Java Basics

Training Assignment

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RECORD OF CHANGES

No	Effective Date	Change Description	Reason	Reviewer	Approver
1	20/May/2020	Createw a new assignment	Create new	DieuNT1	VinhNV

Contents

CODE:	**AssignmentFinal**	
TYPE:	**Long**	
LOC:	**N/A**	
DURATION:	**90 MINUTES**	

Assignment Final

Objective

- Java OOP

Business needs

- TBD

Working requirements

- Working environment: Eclipse IDE.
- Delivery: Source code, deployment and testing, reviewing evident packaged in a compress archive.

Product architecture

- N/A

Technologies

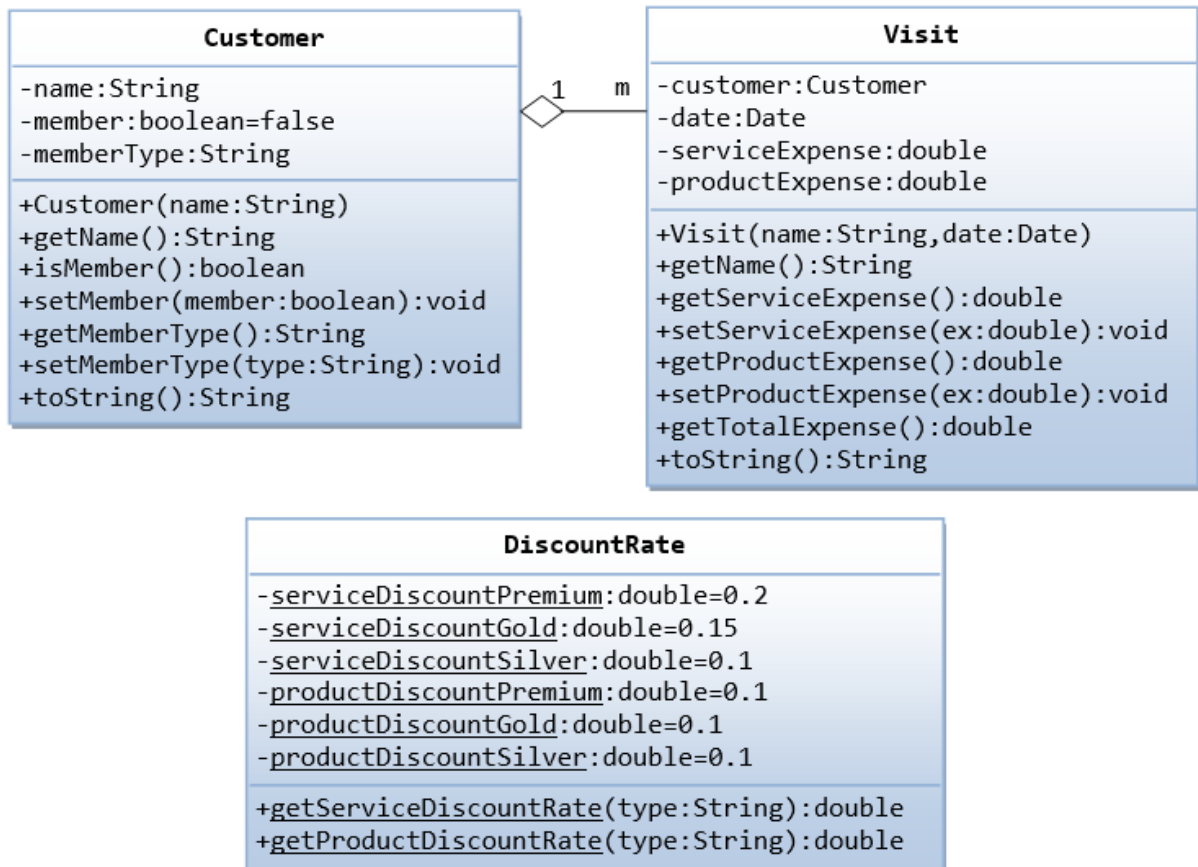The product implements one or more technology:

- Java basics

Stored Data

- N/A

Exercise 1:

You are asked to write a discount system for a beauty salon, which provides services and sells beauty products. It offers 3 types of memberships: Premium, Gold and Silver. Premium, gold and silver members receive a discount of 20%, 15%, and 10%, respectively, for all services provided. Customers without membership receive no discount. All members receives a flat 10% discount on products purchased (this might change in future). Your system shall consist of three classes: Customer, Discount and Visit, as shown in the class diagram. It shall compute the total bill if a customer purchases $x of products and $y of services, for a visit. Also write a test program to exercise all the classes.

```
┌─────────────────────────────────────┐                    ┌─────────────────────────────────────────┐
│              Customer                │                    │                  Visit                  │
├─────────────────────────────────────┤                    ├─────────────────────────────────────────┤
│ -name:String                        │  1        m        │ -customer:Customer                      │
│ -member:boolean=false               │◇──────────────     │ -date:Date                              │
│ -memberType:String                  │                    │ -serviceExpense:double                  │
├─────────────────────────────────────┤                    │ -productExpense:double                  │
│ +Customer(name:String)              │                    ├─────────────────────────────────────────┤
│ +getName():String                   │                    │ +Visit(name:String,date:Date)           │
│ +isMember():boolean                 │                    │ +getName():String                       │
│ +setMember(member:boolean):void     │                    │ +getServiceExpense():double             │
│ +getMemberType():String             │                    │ +setServiceExpense(ex:double):void      │
│ +setMemberType(type:String):void    │                    │ +getProductExpense():double             │
│ +toString():String                  │                    │ +setProductExpense(ex:double):void      │
└─────────────────────────────────────┘                    │ +getTotalExpense():double               │
                                                            │ +toString():String                      │
                                                            └─────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────┐
│               DiscountRate                    │
├─────────────────────────────────────────────┤
│ -serviceDiscountPremium:double=0.2           │
│ -serviceDiscountGold:double=0.15             │
│ -serviceDiscountSilver:double=0.1            │
│ -productDiscountPremium:double=0.1           │
│ -productDiscountGold:double=0.1              │
│ -productDiscountSilver:double=0.1            │
├─────────────────────────────────────────────┤
│ +getServiceDiscountRate(type:String):double  │
│ +getProductDiscountRate(type:String):double  │
└─────────────────────────────────────────────┘
```

The class DiscountRate contains only static variables and methods (underlined in the class diagram).

-- THE END --