Assignment #1: Database Schemas

Submission Instructions

- Submit your solutions as *three* *.mwb files through **Canvas>Assignments>To-Do**. Other file formats will not be accepted.
- *If you do not follow the instructions, your assignment will be counted late.*
- Late Assignment policy: See the syllabus.

Evaluation

Your database schemas will be graded using several factors:
- The correct use of entities, attributes, and relationships given.
- Correctly specify the primary key and foreign key.
- The correct method of connecting different relationships in a schema.
- The identification of maximum/minimum cardinality between entities.

Plagiarism and Academic Dishonesty

Please note that the work needs to be done individually. If you need help, you may consult with the instructor. Check the course syllabus for more detailed information. The following are considered plagiarism and/or academic dishonesty (not an exclusive list):

- Copy from another student's assignment
- *Using material from a source without a proper citation*
- *Turning in an assignment from a previous semester as if it were your own*
- *Having someone else complete your homework or project and submitting it as if it were your own*
- *Using material from another student's assignment in your own assignment*
- *Submitting work done for a different course or section without the instructor's approval ahead of time*
- *Helping others to plagiarize or cheat, or doing the work of another person*

If you use text, figures, and data in reports that were created by someone other than yourself, you must identify the source and clearly differentiate your work from the material that you are referencing. There are many different acceptable formats that you can use to cite the work of others. You must clearly show the reader what is your work and what is a reference to somebody else's work.

Plagiarism and cheating are serious offenses. Penalties for such actions are given at my discretion and can range from a failing grade for the individual assignment, to a failing grade for the entire course, to expulsion from the program.

Part 1: Create a database schema for each scenario. There are two scenarios.

Make sure that you read the tables carefully. Your schemas should reflect all entities, relationships, and attributes in the table. Use the relationship types (i.e., cardinality) given (one-to-one, one-to-many, or many-to-many) and figure out minimum cardinality (optional or mandatory) on your own.

You must create the database schemas electronically, and they cannot be hand-drawn. Follow the same process as in ICA1 and use MySQL Workbench to create your diagrams. When you finish creating your database schemas, save them as separate *.mwb files.. for example assignment1-part1a.mwb and assignment1-part1b.mwb.

Part 1, Scenario A: Hotel

Entity	Entity Attributes
Customer	CustomerID, FirstName, LastName, Address, PhoneNumber, EmailAddress
Room	RoomID, RoomType, Floor
Reservation	ReservationID, ReservationDate, CheckinDate, CheckoutDate
Payment	PaymentID, Amount, PaymentDate
HouseKeeper	HousekeeperID, FirstName, LastName, WorkingDays
RateType	RateTypeID, TypeDescription, Rate

Relationships	Relationship Attributes
Customer-Reservation: One to Many	
Room-Reservation: One to Many	
Reservation-Payment: One to One	
Room-Housekeeper: Many to Many	CleaningDate, CleaningTime
Room-RateType: Many to Many	FromDate, ToDate

Part 1, Scenario B: Customer Service Outsourcing Company

Entity	Entity Attributes
Manager	ManagerID, FirstName, LastName, PhoneNumber, Address, SocialSecurity, JobTitle
Department	DepartmentID, DepartmentName, Address
Employee	EmployeeID, FirstName, LastName, PhoneNumber, Address, SocialSecurity
Customer	CustomerID, FirstName, LastName, PhoneNumber, Address
CrowdsourcedFirm	FirmID, FirmName, WebsiteUrl, CorporateExecutive, PhoneNumber, Address

Relationship	Relationship Attributes
Manager-Employee: One to many	
Department-Manager: One to many	
Department-Employee: One to many	
CrowdsourcedFirm-Customer: One to Many	
Employee-Customer: Many to many	Complaint, Solution

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Part 2.

Specify the maximum and minimum cardinality based on the following description of a Local Pet Store database. If either maximum or minimum cardinality is not given, you will have to identify it. Follow the same procedure as in Part 2 of ICA1 (specify only the necessary tables with their primary keys) and use MySQL Workbench to solve this part.

Step 1: Read the Local Pet Store database description.

A local pet store wants to track data of the animals it sells. This involves keeping track of types of animals and the keepers who work at the store. The company also wants to keep track of disease record of each animal.

The database should track animal's age, gender, and weight. (1) **Every animal in the store is part of one type but there can be at least one or multiple animals in each type**. Every type has a unique name, category, and description.

(2) **Animals may be healthy or have one disease or more than one disease**. **There can be a disease that no animal currently has. Also, there can be several animals that have the same disease**. A disease has a unique name and description. The beginning time and the duration of a disease of each animal also need to be recorded.

All keepers have names, employee IDs, ssn, addresses, roles, and phone numbers. A keeper is designated as a type keeper or health keeper, depending on their role. (3) **Although a type keeper takes care of only one type of animals, each type may have at least one or many type keepers**. (4) **A health keeper handles at least one or multiple diseases of animals, but each disease is taken care of by only one health keeper**.

Step 2: Follow the same process as in ICA1 part 2:

(1) Create a new model in MySQL Workbench.
(2) Create a new Diagram.
(3) Create tables for the Animal, Type, Disease, Type-Keeper, and Health-Keeper. Create Primary keys in them (no need to define all the columns of these tables in this part).
(4) Create the following connections and use MySQL Workbench tools to define their *maximum and minimum cardinalities:*
   - Animal - Type
   - Animal - Disease
   - Type - Type Keeper
   - Disease - Health Keeper
(5) Save your diagram as an mwb file... for example: assignment1-part2.mwb.

Turn in your work: Turn in all three files on canvas.