Project 2 – Car Rental Database

DUE: Wednesday November 4th @ 11.59 pm

In this project, you will design and implement a database for keeping track of information about a car rental company. You will got through 3 phases, 1st is to create an EER schema diagram, phase 2 implement it in SQL and finally in phase 3 to create queries and a web application of the car rental company.

Assume the following requirements were collected for the database application:

1. The database keeps track of `CUSTOMERs`. Each `CUSTOMER` has a unique IdNo (assume this is a unique integer generated by the system for each new `CUSTOMER` such as 1, 2, 3, …), a Name (assume this is a string consisting of a single initial and last name, such as "J. smith" or "N. Guizani"), and a Phone (a string of 12 character such as "817-272-5333")
2. The database keeps track of `CARs` available for rental, they are categorized based on their type/ There are six main types: compact, medium, large, suv, truck, and van. Each type of car has its own DailyRate and weeklyRate (assume all cars of the same type have the same rental rate). There is only one rental location.
3. Each `CAR` has a VehicleID (a unique number for each car), Model(chevy, Toyota, ford, etc), and Year.
4. The database will keep track of the current (active) `RENTAL`s as well as scheduled `RENTAL`s of each `CAR`. There are two types of `RENTAL`: Daily and weekly. For each `daily rental`, the informatin kept will include the specific CAR and CUTOMER as well as the NoOfDays, StartDate, and ReturnDate (the ReturnDate can be calculated from the StartDate and NoOfDays). For each `weekly rental`, the information kept will include the specific `CAR` and `CUSTOMER` as well as NoOfWeeks, StartDate, and ReturnDate (can be calculated from the StartDAte and NoOfWeeks). Each rental will also have the AnountDue for the rental, which is a derived value that can be calculated from the other information.
5. The database will also keep track of which `CARs` are available for rental during which periods.

Phase 1:

You will first design an ER/EER schema diagram based upon the 'Car Rental' database requirements specified above by using the notation covered in your book. Don't forget to design the cardinality ratios and the participation between entities and relationships. Also, as part of this assignment, you should identify any missing or incomplete requirements and explicitly state them. You should also explicitly state any assumptions you made that were not part of the requirements listed above.

Next, you need to convert/map your ER/EER schema diagram to a relational database schema by using the notation covered in your book. Also, don't forget to denote primary and foreign keys. You should state the choices you made during the EER-to-Relational mapping and the reasons for your choices.

You should draw your ER/EER schema diagram and the relational database schema using a drawing tool of your choosing to create a computer image file or use any available database conceptual design tool.

For this phase, you need to submit only **ONE** document file (.pdf or .docx) with:

- your ER/EER schema diagram and an explanation of your design choices,
- your Relational Database Schema and an explanation of your design choices, and the honor code.

Name your file as teammate1lastname_teammate2lastname.docx. Make sure that your document looks professional. For example, you could have a cover page, an introduction (a few lines what is about), the mini-world description, references, etc.

HONOR CODE

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or that I contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.