# Homework 4

Your Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student ID:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Undergraduate (Yes/No): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q1. Adding data types to the attributes in the figure below. Note, you do not need to draw ERD, you can simply give a list with table name and attribute names, along with the data types in Oracle. [10]**

图示

描述已自动生成

**Q2. Below is the design for the case study of hotel-rooms-booking discussed in the class. [40]**

System/Application Requirements

* We want to build hotel room booking system
* Assume there are several hotels in Chicago
* Each hotel only has two types of the rooms – Standard Room with 2 beds, Standard Room with 1 big bed
* Customer can book rooms from our website. But the availability may vary from hotels to hotels

Our design:

* Hotel (HID, Name, Address, Cell, …)
* RoomType (TypeID, NumBeds, RoomSize, …)
* HotelRooms (RoomID, HID, TypeID, Quantity)
* Customer (CID, Name, Address, Email, …)
* Order (OrderID, CID, CheckinDate, CheckoutDate)
* RoomsInOrder (OrderID, RoomID, RoomQuantity)

a). Identify the PK and FK in each entity [10]

b). Draw ERD for physical DB design [10]

c). Now, we want to add “price”. Note that there would be unit price for the rooms, as well as the price in the orders. Special notes: hotels may release difference prices for different time periods. Complete your design in BCNF by showing your physical design by ERD [20]

**Q3. [10] Draw the final design in Q3 by using UML**

**Q4. [40] Using DDL and DML for the following**

Download the W5\_MovieRatings.zip file, unzip it. You will find four csv files, each of which is an entity/table. Therefore, there are 4 tables: Users, Movies, Ratings, Tags.

1. [4] Identify PK and FK in these tables. Use \* to indicate PK, and \_\_\_ to tell FK. For example, Student (StudentID\*, DeptID, Firstname, Lastname)
2. [8] Use create statements to create these tables in Oracle, show your SQL coding
3. [8] Use insert statements to insert values in these tables, show your SQL coding
4. [4] Add a column “TagDate” in the table Tags. After that, insert date values for the current entries in table Tags. Note, you can use any date values, show your SQL coding
5. [8] Drop table movies, show your SQL coding
6. [4] In table Ratings, change the data type of ratings to Number(2, 1) , show your SQL coding
7. [4] Assume that users can only give ratings, like, 1, 2, 3, 4, 5. In table Ratings, add a check constraint to guarantee that the input values for the column rating must be a value from (1, 2, 3, 4, 5)