

JAVA PROGRAMMING LABORATORY

09-26-2020.

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MO Batch.

Write a java program that implements the concept of interface. The program should include the following key features

1. An interface named customerTransaction which has a variable and public methods called costCalculation, customerRating and product details.
2. Create classes named goodCustomer, moderateCustomer and neglectedCustomer that implements the interface method, the program should display the customer transaction details and the product purchase details. The program should fix discount for each customer based on the rating. Define the method accordingly to implement this scenario.

Program

```
import java.util.Scanner;
interface customerTransaction{
    int arr[] = new int[100];
    int id = 0;
    int n1 = 0;
    int cost = 0;
    double a = 0.0;
    String pro[] = new String[100];
    void costCalculation(int arr[]);
    void details(int id, String pro[], int arr[], int n1, int
cost);
    double rating();
    void transactionDetails(int arr[], double a);
}
class goodCustomer implements customerTransaction{
    public int cost = 0;
    public void costCalculation(int amount[]){
        for(int i = 0; i < amount.length; i++){
            cost += amount[i];
        }
    }
    public void details(int id, String pro[], int amount[], int
n1, int cost){
        System.out.println("Id: " + String.valueOf(id));
        for(int i = 0; i < n1; i++){
            System.out.println("Name: " + pro[i]);
            System.out.println("Amount: " +
String.valueOf(amount[i]));
```

```

        System.out.println("\n");
    }
}
public double rating(){
    return 0.25;
}
public void transactionDetails(int amount[],double a){
    int cost = 0;
    for(int i = 0; i < amount.length; i++){
        cost += amount[i];
    }
    System.out.println("Actual amount to be paid is Rs." +
String.valueOf(cost));
    System.out.println("You\'re offered with a 25%
Discount. So that you can pay Rs." + String.valueOf(cost - cost
* a));
}
}
class moderateCustomer implements customerTransaction{
    int cost = 0;
    public void costCalculation(int amount[]){
        for(int i = 0; i < amount.length; i++){
            cost += amount[i];
        }
    }
    public void details(int id, String pro[], int amount[], int
n1, int cost){
        System.out.println("Id: " + String.valueOf(id));
        for(int i = 0; i < n1; i++){
            System.out.println("Name: " + pro[i]);
            System.out.println("Amount: " +
String.valueOf(amount[i]));
            System.out.println("\n");
        }
    }
    public double rating(){
        return 0.10;
    }
    public void transactionDetails(int amount[], double a){
        int cost = 0;
        for(int i = 0; i < amount.length; i++){
            cost += amount[i];
        }
        System.out.println("Actual amount to be paid is Rs." +
String.valueOf(cost));
    }
}

```

```

        System.out.println("You\'re offered with a 10%
Discount. So that you can pay Rs." + String.valueOf(cost - cost
* a));
    }
}
class neglectedCustomer implements customerTransaction{
    int cost = 0;
    public void costCalculation(int amount[]){
        for(int i = 0; i < amount.length; i++){
            cost += amount[i];
        }
    }
    public void details(int id, String pro[], int amount[], int
n1, int cost){
        System.out.println("Id: " + String.valueOf(id));
        for(int i = 0; i < n1; i++){
            System.out.println("Name: " + pro[i]);
            System.out.println("Amount: " +
String.valueOf(amount[i]));
            System.out.println("\n");
        }
        for(int i = 0; i < amount.length; i++){
            cost += amount[i];
        }
    }
    public double rating(){
        return 1.00;
    }
    public void transactionDetails(int amount[], double a){
        int cost = 0;
        for(int i = 0; i < amount.length; i++){
            cost += amount[i];
        }
        System.out.println("Amount to be paid is Rs." +
String.valueOf(cost * a));
    }
}
public class Customer{
    public static void main(String... args){
        Scanner sc = new Scanner(System.in);
        Customer obj = new Customer();
        while(true){
            System.out.print("1. Run\n2. Exit\nEnter your
choice: ");
            int n = sc.nextInt();
            if(n == 1){
                System.out.print("Enter customerId: ");

```

```

        int id = sc.nextInt();
        System.out.print("Enter number of products
purchased: ");

        int n1 = sc.nextInt();
        int arr[] = new int[n1];
        String det[] = new String[n1];
        for(int j = 0; j < n1; j++){
            System.out.print(String.valueOf(j + 1)
+ "\n");

            System.out.print("Name of the product:
");

            det[j] = sc.next();
            System.out.print("Price: ");
            arr[j] = sc.nextInt();
        }
        int cost = 0;
        for(int k = 0; k < n1; k++){
            cost += arr[k];
        }
        if(cost >= 0 && cost <= 80){
            neglectedCustomer obj1 = new
neglectedCustomer();

            obj1.costCalculation(arr);
            System.out.println("\n\nProduct
Details");

            obj1.details(id, det, arr, n1, cost);
            System.out.println("Transaction
Details");

            double a = obj1.rating();
            obj1.transactionDetails(arr, a);
        }
        else if(cost >= 80 && cost <= 150){
            moderateCustomer obj1 = new
moderateCustomer();

            obj1.costCalculation(arr);
            System.out.println("\n\nProduct
Details");

            obj1.details(id, det, arr, n1, cost);
            System.out.println("Transaction
Details");

            double a = obj1.rating();
            obj1.transactionDetails(arr, a);
        }
        else if(cost > 150){
            goodCustomer obj1 = new goodCustomer();
            obj1.costCalculation(arr);

```

```

        System.out.println("\n\nProduct
Details");
        obj1.details(id, det, arr, n1, cost);
        System.out.println("Tracnsaction
Details");

        double a = obj1.rating();
        obj1.transactionDetails(arr, a);
    }
    else{
        System.out.print("Cannot be
displayed\n");
    }
}
else if(n == 2){
    break;
}
}
}
}

```

Output

C:\Windows\System32\cmd.exe

```
D:\Semester 5\Java Programming\Lab 09-26>javac Customer.java
```

```
D:\Semester 5\Java Programming\Lab 09-26>java Customer
```

```
1. Run
```

```
2. Exit
```

```
Enter your choice: 1
```

```
Enter customerId: 1
```

```
Enter number of products purchased: 2
```

```
1
```

```
Name of the product: soap
```

```
Price: 25
```

```
2
```

```
Name of the product: rice_3_kg
```

```
Price: 50
```

```
Product Details
```

```
Id: 1
```

```
Name: soap
```

```
Amount: 25
```

```
Name: rice_3_kg
```

```
Amount: 50
```

```
Transaction Details
```

```
Amount to be paid is Rs.75.0
```

```
1. Run
```

```
2. Exit
```

```
Enter your choice: 1
```

```
Enter customerId: 2
```

```
Enter number of products purchased: 3
```

```
1
```

```
Name of the product: ice_cream
```

```
Price: 50
```

```
2
```

```
Name of the product: juice
```

```
Price: 30
```

```
3
```

```
Name of the product: chocolate
```

```
Price: 100
```

Product Details

Id: 2

Name: ice_cream

Amount: 50

Name: juice

Amount: 30

Name: chocolate

Amount: 100

Tracnsaction Details

Actual amount to be paid is Rs.180

You're offered with a 25% Discount. So that you can pay Rs.135.0

1. Run

2. Exit

Enter your choice: 1

Enter customerId: 3

Enter number of products purchased: 2

1

Name of the product: rice_5_kg

Price: 100

2

Name of the product: shampoo

Price: 2

Product Details

Id: 3

Name: rice_5_kg

Amount: 100

Name: shampoo

Amount: 2

Tracnsaction Details

Actual amount to be paid is Rs.102

You're offered with a 10% Discount. So that you can pay Rs.91.8

1. Run

2. Exit

Enter your choice: 2

D:\Semester 5\Java Programming\Lab 09-26>_