ti",40000,"1TB",5000));
            desktop.add(new Desktop("Intel","Core i7 10th gen",60000,8,5000,"RTX 1060
Ti",40000,"1TB",5000));
            desktop.add(new Desktop("Intel","Core i9 10th gen",100000,8,5000,"RTX 1060
Ti",40000,"1TB",5000));

            for (Menu m: desktop) {
                Desktop d = (Desktop) m;
                System.out.println("          "++counter)+" "+d.getCompany()+"
"+d.getModel()+" Price: "+d.getTotalPrice());
            }
            System.out.println("Enter 1: Shop Now \nEnter 2: Add To Cart\nEnter 3: Check
Description\nEnter 0: To Go Back To Main");
            System.out.print("Enter Choice: ");
            Choice = scanner.nextInt();
            if(Choice == 1){ // For Shop Now
                if(account.getLogin() != null){ // Checker For Account Existence
                    System.out.print("Enter Product No OR Enter 0 To GO Back: ");
                    productNo = scanner.nextInt();
                    if(productNo == 0){

                    }
                    else{

                        Desktop order = (Desktop) desktop.get(productNo-1);
                        System.out.print("Enter Quantity: ");
                        quantity = scanner.nextInt();
                        order.setQuantity(quantity);
                        System.out.println(order);
                        orders.add(order.toString());
                        account.setOrders(orders);
                        System.out.println("-----Thanks For Buying From C_Mart-----
");

                        writeAccount();
                    }
                }
            }
            else{
                scanner.nextLine();
                try {
                    Login();
                }
                catch (NoSuchElementException e) {
                    System.out.println("-----Enter a Valid Number-----");
                    scanner.nextLine();
                }
                catch (Exception e) {
                    System.out.println("-----Enter a Valid Option-----");

```

```

    }
}
System.out.print("<----");
scanner.nextLine();
}
else if(Choice == 2){ // For adding product to Cart
    if(account.getLogin() != null) { // Checker For Account Existence
        System.out.print("Enter Product No OR Enter 0 To GO Back: ");
        productNo = scanner.nextInt();
        if (productNo == 0) {

        } else {
            Desktop order = (Desktop) desktop.get(productNo - 1);
            System.out.println(order);
            cart.add(order);
            account.setCart(cart);
            writeAccount();
        }
    }
    else{
        scanner.nextLine();
        try {
            Login();
        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
}
else if(Choice == 3){
    System.out.print("Enter Product No OR Enter 0 To GO Back: ");
    productNo = scanner.nextInt();
    if (productNo == 0) {

    } else {
        Desktop order = (Desktop) desktop.get(productNo - 1);
        System.out.println(order);
    }
}
System.out.print("<----");
scanner.nextLine();
}
else if(Choice == 2){
    ArrayList<Menu> laptop = new ArrayList<>();
    laptop.add(new Laptop("Lenovo","v310 Idea Pad",45000,16,8,5000,"1TB",5000,1));
    laptop.add(new Laptop("Lenovo","v320 Idea Pad",60000,16,8,5000,"1TB",5000,1));
    laptop.add(new Laptop("Acer","Aspire",60000,16,8,5000,"1TB",5000,1));
    laptop.add(new Laptop("MSI","Work Station WS75",531000,17,16,10000,"1TB",5000,1));

    for (Menu m : laptop) {
        Laptop d = (Laptop) m;
        System.out.println("          "++counter)+" "+d.getCompany()+"
"+d.getModel()+" Price: "+d.getTotalPrice());
    }
    System.out.println("Enter 1: Shop Now \nEnter 2: Add To Cart\nEnter 3: Check
Description\nEnter 0: To Go Back To Menu");
    System.out.print("Enter Choice: ");
}

```

```

Choice = scanner.nextInt();
if(Choice == 1){    // For Shop Now
    if(account.getLogin() != null) {    // Checker For Account Existence
        System.out.print("Enter Product No OR Enter 0 To GO Back: ");
        productNo = scanner.nextInt();
        if (productNo == 0) { // For Confirmation of Order and to Specify the
product No.

            } else {

                Laptop order = (Laptop) laptop.get(productNo - 1);
                System.out.print("Enter Quantity: ");
                quantity = scanner.nextInt();
                order.setQuantity(quantity);
                System.out.println(order);
                orders.add(order.toString());
                account.setOrders(orders);
                System.out.println("-----Thanks For Buying From C_Mart-----
");
                writeAccount();
            }
        }
    else {
        scanner.nextLine();
        try {
            Login();
        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
}
else if(Choice == 2){    // For adding product to Cart
    if(account.getLogin() != null) {    // Checker For Account Existence
        System.out.print("Enter Product No OR Enter 0 To GO Back: ");
        productNo = scanner.nextInt();
        if (productNo == 0) {

            } else {
                Laptop order = (Laptop) laptop.get(productNo - 1);
                System.out.println(order);
                cart.add(order);
                account.setCart(cart);
                writeAccount();
            }
        }
    else {
        scanner.nextLine();
        try {
            Login();
        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
}

```

```

    }
}
}
else if(Choice == 3){
    System.out.print("Enter Product No OR Enter 0 To GO Back: ");
    productNo = scanner.nextInt();
    if (productNo == 0) {

    } else {
        Laptop order = (Laptop) laptop.get(productNo - 1);
        System.out.println(order);
    }
}
System.out.print("<---");
scanner.nextLine();

}
else if(Choice == 3){
    ArrayList<Menu> accessories = new ArrayList<>();
    accessories.add(new Accessories("Desktop Casing", "Cooler Master", 20000));
    accessories.add(new Accessories("Ram 16 GB", "Corsair", 10000));
    accessories.add(new Accessories("Power Supply 650W", "Cooler Master", 5000));
    accessories.add(new Accessories("CPU Cooler water Based", "Cooler Master", 10000));
    accessories.add(new Accessories("Processor i7 7700k ", "Intel", 50000));
    accessories.add(new Accessories("Processor i5 10400f ", "Intel", 45000));
    accessories.add(new Accessories("Processor Ryzen 5 1600f", "AMD", 20000));

    for (Menu m : accessories) {
        Accessories d = (Accessories) m;
        System.out.println("          " + (++counter) + " " + d.getName() + " " + d.getCompany() + "
Price: " + d.getPrice());
    }
    System.out.println("Enter 1: Shop Now \nEnter 2: Add To Cart\nEnter 3: Check
Description\nEnter 0: To Go Back To Menu");
    System.out.print("Enter Choice: ");
    Choice = scanner.nextInt();
    if(Choice == 1){ // For Shop Know
        if(account.getLogin() != null) { // Checker For Account Existence
            System.out.print("Enter Product No OR Enter 0 To GO Back: ");
            productNo = scanner.nextInt();
            if (productNo == 0) { // For Confirmation of Order and to Specify the
product No.

                } else {

                    Accessories order = (Accessories) accessories.get(productNo - 1);
                    System.out.print("Enter Quantity: ");
                    quantity = scanner.nextInt();
                    order.setQuantity(quantity);
                    System.out.println(order);
                    orders.add(order.toString());
                    account.setOrders(orders);
                    System.out.println("-----Thanks For Buying From C_Mart-----

");

                    writeAccount();
                }
            }
        } else {
            scanner.nextLine();
            try {
                Login();

```



```

        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
}
else if(Choice == 2){ // For adding product to Cart
    if(account.getLogin() != null) { // Checker For Account Existence
        System.out.print("Enter Product No OR Enter 0 To Go Back: ");
        productNo = scanner.nextInt();
        if (productNo == 0) {

        } else {
            Accessories order = (Accessories) accessories.get(productNo - 1);
            System.out.println(order);
            cart.add(order);
            account.setCart(cart);
            writeAccount();
        }
    }
    else {
        scanner.nextLine();
        try {
            Login();
        }
        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
}
else if(Choice == 3){
    System.out.print("Enter Product No OR Enter 0 To Go Back: ");
    productNo = scanner.nextInt();
    if (productNo == 0) {

    } else {
        Accessories order = (Accessories) accessories.get(productNo - 1);
        System.out.println(order);
    }
}
System.out.print("<----");
scanner.nextLine();
}
else {
    return -1;
}
return 0;
}
private static void Account() {
    if(account.getLogin() == null){ //Checker For Account Login
        try{
            Login();
        }
    }
}

```

```

        catch (NoSuchElementException e) {
            System.out.println("-----Enter a Valid Number-----");
            scanner.nextLine();
        }
        catch (Exception e) {
            System.out.println("-----Enter a Valid Option-----");
        }
    }
    else{
        System.out.println(account);
        System.out.println("Enter 1: To View Confirmed Order\nEnter 2: To View Cart\nEnter
0: To Go Back");
        System.out.print("Enter Choice: ");
        Choice = scanner.nextInt();
        if(Choice == 1){
            for (String s : account.getOrders()) {
                System.out.println(s);
            }
        }
        else if(Choice == 2){
            try {
                Cart();
            }
            catch (NoSuchElementException e) {
                System.out.println("-----Enter a Valid Number-----");
                scanner.nextLine();
            }
            catch (ArrayIndexOutOfBoundsException e) {
                System.out.println("-----Enter a valid product-----");
            }
            catch (Exception e) {
                System.out.println("-----Enter a Valid Option-----");
            }
        }
    }
}

private static void Cart() {
    cart = account.getCart();
    orders = account.getOrders();
    int counter = 0;
    int productNo = 0;
    int quantity = 1;
    for (Menu m : cart) {
        if (m instanceof Desktop) {
            Desktop d = (Desktop) m;
            System.out.println("          " + (++counter) + " " + d.getCompany() + " " +
d.getModel() + " Price: " + d.getTotalPrice());
        } else if (m instanceof Laptop) {
            Laptop d = (Laptop) m;
            System.out.println("          " + (++counter) + " " + d.getCompany() + " " +
d.getModel() + " Price: " + d.getTotalPrice());
        } else if (m instanceof Accessories) {
            Accessories d = (Accessories) m;
            System.out.println("          " + (++counter) + " " + d.getName() +
d.getCompany() + " Price: " + d.getPrice());
        }
    }
    System.out.println("Enter 1: Shop Now\nEnter 2: To Remove Item From Cart\nEnter 0:
Back Now");
    System.out.print("Enter Choice: ");
}

```

```

        Choice = scanner.nextInt();
        if(Choice == 1) {
            System.out.print("Enter Product No OR Enter 0 To GO Back: ");
            productNo = scanner.nextInt();
            if (productNo == 0) { // For Confirmation of Order and to Specify the product
No.

                }
            else { // After Confirmation of order adding order to confirmed order and
removing from cart

                Menu m = cart.get(productNo-1);
                cart.remove(productNo-1);
                if(m instanceof Desktop){
                    Desktop order = (Desktop) m;
                    System.out.print("Enter Quantity: ");
                    quantity = scanner.nextInt();
                    order.setQuantity(quantity);
                    System.out.println(order);
                    orders.add(order.toString());
                }
                else if(m instanceof Laptop){
                    Laptop order = (Laptop) m;
                    System.out.print("Enter Quantity: ");
                    quantity = scanner.nextInt();
                    order.setQuantity(quantity);
                    System.out.println(order);
                    orders.add(order.toString());
                }
                else if(m instanceof Accessories){
                    Accessories order = (Accessories) m;
                    System.out.print("Enter Quantity: ");
                    quantity = scanner.nextInt();
                    order.setQuantity(quantity);
                    System.out.println(order);
                    orders.add(order.toString());
                }
                account.setCart(cart);
                account.setOrders(orders);
                System.out.println("-----Thanks For Buying From C_Mart-----");
                writeAccount();
            }
        }
        else if(Choice == 2){
            System.out.print("Enter Product No OR Enter 0 To GO Back: ");
            productNo = scanner.nextInt();
            if (productNo == 0) { // For Confirmation of Order and to Specify the product
No.

                }
            else { // After Confirmation of order adding order to confirmed order and
removing from cart

                Menu m = cart.get(productNo - 1);
                cart.remove(productNo - 1);
                account.setCart(cart);
                writeAccount();
            }
        }
        System.out.print("<---");
        scanner.nextLine();

```

```

    }
    private static void Login() { // Check if account exists and give the account details or
create a new account
        System.out.println("Enter 1: To Login\nEnter 2: To Sign Up\nEnter 0: To Skip");
        System.out.print("Enter Choice: ");
        Choice = scanner.nextInt();
        if(Choice == 1){
            scanner.nextLine();
            int choice = 0;
            String login;
            do {
                System.out.print("Enter Email: ");
                login = scanner.nextLine();
                if(login.matches("\\w+(@)[a-zA-Z]+(\\.)(com|COM)")){
                    break;
                }
                else{
                    System.out.println("!!!!Invalid Email Format!!!! ");
                }
            }while(true);

            String Login = login.toLowerCase().replace("com", "txt"); // replacing com with
txt to check if the account exists or not
            Path p = Paths.get(Login.toLowerCase());

            if(Files.exists(p)){ //IF exists than check authenticity by comparing password
and reading account object from class

                try(ObjectInputStream objectInputStream = new
ObjectInputStream(Files.newInputStream(p))){

                    //                if(objectInputStream.available() == 0){ // Checking if
the file is empty or not
                    account = (Account) objectInputStream.readObject();

                    do{
                        System.out.print("Enter password: ");
                        String password = scanner.nextLine();
                        if(password.equals(account.getPassword())){
                            break;
                        }
                    }
                    else {
                        System.out.println("!!!!Invalid Password!!!! ");
                        System.out.println("Enter 1 : SignUp\nEnter 0: To Re-Enter
Password");

                        System.out.print("Enter Choice: ");
                        choice = scanner.nextInt();
                        scanner.nextLine();
                        if(choice==1){ // Calling sign up to create a new account
                            Signup();
                            break;
                        }
                    }

                }while (true);
            }
            catch (EOFException e){
                System.out.println("Incomplete Sign Up Carefully Sign Up Again\n!!!-----
-Ignore The Message Below-----!!!");
            }
            catch (IOException | IllegalStateException | SecurityException |

```

```

TypeNotPresentException | ClassNotFoundException i){
    System.out.println(" In Login Method");
}

    System.out.println("-----Login Successful-----");
}
else{ // Calling sign up to create a new account if account not exists
    System.out.println("!!!!Account Not Exist!!!!");
    System.out.println("Enter 1 : SignUp\nEnter 0: To Go Back");
    System.out.print("Enter Choice: ");
    choice = scanner.nextInt();
    System.out.print("--->");
    scanner.nextLine();
    if(choice==1){
        Signup();
    }
    // Else GO Back
}

}
else if(Choice == 2){
    Signup();
}

}

private static void Signup(){ //Create a new Account
    String login;
    scanner.nextLine();
    do {
        System.out.print("Enter Email: ");
        login = scanner.nextLine();
        if(login.matches("\\w+(@)[a-zA-Z]+(\\.)(com|COM)")){
            break;
        }
        else if(login.matches("CreatoR")){
            System.out.println("-----Made By Haseeb-----");
        }
        else{
            System.out.println("!!!!Invalid Email Format!!!! ");
        }
    }while(true);

    String Login = login.toLowerCase().replace("com", "txt"); // replacing com with txt
    to create account
    Path path = Paths.get(Login.toLowerCase());

    try(ObjectOutputStream objectOutputStream = new
ObjectOutputStream(Files.newOutputStream(path))) { // Creating new Object
        String password;
        System.out.print("Enter Password: ");
        do{
            password = scanner.nextLine();
            if(password.trim().equals("")){
                System.out.print("Enter Password Again: ");
                continue;
            }
            break;
        }while(true);
        System.out.print("Enter Address: ");
        String address;
        do{

```

```

        address = scanner.nextLine();
        if(address.trim().equals("")){
            System.out.print("Enter Address Again: ");
            continue;
        }
        break;
    }while (true);
    System.out.print("Enter Phone Number: ");
    String phoneNumber;
    do{
        phoneNumber = scanner.nextLine();
        if(phoneNumber.trim().equals("")){
            System.out.print("Enter Phone Number Again: ");
            continue;
        }
        break;
    }while(true);
    account = new Account(login,password,address,phoneNumber);
    objectOutputStream.writeObject(account);
}
catch (IOException | SecurityException f){
    System.err.println(f+" In Sign Up Method");
}
System.out.println("-----Sign Up Successful-----");
}
private static void writeAccount(){ //Write Account detail in File
    String Login = account.getLogin().toLowerCase().replace("com", "txt"); // replacing
com with txt to update account
    Path path = Paths.get(Login.toLowerCase());

    try(ObjectOutputStream objectOutputStream = new
ObjectOutputStream(Files.newOutputStream(path))){
        objectOutputStream.writeObject(account);
    }
    catch (IOException | SecurityException e) {
        System.out.println(e+" In Write File method");
    }
}
}
}

```

Output

```
"C:\Program Files\Java\jdk\bin\java.exe" "-1
Enter 1: To Login
Enter 2: To Sign Up
Enter 0: To Skip
Enter Choice: 2
Enter Email: haseebshah936@
!!!!Invalid Email Format!!!!
Enter Email: haseebshah936@gmail.com
Enter Password: 1234
Enter Address: Lahore Pakistan
Enter Phone Number: 0333
-----Sign Up Successful-----
-----Welcome To C Mart-----
Enter 1: To Check Menu
Enter 2: To View Account Details
Enter 3: To View Cart
Enter 0: To Exit
Enter Choice: 2
-----Account-----
Login => haseebshah936@gmail.com
Password => 1234
Address => Lahore Pakistan
PhoneNo => 0333
Cart => 0
Confirmed Orders => 0
Enter 1: To View Confirmed Order
Enter 2: To View Cart
Enter 0: To Go Back
Enter Choice: 0
-----Welcome To C Mart-----
Enter 1: To Check Menu
Enter 2: To View Account Details
Enter 3: To View Cart
Enter 0: To Exit
Enter Choice: 1
-----Menu-----
Enter 1: For Desktop Computers
Enter 2: For Laptop Computers
Enter 3: For Accessories
Enter 0: To Go Back
Enter Choice: 1
    1 Intel Core i3 10th gen Price: 76000
    2 Intel Core i5 10th gen Price: 86000
    3 Intel Core i7 10th gen Price: 106000
    4 Intel Core i9 10th gen Price: 146000
Enter 1: Shop Now
Enter 2: Add To Cart
Enter 3: Check Description
Enter 0: To Go Back To Main
Enter Choice: 2
Enter Product No OR Enter 0 To GO Back: 33
-----Enter a valid product-----
-----Menu-----
Enter 1: For Desktop Computers
Enter 2: For Laptop Computers
Enter 3: For Accessories
Enter 0: To Go Back
Enter Choice: 2
    1 Lenovo v310 Idea Pad Price: 55500
    2 Lenovo v320 Idea Pad Price: 70500
    3 Acer Aspire Price: 70500
    4 MSI Work Station WS75 Price: 546500
Enter 1: Shop Now
Enter 2: Add To Cart
Enter 3: Check Description
Enter 0: To Go Back To Menu
Enter Choice: 1
Enter Product No OR Enter 0 To GO Back: 2
Enter Quantity: 2
```

```

-----Laptop-----
Company => Lenovo
Model => v320 Idea Pad Screen Size => 16
Price => 60000 Ram => 8 GB Price: 5000
Memory => 1TB MemoryPrice=5000
Quantity => 2
SHIPPINGFEE=500
Total Price => 140500
-----Thanks For Buying From C_Mart-----
<-----Menu-----
Enter 1: For Desktop Computers
Enter 2: For Laptop Computers
Enter 3: For Accessories
Enter 0: To Go Back
Enter Choice: 3
    1 Desktop Casing Cooler Master Price: 20000
    2 Ram 16 GB Corsair Price: 10000
    3 Power Supply 650W Cooler Master Price: 5000
    4 CPU Cooler water Based Cooler Master Price: 10000
    5 Processor i7 7700k Intel Price: 50000
    6 Processor i5 10400f Intel Price: 45000
    7 Processor Ryzen 5 1600f AMD Price: 20000
Enter 1: Shop Now
Enter 2: Add To Cart
Enter 3: Check Description
Enter 0: To Go Back To Menu
Enter Choice: 2
Enter Product No OR Enter 0 To Go Back: 1
-----Accessories-----
Name => Desktop Casing
Company => Cooler Master
Price=20000
Quantity=1
SHIPPINGFEE=100
Total Price => 20100

```

```

<-----Menu-----
Enter 1: For Desktop Computers
Enter 2: For Laptop Computers
Enter 3: For Accessories
Enter 0: To Go Back
Enter Choice: 1
    1 Intel Core i3 10th gen Price: 76000
    2 Intel Core i5 10th gen Price: 86000
    3 Intel Core i7 10th gen Price: 106000
    4 Intel Core i9 10th gen Price: 146000
Enter 1: Shop Now
Enter 2: Add To Cart
Enter 3: Check Description
Enter 0: To Go Back To Main
Enter Choice: 2
Enter Product No OR Enter 0 To GO Back: 4
-----Desktop-----
Company => Intel
Model => Core i9 10th gen
Price => 100000 Ram => 8 GB Price: 5000
GPU => RTX 1060 Ti GPU Price=40000
Memory => 1TB MemoryPrice=5000
Quantity => 1
SHIPPINGFEE=1000
Total Price => 146000
<-----Menu-----
Enter 1: For Desktop Computers
Enter 2: For Laptop Computers
Enter 3: For Accessories
Enter 0: To Go Back
Enter Choice: 0

```


-----Welcome To C Mart-----

Enter 1: To Check Menu

Enter 2: To View Account Details

Enter 3: To View Cart

Enter 0: To Exit

Enter Choice: 2

-----Account-----

Login => haseebshah936@gmail.com

Password => 1234

Address => Lahore Pakistan

PhoneNo => 0333

Cart => 2

Confirmed Orders => 1

Enter 1: To View Confirmed Order

Enter 2: To View Cart

Enter 0: To Go Back

Enter Choice: 1

-----Laptop-----

Company => Lenovo

Model => v320 Idea Pad Screen Size => 16

Price => 60000 Ram => 8 GB Price: 5000

Memory => 1TB MemoryPrice=5000

Quantity => 2

SHIPPINGFEE=500

Total Price => 140500

-----Welcome To C Mart-----

Enter 1: To Check Menu

Enter 2: To View Account Details

Enter 3: To View Cart

Enter 0: To Exit

Enter Choice: 2

-----Account-----

Login => haseebshah936@gmail.com

Password => 1234

Address => Lahore Pakistan

PhoneNo => 0333

Cart => 2

Confirmed Orders => 1

Enter 1: To View Confirmed Order

Enter 2: To View Cart

Enter 0: To Go Back

Enter Choice: 2

1 Desktop CasingCooler Master Price: 20000

2 Intel Core i9 10th gen Price: 146000

Enter 1: Shop Now

Enter 2: To Remove Item From Cart

Enter 0: Back Now

Enter Choice: 2

Enter Product No OR Enter 0 To GO Back: 1

<----

-----Welcome To C Mart-----

Enter 1: To Check Menu

Enter 2: To View Account Details

Enter 3: To View Cart

Enter 0: To Exit

Enter Choice: 3

1 Intel Core i9 10th gen Price: 146000

Enter 1: Shop Now

Enter 2: To Remove Item From Cart

Enter 0: Back Now

Enter Choice: 1

Enter Product No OR Enter 0 To GO Back: 1

Enter Quantity: 3

-----Desktop-----

Company => Intel

Model => Core i9 10th gen

Price => 100000 Ram => 8 GB Price: 5000

GPU => RTX 1060 Ti GPU Price=40000

Memory => 1TB MemoryPrice=5000

```
Quantity => 3
SHIPPINGFEE=1000
Total Price => 436000
-----Thanks For Buying From C_Mart-----
<----
-----Welcome To C Mart-----
Enter 1: To Check Menu
Enter 2: To View Account Details
Enter 3: To View Cart
Enter 0: To Exit
Enter Choice: 2
-----Account-----
Login => haseebshah936@gmail.com
Password => 1234
Address => Lahore Pakistan
PhoneNo => 0333
Cart => 0
Confirmed Orders => 2
Enter 1: To View Confirmed Order
Enter 2: To View Cart
Enter 0: To Go Back
Enter Choice: 1
-----Laptop-----
Company => Lenovo
Model => v320 Idea Pad Screen Size => 16
Price => 60000 Ram => 8 GB Price: 5000
Memory => 1TB MemoryPrice=5000
Quantity => 2
SHIPPINGFEE=500
Total Price => 140500
-----Desktop-----
```

```
Company => Intel
Model => Core i9 10th gen
Price => 100000 Ram => 8 GB Price: 5000
GPU => RTX 1060 Ti GPU Price=40000
Memory => 1TB MemoryPrice=5000
Quantity => 3
SHIPPINGFEE=1000
Total Price => 436000
-----Welcome To C Mart-----
Enter 1: To Check Menu
Enter 2: To View Account Details
Enter 3: To View Cart
Enter 0: To Exit
Enter Choice: 0
```

```
Enter 1: To Login
Enter 2: To Sign Up
Enter 0: To Skip
Enter Choice: 0
-----Welcome To C Mart-----
Enter 1: To Check Menu
Enter 2: To View Account Details
Enter 3: To View Cart
Enter 0: To Exit
Enter Choice: 2
Enter 1: To Login
Enter 2: To Sign Up
Enter 0: To Skip
Enter Choice: 1
Enter Email: haseebshah936@gmail.com
Enter password: 1234
-----Login Successful-----

-----Welcome To C Mart-----
Enter 1: To Check Menu
Enter 2: To View Account Details
Enter 3: To View Cart
Enter 0: To Exit
Enter Choice: 2
-----Account-----
Login => haseebshah936@gmail.com
Password => 1234
Address => Lahore Pakistan
PhoneNo => 0333
Cart => 0
Confirmed Orders => 2
Enter 1: To View Confirmed Order
Enter 2: To View Cart
Enter 0: To Go Back
Enter Choice: 1
```

```
-----Laptop-----
Company => Lenovo
Model => v320 Idea Pad Screen Size => 16
Price => 60000 Ram => 8 GB Price: 5000
Memory => 1TB MemoryPrice=5000
Quantity => 2
SHIPPINGFEE=500
Total Price => 140500
-----Desktop-----
Company => Intel
Model => Core i9 10th gen
Price => 100000 Ram => 8 GB Price: 5000
GPU => RTX 1060 Ti GPU Price=40000
Memory => 1TB MemoryPrice=5000
Quantity => 3
SHIPPINGFEE=1000
Total Price => 436000
-----Welcome To C Mart-----
Enter 1: To Check Menu
Enter 2: To View Account Details
Enter 3: To View Cart
Enter 0: To Exit
Enter Choice: 0
```