

Recitation 4: Practicing SQL

15-415

Part I: Using PostgreSQL

1. SSH to your VM on our servers using the username and hostname as follows:

```
<aid>@<aid>-db.qatar.cmu.local
```

where *aid* is your Andrew ID. Enter your password provided.

2. You can either run a PostgreSQL Client from the command-line or use a web-based PostgreSQL Client such as *TurnKey* (<https://<aid>@<aid>-db.qatar.cmu.local>) and *Shell In A Box* (<https://<aid>-db.qatar.cmu.local:12320>).

We will continue the instructions on how to create and manipulate databases from the command-line (therefore, either SSH via PuTTY or use *Shell In A Box* shown above).

3. Create a new empty database *Recitation 3*:

```
createdb -U postgres -h <aid>-db.qatar.cmu.local Recitation3 ;
```

4. Connect to the database *Recitation 3*:

```
psql -U postgres -h <aid>-db.qatar.cmu.local Recitation3 ;
```

5. Under the database, create four tables namely: *Student*, *Faculty*, *Class*, and *Enrolled*. You can either enter the SQL CREATE statements via the command-line or put them all in a file (aka a SQL script). For convenience, we have provided you with the file containing the SQL CREATE statements under `/home/shared/Ex5.1/CreateTableScript-Ex5.1.txt`. You can either copy each CREATE statement to the command prompt and hit enter or instruct Postgres to read all the CREATE statements from the file:

```
\i '/home/shared/Ex5.1/CreateTableScript-Ex5.1.txt';
```

6. To check that the tables were created, use phpPgAdmin or type the command:

```
\dt;
```

7. Populate the tables by inserting tuples. Again, you may enter your SQL INSERT statements via the command-line. However, we shall show you how to import existing

data into the tables. Under '/home/shared/Ex5.1', there are four CSV (Comma Separated Values) files namely: *student.csv*, *faculty.csv*, *class.csv*, and *enrolled.csv*, each of which should be imported into the respective table. To do so, use the *copy* command as exemplified below:

```
copy <table_name> from '<filename>' with CSV  
copy student from '/home/shared/Ex5.1/Student.csv' with CSV;  
copy faculty from '/home/shared/Ex5.1/Faculty.csv' with CSV;  
copy class from '/home/shared/Ex5.1/Class.csv' with CSV;  
copy enrolled from '/home/shared/Ex5.1/Enrolled.csv' with CSV;
```

8. Write your first query ever!

```
SELECT * FROM student;
```

9. You can close the connection to the database:

```
\q;
```


4. Find the *super hero* student(s) i.e. the one(s) enrolled in the maximum number of classes. Print the student(s) name(s).

5. Find the faculty members that have taught classes only in room R128. Print the faculty's name and the total number of classes she or he has taught.