

Department of Computer Science and Engineering

Course Title: Object Oriented Programming Lab 1

Course Code: CSE 202

Class Report for OOP LAB I Project

Project name: Mobile Store PoS System

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Mobile Store PoS System

The diagrams of the class files which will make this system possible are given below:

Customer Class

private int customerId;
private String customerName;
private String customerNumber;

Customer (int customerId, String customerName, String customerNumber)

public int getCustomerId()
public void setCustomerId(int customerId)
public String getCustomerName()
public void setCustomerName(String customerName)
public String getCustomerNumber()
public void setCustomerNumber(String customerNumber)
public String toString()

Interface CustomerRegistration

Void registrationCustomer();

InvalidNumberException extends Exception

InvalidNumberException(String num)

Device Class

public int deviceId; public String deviceName; public double devicePrice;

Device (int, String, double) toString()

MobileStore Class

static ArrayList<Device>AvailableDevice

public void addDevice(Device device)
public void removeDevice(int id)
public void getMobileStoreItems()
public void viewMobileList()

interface DiscountProvider

double applyDiscount(double discount);

InvalidChoiceException extends Exception

InvalidChoiceException(int choice)

Cart class extends MobileStore implements DiscountProvider,CustomerRegistration

Private int n Private int n2

ArrayList<Device>items

Customer customer[1000]
ArrayList<Customer>Customerlist

Public Cart()

public void registerCustomer()
public void getCustomerDetails()
public void addItem()
public void removieItem(int deviceId)
public void clearCart()
public void getCartItems()
public double getTotalPrice()
public double applyDiscount(double discount)

PoS class

main()

The function which will provided in the main method are:

*****Menu For Worker****

- 1. Add Device In Mobile Store
- 2. Remove Device From The Mobile Store
- 3. Providing Discount For The Customer
- 4. Customer Registration
- 5. Registered Customer List

Device List Accessible By Both Employee And Customer

6. To View Whole Device List In Store

*****Menu For Customer****

- 7. Add Device In Cart
- 8. Remove Device From Cart
- 9. Clear All Device From Cart
- 10. View Cart Details
- 11. Exit

Implementation Part

Customer Class

```
public class Customer {
      private int customerId;
       private String customerName;
       private String customerNumber;
          public Customer(int customerId, String customerName,
String customerNumber) {
                this.customerId = customerId;
                this.customerName = customerName;
                this.customerNumber = customerNumber;
          }
          public int getCustomerId() {
                return customerId;
          }
          public void setCustomerId(int customerId) {
                this.customerId = customerId;
```

```
}
          public String getCustomerName() {
               return customerName;
          public void setCustomerName(String customerName) {
               this.customerName = customerName;
          }
          public String getCustomerNumber() {
               return customerNumber;
          }
          public void setCustomerNumber(String customerNumber) {
               this.customerNumber = customerNumber;
          }
          @Override
          public String toString() {
               return "Customer ID: " + customerId + "\nCustomer
Name: " + customerName +"\nCustomer Number:
"+customerNumber;
          }
}
```

Interface CustomerRegistration

```
public interface CustomerRegistration {
     public abstract void registerCustomer()throws
InvalidNumberException;
}
```

InvalidNumberException Class

```
public class InvalidNumberException extends Exception{
   public InvalidNumberException(String num) {
      super(num+ " Is Invalid Number. Number Must Be 11 Digits.");
   }
}
```

Device Class

```
public class Device {
     public int deviceId;
     public String deviceName;
     public double devicePrice;
  public Device (int deviceId, String deviceName, double devicePrice) {
           this.deviceId = deviceId;
           this.deviceName = deviceName;
           this.devicePrice = devicePrice;
     }
  @Override
  public String toString() {
     return "\nDevice ID :" + deviceId + "\nDevice Name :" +
deviceName + "\nDevice Price :" + devicePrice +" Taka";
  }
}
```

MobileStore Class

```
import java.util.ArrayList;
import javax.swing.JOptionPane;
public class MobileStore {
     public static ArrayList<Device>AvailableDevice=new ArrayList<>();
     public void addDevice(Device device){
                 AvailableDevice.add(device);
     }
     public void removeDevice(int id) {
             int c=0;
             for(int i=0;i<AvailableDevice.size();i++) {</pre>
             if(id==AvailableDevice.get(i).deviceId) {
             AvailableDevice.remove(i);
            JOptionPane.showMessageDialog(null,"(Remove Device
From Mobile Store Successfully!)");
             C++;
             }
```

```
if(c==0) {
                  JOptionPane.showMessageDialog(null,"(Device Not
Found In Store.)");
             }
     }
  public void getMobileStoreItems() {
     for(int i=0;i<AvailableDevice.size();i++) {</pre>
           JOptionPane.showMessageDialog(null,"Device : "+(i+1) +
AvailableDevice.get(i));
      }
  }
  public void viewMobileList() {
     JOptionPane.showMessageDialog(null,"....Available Device
Lists....");
           getMobileStoreItems();
           if(AvailableDevice.size()==0) {
                 JOptionPane.showMessageDialog(null,"\n(No Device
Available In Store!)");
           }
     }
  }
```

Interface DiscountProvider

```
public interface DiscountProvider {
    public abstract double applyDiscount(double discount);
}
```

InvalidChoiceException Class

```
public class InvalidChoiceException extends Exception {
    public InvalidChoiceException(int choice) {
        super("\n"+choice+" Is Invalid Choice. Choice Must Be 1 to 11. ");
    }
}
```

Cart Class

```
import javax.swing.JOptionPane;
import java.util.ArrayList;
public class Cart extends MobileStore implements
DiscountProvider,CustomerRegistration{
     ArrayList<Device> items = new ArrayList<>();
     Customer customer[]=new Customer[1000];
     ArrayList<Customer> CustomerList=new ArrayList<>();
     private int n,n2;
     public Cart() {
          this.n=0;
          this.n2=-1;
     }
     @Override
     public void registerCustomer() throws InvalidNumberException{
          try {
             int c=0;
```

```
n++;
               int
id=Integer.parseInt(JOptionPane.showInputDialog("Enter Customer ID:
"));
     String name=JOptionPane.showInputDialog("Enter Customer
Name:");
     String number=JOptionPane.showInputDialog("Enter Customer
Number: ");
     if(number.length()<11||number.length()>11) {
          throw new InvalidNumberException(number);
     }
     else {
     customer[n]=new Customer(id,name,number);
      for(int i = 1;i<n;i++) {
          try {
     if(customer[i].getCustomerId()==customer[n].getCustomerId()) {
```

```
C++;
          }
         }catch(NullPointerException e){
      }
      if(c==0) {
          CustomerList.add(customer[n]);
          JOptionPane.showMessageDialog(null,"(Customer
registration done!)\n");
          n2++;
     JOptionPane.showMessageDialog(null,CustomerList.get(n2));
      }
      else {
          JOptionPane.showMessageDialog(null,"(Customer account
already exists.)");
         }
     }
          catch(NumberFormatException e) {
```

```
JOptionPane.showMessageDialog(null, "Wrong Input. Please
Try Again");
           }
     }
     public void getCustomerDetails() {
     for(int i=0;i<CustomerList.size();i++) {</pre>
           JOptionPane.showMessageDialog(null,"Customer: "+(i+1));
           JOptionPane.showMessageDialog(null, CustomerList.get(i));
  }
     if(CustomerList.size()==0) {
           JOptionPane.showMessageDialog(null,"(Customer List Is
Empty!)");
     }
 }
     public void addItem(){
           try {
            int c=0;
```

```
int
deviceid=Integer.parseInt(JOptionPane.showInputDialog("Enter The
Device Id: "));
            for(int i=0;i<AvailableDevice.size();i++) {</pre>
            if(deviceid==AvailableDevice.get(i).deviceId) {
                 Device device=new
Device(AvailableDevice.get(i).deviceId,AvailableDevice.get(i).deviceNam
e, AvailableDevice.get(i).devicePrice);
                 items.add(device);
                 JOptionPane.showMessageDialog(null,"(Add Device
Successfully In The Cart!)");
                 C++;
             }
            if(c==0) {
                 JOptionPane.showMessageDialog(null,"(Device Not
Available In Stock.)");
             }
           catch(NumberFormatException e) {
           JOptionPane.showMessageDialog(null, "Wrong Input. Please
Try Again");
```

```
}
  }
      public void removieltem(int deviceId) {
           int c=0;
           for(int i=0;i<items.size();i++) {</pre>
                   if(deviceId==items.get(i).deviceId) {
                   items.remove(i);
                   JOptionPane.showMessageDialog(null,"(Remove
Device Successfully From The Cart!)");
                   C++;
                   }
       }
           if(c==0) {
                 JOptionPane.showMessageDialog(null,"(Device Not
Found In The Cart.)");
           }
      }
     public void clearCart() {
    items.clear();
      }
      public void getCartItems() {
     for(int i=0;i<items.size();i++) {</pre>
```

```
//JOptionPane.showMessageDialog(null,"\nProduct :
"+(i+1));
           JOptionPane.showMessageDialog(null,items.get(i));
  }
 }
     public double getTotalPrice() {
     double totalPrice=0;
     for(int i=0;i<items.size();i++) {</pre>
       totalPrice=totalPrice+items.get(i).devicePrice;
     return totalPrice;
  }
     @Override
     public double applyDiscount(double discount) {
           double price =getTotalPrice();
           double AfterDiscount=price-(price*(discount/100));
           return AfterDiscount;
     }
}
```

PoS class

```
import javax.swing.JOptionPane;
public class PoS {
     public static void main(String[] args) {
          Cart cart=new Cart();
           Device device;
           int choice=0;
          while(true)
          {
               String input = JOptionPane.showInputDialog(null,
                   "\n**** Menu For Employee**** \n\n"
                      +"1. Add Device In Mobile Store\n"
                   +"2. Remove Device From The Mobile Store\n"
                   +"3. Providing Discount For The Customer\n"
                   +"4. Customer Registration\n"
                   +"5. Registered Customer List\n"
```

```
+ "\n*** Device Lists Accessible by Both Employee
and Customer***\n\n"
                  +"6.To View Whole Device Lists In Store \n"
                  +"\n****Menu For Customer****\n\n"
                     +"7. Add Device In Cart\n"
                     +"8. Remove Device From Cart\n"
                  +"9. Clear All Device From Cart\n"
                  +"10. View Cart Details\n"
                  +"11. Exit\n"
                      + "\nEnter your option: ","Menu",
JOptionPane.PLAIN MESSAGE);
             try {
             choice = Integer.parseInt(input);
      }
             catch(NumberFormatException e) {
                     JOptionPane.showMessageDialog(null, "Wrong
Input. Please Try Again");
      }
      if(choice==1) {
          try {
```

```
int
quantity=Integer.parseInt(JOptionPane.showInputDialog("Enter How
Many Device You Want To Add: "));
            for(int i=0;i<quantity;i++)</pre>
             {
                        int
id=Integer.parseInt(JOptionPane.showInputDialog("Enter Device ID:")
);
              String name=JOptionPane.showInputDialog("Enter
Device Name: ");
              double
price=Double.parseDouble(JOptionPane.showInputDialog("Enter Device
Price : " ) );
              device= new Device(id,name,price);
           cart.addDevice(device);
           JOptionPane.showMessageDialog(null,"(Add Device
Successfully In Mobile Store!)");
```

}

```
}
          catch(NumberFormatException e) {
                JOptionPane.showMessageDialog(null, "Wrong Input.
Please Try Again");
          }
      } else if(choice==2) {
          try {
                        int
id=Integer.parseInt(JOptionPane.showInputDialog("Enter Device ID:")
);
             cart.removeDevice(id);
          }catch(NumberFormatException e) {
                JOptionPane.showMessageDialog(null, "Wrong Input.
Please Try Again");
          }
      }else if(choice==3) {
          double price =cart.getTotalPrice();
```

```
JOptionPane.showMessageDialog(null, "Total Price:
"+price+" Taka");
                                                   try {
                                                                                                                    double
discount Percentage = Double.parse Double (JOption Pane.show Input Dialogonal Pane) and the property of the 
g("Enter Discount Percentage: "));
                                                    double price2 =cart.applyDiscount(discountPercentage);
                                                    JOptionPane.showMessageDialog(null,"After Discount New
Price : "+price2+" Taka" );
                                                    }
                                                    catch(NumberFormatException e) {
                                                                               JOptionPane.showMessageDialog(null, "Wrong Input.
Please Try Again");
                               }else if(choice==4) {
                                                    try {
                                                    cart.registerCustomer();
                                                    }
                                                    catch(InvalidNumberException e) {
```

```
JOptionPane.showMessageDialog(null,
e.getMessage());
           }
      }else if(choice==5) {
           JOptionPane.showMessageDialog(null,".....Registrated
Customer List....");
           cart.getCustomerDetails();
      }else if(choice==6) {
           cart.viewMobileList();
      }else if(choice==7) {
           cart.addItem();
      }else if(choice==8) {
           try {
                         int
id=Integer.parseInt(JOptionPane.showInputDialog(null,".....Remove
Device From The Cart.....\n"+
                            "Enter Device ID:"));
              cart.removieItem(id);
```

```
}
           catch(NumberFormatException e) {
                JOptionPane.showMessageDialog(null, "Wrong Input.
Please Try Again");
      }else if(choice==9) {
           cart.clearCart();
             JOptionPane.showMessageDialog(null,"All Product
Cleared From The Cart.");
      }else if(choice==10) {
         JOptionPane.showMessageDialog(null,".....Selected Devices In
The Cart.....");
           if(cart.getTotalPrice()!=0.0) {
         cart.getCartItems();
         JOptionPane.showMessageDialog(null,"Total Price: " +
cart.getTotalPrice() +" Taka");
           }
           else {
                 JOptionPane.showMessageDialog(null,"....Cart is
empty....");
```

```
} else if(choice==11) {
           JOptionPane.showMessageDialog(null, "Exiting..."+"\nThank
You For Visiting Your Store ");
           break;
      }else {
           if(choice!=0) {
           try {
                throw new InvalidChoiceException(choice);
           }
           catch(InvalidChoiceException e) {
                 JOptionPane.showMessageDialog(null,
e.getMessage());
             }
        }
}
```

Input Output































































































































