

1 Preliminaries

Before starting on this assignment, read the general information document available in the Lab Assignments section on the Class Resources page on 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 *Smith Video* and *Smith 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 January 22, 2016 at 6pm [Ed: *Odd-this coincides with the assignment due date.*]

The specifications of each database are as follows:

- *Smith Video*
 - The database must contain the details of each movie that the company owns. This includes the name, description, rating, release year 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 id, and address. She wants to assign a unique identifier for each customer.
 - The address details include the house number, 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.
- *Smith 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, author, edition and publisher. 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. You should clearly specify which are the relations for *Smith Video* database schema and which are the relations for *Smith Books* database schema.
- Determining the key constraint of each relation.

For example: Let *Department* be the relation that has department name and the number of employees. Also, let each department have department id that uniquely identifies it. Then the relation will be: *Department(department_id, department_name, number_of_employees)*. The key of this relation is *department_id* attribute.

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.

4 Submitting

1. Write your schema out in a plain text file named `schema.txt`.
2. Copy `schema.txt` to your home directory on `unix.ic.ucsc.edu`.
3. Login to `unix.ic.ucsc.edu`. At the shell prompt, submit your work:

```
> submit cmps180-wt.w16 lab1 schema.txt
```

You can submit more than once. Only your latest submission will be graded.