

1 Preliminaries

Before starting on this assignment, read the documents which have been uploaded in the resources section in Piazza.

2 Goal

The goal of this first assignment is to design a database schema. There is only a pass/fail grade for this assignment. You must pass this assignment in order to receive credit for your subsequent lab assignments.

3 Description

The Smith family owns a media empire consisting of *Downtown Video* and *City Books* stores. In order to manage these businesses, the CEO Mrs. Smith wants to design a database for each of the store and she has hired you to do this. You will need to present this information at the company board meeting on July 14th, 2017 at 6pm
[Odd--this coincides with the assignment due date.]

The specifications of each database are as follows:

- *Downtown Video*

- The database must contain the details of each film that the company owns. This includes the title, description, rating and length. Also, each film must have an id that uniquely identifies it.
- Mrs. Smith also wants the details of each customer, specifically his/her first name, last name, email, and their address. He wants to assign a unique identifier for each customer.
- The address details include the street, city, state, postal code and the phone number.
- Note that there can be two customers from the same address. So try to make the life of the data entry people easier by designing the database in such a way that they would not have to enter the same address more than once. That is, they can uniquely identify an address that can be referenced wherever they want.

- *City Books*

- As you would have guessed the database must contain an inventory of all the books in the store. You can identify a book by its title and author. The author details would be only the first and last name.
- As there can be multiple books by an author, you would want to design the database such that the author details should be entered only once and can be referenced wherever required.
- Mrs. Smith also wants the details of each customer, specifically his/her first name, last name and phone number. She wants to assign a unique identifier for each customer as well.

Your task is to design two relational database schema based on the previous specification. This includes:

- Identifying each relation and its attributes that are needed to store the required information.
- Determining the primary key of each relation.

The datatypes of each attribute in each relation are not required for this assignment, although you are free to assume that every attribute has a reasonable datatype.

Example Schema: The following is an example schema for pet store database. There are five tables:

sales, customers, animals, species and breeds. Each table has a primary key.

- sales (sale_id, animal_id, customer_id, price)
Primary key: (sale_id)
- customers (customer_id, first_name, last_name, credit_card_number)
Primary key: (customer_id)
- animals (animal_id, specie_id, breed_id, name, color)
Primary key:(animal_id)
- species (specie_id, common_name, scientific_name)
Primary key: (specie_id)
- breeds (breed_id, name)
Primary key: (breed_id)

Your schemas should be in the above format and should clearly specify the primary key of each table.

4 Submitting

1. Using the format of the example schema above, write the respective schema out in a plain text files named `video.txt` and `books.txt` for *Downtown Video* database schema and *City Books* database schema respectively.
2. The procedure for submitting the text files will be posted on Piazza soon.

