CS 166: PostgreSQL Quick Start Guide

1. Log in to the assigned lab computer with your CS account.

2. Setup your PostgreSQL environment

    (a) Create a folder under /tmp as the environment of your *test* database:

    ```
    $ mkdir /tmp/$LOGNAME
    $ mkdir /tmp/$LOGNAME/test
    ```

    (b) Create a data and socket folder under your environment, which will contain Postgre data files and socket information:

    ```
    $ cd /tmp/$LOGNAME
    $ mkdir test/data
    $ mkdir test/sockets
    $ export PGDATA=/tmp/$LOGNAME/test/data
    $ export PGSOCKETS=/tmp/$LOGNAME/test/sockets
    ```

    (c) Initialize the database environment:

    ```
    $ initdb
    ```

3. Start the PostgreSQL database server

    ```
    $ pg_ctl -o "-c unix_socket_directories=$PGSOCKETS" -D
        $PGDATA -l /tmp/$LOGNAME/logfile start
    ```

4. Create your database (Replace $DB_NAME with your database name)

    ```
    $ createdb -h $PGSOCKETS $DB_NAME
    ```

5. Start the interactive environment

    ```
    $ psql -h $PGSOCKETS $DB_NAME
    ```

The Postgre prompt like "mydb=#" will show up to accept your SQL commands, where "mydb" is the database name you specified in $DB_NAME. Use "\q" to quit the interactive environment. You can also pipeline a SQL script into the interactive environment to execute it in bulk:

```
$ psql -h $PGSOCKETS $DB_NAME < your_script.sql
```

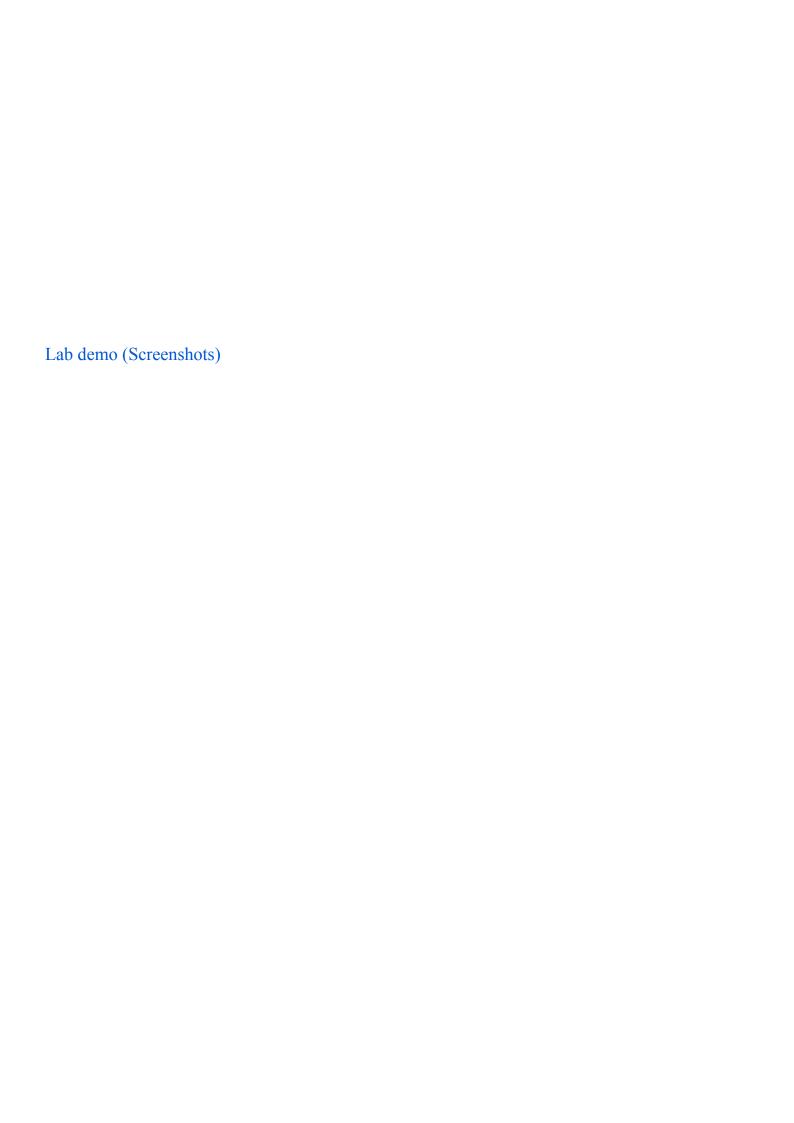6. SQL Administrator Cook List Show all databases in your Postgre instance:

```
mydb=# SELECT datname FROM pg_database;
```

Show all tables viewable to you:

```
mydb=# SELECT table_name
mydb-# FROM information_schema.tables
mydb-# WHERE table_schema ='public';
```

7. Stop the database instance

```
$ pg_ctl -o "-c unix_socket_directories=$PGSOCKETS" -D
    $PGDATA -l /tmp/$LOGNAME/logfile stop
```

Lab demo (Screenshots)

```
[eyim009@class-036 eyim009]$ export PGDATA=/tmp/$LOGNAME/test/data
[eyim009@class-036 eyim009]$ export PGSOCKETS=/tmp/$LOGNAME/test/sockets
[eyim009@class-036 eyim009]$ initdb
The files belonging to this database system will be owned by user "eyim009".
This user must also own the server process.

The database cluster will be initialized with locale "en_US.UTF-8".
The default database encoding has accordingly been set to "UTF8".
The default text search configuration will be set to "english".

Data page checksums are disabled.

fixing permissions on existing directory /tmp/eyim009/test/data ... ok
```

```
[eyim009@class-036 eyim009]$ pg_ctl -o "-c unix_socket_directories=$PGSOCKETS" -D $PGDATA -l /tmp/$LOGN
AME/logfile start                                                                                   ]
waiting for server to start.... done
server started
[eyim009@class-036 eyim009]$ createdb -h $PGSOCKETS test_db
[eyim009@class-036 eyim009]$ psql -h $PGSOCKETS test_db                                              ]
psql (10.23)                                                                                         ]
Type "help" for help.
```

```
            ^
test_db=# CREATE TABLE Students(ID INTEGER, Name TEXT);
CREATE TABLE
test_db=# \dt
          List of relations
 Schema |   Name   | Type  |  Owner
--------+----------+-------+---------
 public | students | table | eyim009
(1 row)

test_db=# INSERT INTO Students VALUES(101, "John");
ERROR:  column "John" does not exist
LINE 1: INSERT INTO Students VALUES(101, "John");
                                         ^
test_db=# INSERT INTO Students VALUES(101, 'John');
INSERT 0 1
test_db=# INSERT INTO Students VALUES(102, 'Mary');
INSERT 0 1
test_db=# SELECT * FROM Students
test_db-#
```

```
test_db=# SELECT * FROM Students;                                                    ]
 id  | name
-----+------
 101 | John
 102 | Mary
(2 rows)

test_db=# \q                                                                         ]
[eyim009@class-036 eyim009]$ pg_ctl -o "-c unix_socket_directories=$PGSOCKETS" -D $PGDATA -l /tmp/$LOGN]
AME/logfile stop
waiting for server to shut down.... done
server stopped
[eyim009@class-036 eyim009]$ █
```