Assignment Two: SQL

Assignment two is to redo assignment one using sql on agora using the Postgresql database system and the psql command interpreter. In particular, you will submit a tar file that contains the following files

- a psql batch file you write that has the DDL for dropping all the tables and has at the top as a comment your names and date. The two characters - - (with no space in between) start a comment in a psql batch file. Remember that the order in which you drop tables has to be consistent with your foreign key constraints.
- a psql batch file you write that has the DDL to create all the tables and has at the top as a comment your names and date. Remember that the order in which you create tables has to be consistent with your foreign key constraints.
- a psql batch file you write that uses the \copy psql command to populate all the tables and has at the top as a comment your names and date. Suppose you want to populate the file named blue from a file that is in the data subdirectory of your assg2 directory, then the \copy command in your batch file is

  \copy blue from ‘data/blue_data.txt’;

  assuming that you running the batch file from while you are in the assg2 directory. Remember that the order in which you populate tables has to be consistent with your foreign key constraints.
- a psql batch file you write that has the DML select statements and \echo statements for your answers to the problems. I have provided a template for your file that has the \echo statements including \echo statements for the expected results with the provided example database instance. The template is called assg2_tester.sql.
- a readme file that includes your author names, the data of submission, a description of what is the assignment files and that you have done, and if any of your answers you do not think is completely correct an identification of the exercise number and a statement about what you think is not working correctly.

Details

- Just below this handout on the course website is a copy of the assg2_tester.sql file that your DML batch file has to be an extension of. In particular, for each query where the assg2_tester.sql file has a

  ```
  \echo 'replace this line (including \echo) with your query'
  ```

  you should replace that line with your query.
- On the course website just below the assg2_tester.sql link is a link to a tar file containing an example database instance that you can use for testing. The database instance is in the format that the psql \copy command expects for doing bulk loading into a table in a relational database. Each line represents one record (tuple) with the fields in the line representing the attributes in the tuple and are separated by a tab character. There are no blank lines in each data file since a blank line causes a syntax error by the \copy command.

  This example database instance is the one that the assg2_tester.sql refers to when saying that the result of a query should be a particular set of values. To extract the tar file the command is

tar xvf nba_db_data.tar

in the directory in which you want the subdirectory containing the data files to appear.

- The domains (that is the data types) of each of the attributes of each of your relations have to be consistent with the example data.
- The height attribute in the player relation needs to be of type integer. The height is in inches.
- The with clause described in Subsection 3.8.6 of our textbook is the way to create the intermediate tables that we often use in relational algebra. I found the with clause useful in my solution to this assignment.

Administrative

Your score on this assignment is based on well your batch files run on agora using postgresql. I will run them as my username and database.

You can work in teams of one or two students. If you are in a team of two both of your names must be listed in the readme file. You can talk with people outside your team about the general concepts involved but they cannot help you and you cannot help them with how to answer the questions. Use handin on agora using the command

handin.453.1 2 assg2.tar

to turn in your assignment. If you are in the directory containing the assg2 directory as a subdirectory, then the command

tar cvf assg2.tar assg2

will create the assg2.tar file in the current directory. The tar file must contain

- the psql batch file for dropping all your tables
- the psql batch file create all your tables
- the psql batch file for populating all your tables
- the psql batch file for the select statements for your queries
- your readme file

The assignment is due at 5 pm on Friday, the 3rd of March. No late assignments will be accepted.