COMP201- Object Oriented Programming

Fall 2016

HOMEWORK2

Deadline: 9.10.2016

In this homework, you are asked to write an application for a supermarket. The rules for the supermarket are below:

* There are 3 customers of the supermarket. If customer does not give his name, the application defines his name as “unknown”.
* Customers may have a promotion value between 0 and 100. For instance, if a customer has a promotion of 70, it means he pays only the 70% of his shopping. If promotion value is not defined for a customer, the application automatically sets it as 100.
* The application records the list of shopping. A customer of the supermarket does each shopping. One customer can do more than one shopping.
* The application keeps the day and moth of the shopping. For the setting month and day, the application also checks if the day and month is valid. The application first sets the day and it checks if the day value is between 1 and 31. Otherwise, it sets it to 1. Then application sets the month and checks the month value is suitable for the day entered. For that assume that February is always 28 days.
* For each shopping, there are calculatedPayment and discountedPayment values. When the customer finishes the shopping, the discountedPayment is calculated according to the promotion value of the customer.
* Until the customer finishes the shopping (i.e. checkout), he first addsItems to the shopping and the application adds the prize of the item to the calculatedPayment. The application also checks that the prize cannot be negative value (Note that, the application does not trace the items).
* After finishing adding items, the customer may decide to leave some items. For this, the application reduces the amount form the calculatedPayment. Also, the application checks that the calculatedPayment cannot be a negative value.
* The programmer has to write the classes below:

Shopping

-customer: Customer

-day: int

-month: int

-calculatedPayment: int

-discountPayment: int

setCustomer(customer: Customer)

getCustomer(): Customer

setDay(day:int)

getDay(): int

setMonth(day:int)

getMonth(): int

getCalculatedPayment(): int

getDiscountedPayment():int

addItem(int prize)

deleteItem(int prize)

Customer

-name: String

-promotion: int

Customer()

Customer(name:String)

Customer(name:String, promotion:int)

setName(name: String)

getName(): String

setPromotion(promotion:int)

getPromotion(): int

* In the main function, the application defines 3 customers as following:

Customer c1 = new Customer("Ali",90);

Customer c2 = new Customer("Ayse");

Customer c3 = new Customer();

c3.setPromotion(70);

* The application continues until the user wants to enter new shopping. The maximum number of shopping entered to the application is 100. At the end, the application lists all the shopping on the screen.

Here is an example output of the application.

Whould you like to do shopping? (1:yes, 2:no)

1

Which customer?

1: Ali %90

2: Ayse %100

3: unKnown %70

2

Day?

13

Month?

2

Add Item? (1:yes, 2:no)

1

Amount:

400

Add Item? (1:yes, 2:no)

1

Amount:

600

Add Item? (1:yes, 2:no)

2

Delete Item ?(1:yes, 2:no)

1

Amount:

1100

The operation is invalid

Delete Item?(1:yes, 2:no)

1

Amount:

800

Delete Item?(1:yes, 2:no)

2

Would you like to continue shopping?(1:yes, 2:no)

1

Which customer?

1: Ali %90

2: Ayse %100

3: unKnown %70

3

Day?

7

Month?

13

Month value is not valid. It is set to 1.

Add Item? (1:yes, 2:no)

1

Amount:

330

Add Item? (1:yes, 2:no)

2

Delete Item ?(1:yes, 2:no)

2

Would you like to continue shopping?(1:yes, 2:no)

2

0 Ayse 13/2 200 200

1 unKnown 7/1 330 231