Assignment: Introduction to Relational Databases

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COM3580: Fall 2020

1 Assignment-Specific Packaging

The general packaging is unchanged from the basic "Homework Requirements" (see slides from first lecture and "Homework Policies for COM 3563" on Piazza).

This assignment's "DIR" **must be named** *Relational1*. Your report **must be named** *$DIR/Relational1.pdf*.

2 Motivation

Many database courses present SQL only after several introductory lectures; experience with an actual RDB is typically delayed even longer. My feeling (confirmed from previous student feedback) is that "the earlier, the better"! Simply put: there is no substitute for interacting with a live RDB, populated with actual data, to provide insight about SQL semantics and how to formulate database queries.

I am therefore assigning a "get started" exercise: you will install an RDB on your laptop, populate it with data, and start to get comfortable with the textbook's *University database schema*.

3 Prerequisites

This course uses POSTGRESQL as the instructional relational database. Here is one pointer to some good POSTGRESQL tutorials. In this assignment, you will get POSTGRESQL running on your laptop & kick the tires.

- PostgreSQL Core Distribution

- macOS packages

- I've been happy with "Postgres.app: The easiest way to get started with PostgreSQL on the Mac"

```
avraham@leff-3:lectures$ psql
Expanded display is used automatically.
Null display is "¤".
psql (11.0)
Type "help" for help.

avraham=# select current_date;
 current_date
--------------
 2018-11-02
(1 row)

avraham=# \q
avraham@leff-3:lectures$ 
```

You don't need "data" to verify that your installation works!

4 Requirements

Begin by cloning the SmallUniversityRDB Github repository.
Perform the following steps:

- Read the `README.md` file ☺

- Read the pdf file that explains the University database schema

- Execute the *smallDDL.sql* script to create the database tables

- Execute the *populateSmallTables.sql* script to populate the database tables

- Verify that your installation has succeeded by duplicating the command-line (CLI) interaction below.

```
avraham@leff-3:assignments$ psql
Expanded display is used automatically.
Null display is "¤".
psql (11.0)
Type "help" for help.

avraham=# select * from course_s;
 course_id |           title            |  dept_name  | credits
-----------+----------------------------+-------------+---------
 BIO-101   | Intro. to Biology          | Biology     |       4
 BIO-301   | Genetics                   | Biology     |       4
 BIO-399   | Computational Biology      | Biology     |       3
 CS-101    | Intro. to Computer Science | Comp. Sci.  |       4
 CS-190    | Game Design                | Comp. Sci.  |       4
 CS-315    | Robotics                   | Comp. Sci.  |       3
 CS-319    | Image Processing           | Comp. Sci.  |       3
 CS-347    | Database System Concepts   | Comp. Sci.  |       3
 EE-181    | Intro. to Digital Systems  | Elec. Eng.  |       3
 FIN-201   | Investment Banking         | Finance     |       3
 HIS-351   | World History              | History     |       3
 MU-199    | Music Video Production      | Music       |       3
 PHY-101   | Physical Principles        | Physics     |       4
(13 rows)
```

You've succeeded? Fantastic: check-in a screen-shot of your database interaction, and take a break ☺