Homework 1: ER model for a Hotel Chain

Read the instructions carefully. Part of the challenge of conceptual modeling is that the scenario requirements are not completely clear and requirements emerge and/or get refined over time. This is simulated in your assignment by having increasing sets of requirements, PLUS that requirements may emerge or be refined in response to requests for clarification on Piazza. Unlike many assignments which have clear specifications up front, the lack of clarity, and the fact that you may have to make some assumptions on your own, is part of the assignment. There is no one correct solution.

Instructions:

You should work together with your homework team to create this ER model. Use any diagramming software that you prefer and use the diagramming notation you feel most comfortable with. Be consistent in your notation.

1. Start with the basic requirements, and create and save that model
2. Add the additional requirements part 1, refine the entire model, and save that model
3. Add the additional requirements part 2, refine the entire model, and save that model

When finished, you should have 3 versions of the same model that represent the development of your model **over time.** Along with your models, you should have all the assumptions that you made (written in the diagram or in a separate documents).

When asking questions about this assignment, please do not mix questions about the assignment and questions about the scenario. Questions about the assignment will be answered by one of us in the role of ***instructor***, but answers about the scenario requirements will be answered by one of us in the role of ***hotel chain owners***. Ask questions about the homework on Piazza, and only on Piazza.

Scenario details given in response to questions about the scenario requirements on Piazza should be considered as requirements that apply universally – your team must include those details in your model, even if your team did not ask the question.

Grading: You and your team will present your models to at least one of the instructors, and be able to explain the notation you used, explain the assumptions you made, and explain the process that you used to create the models and how they changed over time. Each person in your group should be able to discuss the work equally. You will be scored on following the directions, your understanding of the problem and the process, and the level of effort put into the models.

The scenario is on the next page.

SCENARIO

You are developing a database model for a hotel chain. This hotel chain has hotels all over the world.

Basic Requirements

Each individual hotel has a unique id, a name, an address and multiple phone numbers. It also has multiple features, for example: pool, conference facilities, spa, etc.

Each hotel has its own set of room types: e.g. single, double, suite, penthouse, etc. A room type has a size (in sq. meters), a capacity (max # of people), multiple features, and a price. Room types are specific to a single hotel – even if 2 hotels have single rooms – those single rooms are different in each hotel (differ in size, view, furnishings, etc.)

Each individual room in a hotel has a room number, a floor (even if the floor is part of the room number, because people sometimes want or do not want a specific floor) and belongs to a single room type.

The hotel chain keeps track of guests. Each guest has a unique guest id, also an identification type and number (e.g. US passport & number or driving license & number), an address and a home phone number and a mobile phone number.

A guest may be currently occupying one or more specific rooms. A guest is the person who pays, but their family members or friends may be occupying the room(s) that are assigned to the one guest.

Additional requirements #1

A guest may have one or more reservations for a room type in a specific hotel from a check-in to check-out date.

Additional requirements #2

Assume the price of a room is not fixed, but instead it depends on the day of the week and the season. There are numerous seasons that depend on the location of the hotel, for example: winter, winter holiday, beach season, etc. Each season has a name, and a start and end date. Seasons might be unique to a hotel, but sometimes a group of hotels that are nearby all share the same seasons.