CIS/CSC384

HomeWork 5: Due Apr 1, 2010 before class

You will turn in the assignment via bb. Turn in a single word/pdf document, and separate ER diagrams (as needed).

For problems 1 – 6, you must come up with separate ER diagrams for each step. Each step must modify the ER diagram form the previous step. Submit the ER diagrams separately also if you use ER Assistant tool.

For all problems, include additional documentation as you find appropriate in your ER diagram (designed using ER Assistant tool).

Points: [problem 1 – problem 6] = 0.5 each. [problem 7] – 1 point.

1. Come up with an ER Diagram for the following narrative. The database should track homes and owners. A home has a unique home identifier, a street address, a city, a state, a zip, a number of bedrooms, a number of bathrooms and square feet. A home is either owner occupied or rented. An owner has a SSN, a name, an optional spouse name, a profession, and an optional spouse profession. An owner can possess zero or more homes. Each home has only one owner.

2. Refine the ER Diagram from (1) by adding an agent entity type. Agents represent owners in the sale of a home. An agent can list many homes, but only one agent can list a home. An agent has a unique agent identifier, a name, an office identifier, and a phone number. When an owner agrees to list a home with an agent, a commission (percentage of the sale price) and a selling price are determined.

3. Refine the ER Diagram from (2), transform the attribute office identifier, into an entity type. Data about an office include the phone number, the manager name, and the address.

4. In the ER Diagram from (3), add a buyer entity type. A buyer entity type has a SSN, a name, a phone, preferences for the number of bedrooms and bathrooms, and a price range. An agent can work with many buyers, but a buyer works with only one agent.

5. Refine the ER Diagram from (4) with a generalization hierarchy to depict similarities between buyers and owners.

6. Revise the ER Diagram from (5) by adding an offer entity type. A buyer makes an offer on a home for a specified sales price. The offer starts on the submission date, and expires on the specified date. A unique number identifies an offer. A buyer can submit multiple offers for the same home.

7. Come up with SQL CREATE TABLE statements for the final ER diagram in (6). You must check your set of SQL CREATE TABLE statements will execute against Oracle (otherwise, report what errors you get).

8. For the following problem, come up with an ER diagram for the initial requirements, and then revise the ER diagram for the new requirements. Your solution must include an initial ER Diagram, and a revised ER diagram. [1 + 1 pts]

   The database is to assist physical plant personnel in managing assignments of keys to employees.

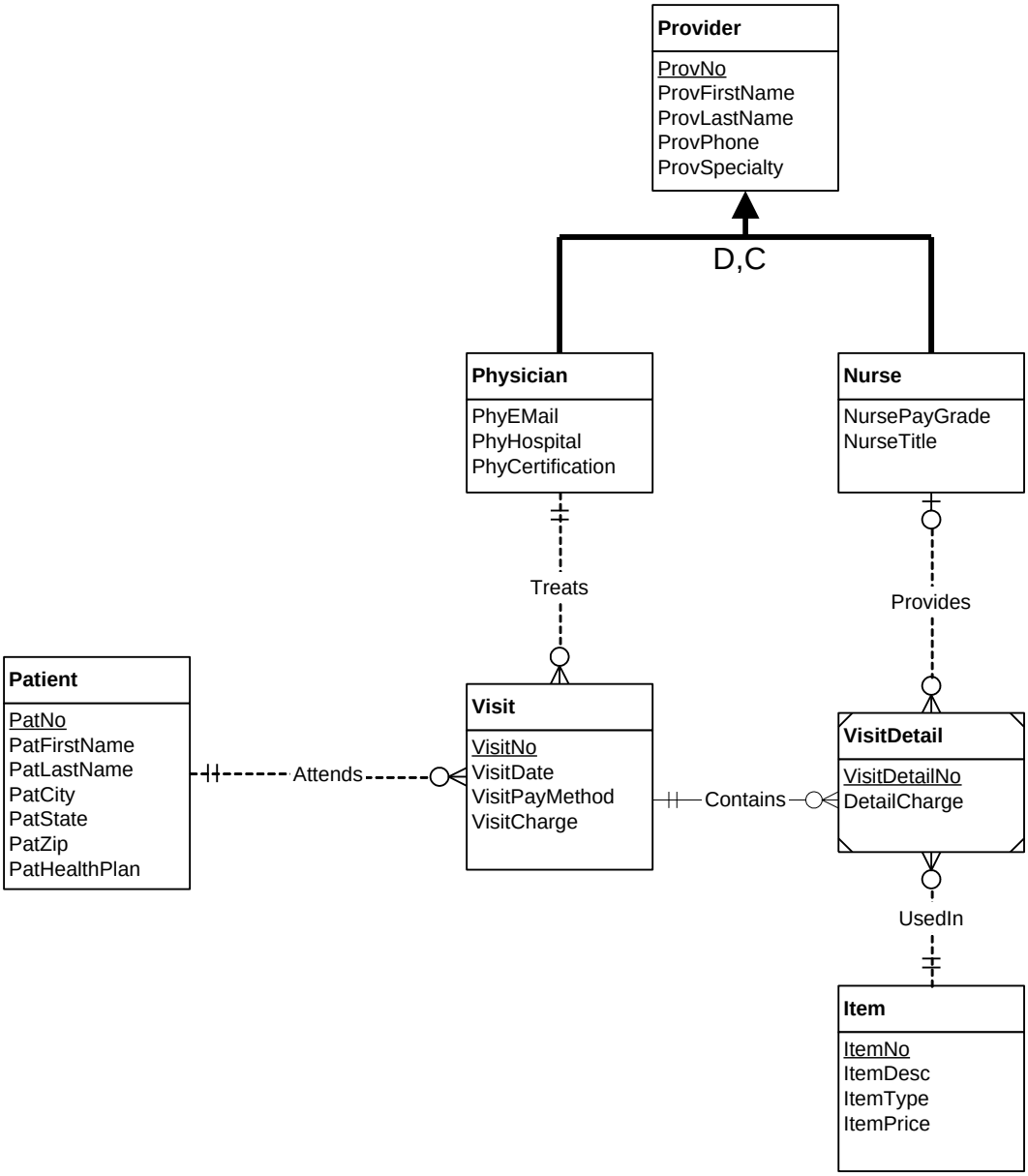
   - An employee has a unique emp number, a name, a position and an optional office number.
   - A building has a unique building number, a name, and a location within the campus.
   - A room has a room number, a size, a capacity, a number of entrances, and a description of equipment in the room. Because each room is located in exactly one building, the identification of a room depends on the identification of the building.
   - Key types(also known as master keys) are designed to open one or more rooms. A room may have one or more key types that open it. A key type has a unique key type number, a date designed, and the employee authorizing the key type. A key type must be authorized before it is created.
   - A copy of a key type is known as a key. Keys are assigned to employees. Each key is assigned to exactly one employee, an employee can hold multiple keys. The key type number plus a copy number uniquely identifies a key. The date the copy was made is recorded in the database.

   After reviewing the intial design, the supervisor decides to revise the requirements as follows. Show the ER diagram before the revisions, and after the revisions.

   - The physical plant needs to know not only the current holder of a key, but the past key holders. For past key holders, the date range that a key was held must be recorded.
   - The physical plant needs to know the current status of each key: in use by an employee, in storage or reported lost. If lost, the date reported lost should be stored.

9. Translate the above revised ER diagram into SQL create table statements. You MUST check the SQL against Oracle, and report whether it succeeded/there were errors. [2 pts]

10. Consider the ER Diagram for the patient visiting hospitals from Homework 2. Start from the ER diagram in the posted solution, which is given below. Translate the ER Diagram into SQL CREATE TABLE statements. You MUST check the SQL against Oracle, and report whether it succeeded/there were errors. [2 pts]


Provider
ProvNo
ProvFirstName
ProvLastName
ProvPhone
ProvSpecialty
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Physician
PhyEMail
PhyHospital
PhyCertification
Nurse
NursePayGrade
NurseTitle
Treats
Provides
Patient
PatNo
PatFirstName
PatLastName
PatCity
PatState
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