**Assignment #1: Database Schemas**

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| **Submission Instructions**  **Due: Friday, 1/27/2023 at 11:59 pm**   * Submit your solutions as a Word or PDF file through **Canvas>Assignments>To-Do**. * ***If you do not follow the instructions, your assignment will be counted late.*** * Late Assignment policy: Late submissions are not acceptable.   **Evaluation**  Your database schemas will be graded using several factors:   * The correct use of entities, attributes, and relationships given. * Correctly specify 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 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 schema 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 your database schemas electronically, and they cannot be hand-drawn. Use Vertabelo to create your diagrams (<https://www.vertabelo.com/>). It’s free when you sign up with your Temple email. When you finish creating your database schemas, export the schemas as a PNG file which can be placed into a Word document.

**Scenario 1: Hotel**

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| **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 |

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| --- | --- |
| **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 |

**Scenario 2: Customer Service Outsourcing Company**

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| **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 |

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| **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 |

**Part 2. Specify the maximum and minimum cardinality based on the following statement. If either maximum or minimum cardinality is not given, you will have to identify it. Use the power point template the answer this question.**

**Scenario 3: Local Pet Store**

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 name, employee ID, ssn, address, role and phone number. A keeper is designated as a type keeper or health keeper depending on its 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 may handle at least one or multiple diseases of animals, but each disease is taken care of by only one health keeper**.

1) Animal-Type

2) Animal-Disease

3) Type-Type Keeper

4) Disease-Health Keeper