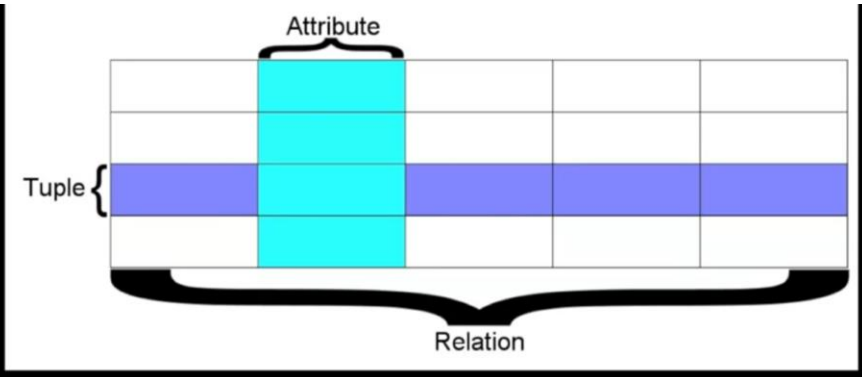
Terminology

- Database - contains one or more tables
- Relation (or table) - contains tuples and attributes
- Tuple (or row) - a set of fields which generally represent an "object" like a person or a music track
- Attribute (also column or field) - one of possibly many elements of data corresponding to the object represented by the row



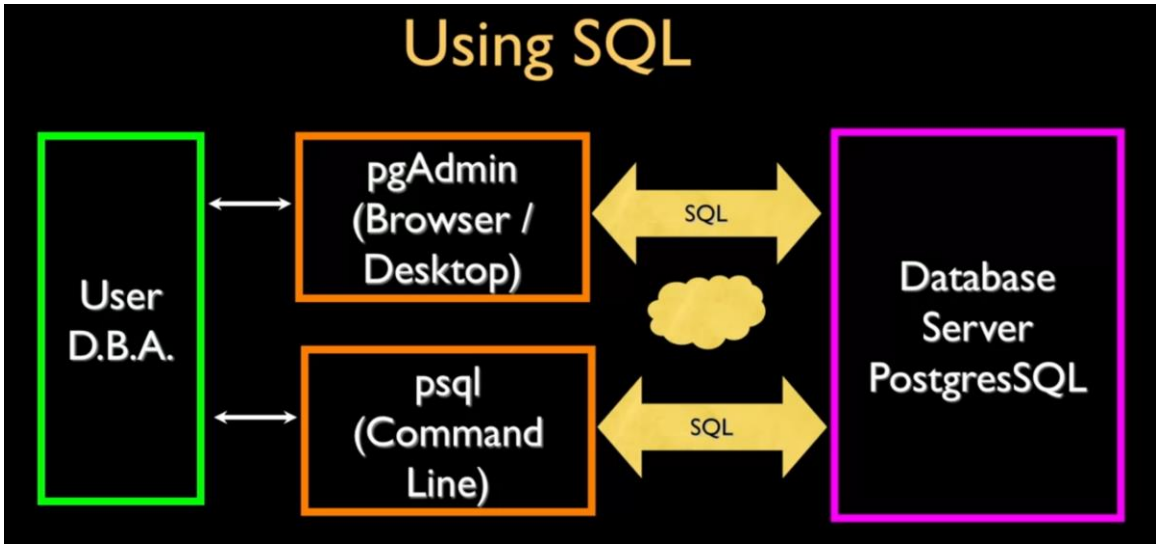
A relation is defined as a set of tuples that have the same attributes. A tuple usually represents an object and information about that object. Objects are typically physical objects or concepts. A relation is usually described as a table, which is organized into rows and columns. All the data referenced by an attribute are in the same domain and conform to the same constraints. (wikipedia)

SQL Structure

The Client part: pdAdmin(Browser / Desktop), psql(Command Line)

The Server part: PostgreSQL Database Server

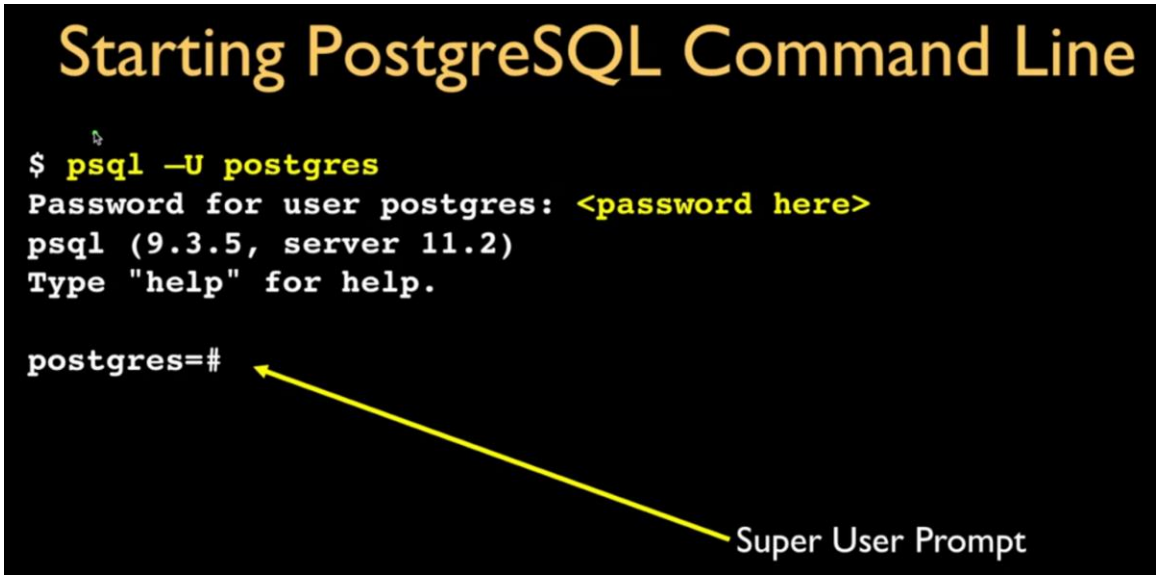
The most common way is, we write command in psql, and pass the command to the server, serve complete the magic computation and return us the result.



Access PostgreSQL using Command line

When you first time set the PostgreSQL environment, it asks you to set a super user.

The pound sign "#" indicates you're in the superuser model



List existing Database

List all existing database using "\l" command, short for "list"'

And notice that please do not delete the default three databases, which are using by PostgreSQL server. It may cause the whole environment crash if you delete them.

```
postgres-# \l
                                  List of databases
   Name    |  Owner   | Encoding | Collate | Ctype |   Access privileges
-----------+----------+----------+---------+-------+-----------------------
 postgres  | postgres | UTF8     | C       | C     |
 template0 | postgres | UTF8     | C       | C     | =c/postgres          +
           |          |          |         |       | postgres=CTc/postgres
 template1 | postgres | UTF8     | C       | C     | =c/postgres          +
           |          |          |         |       | postgres=CTc/postgres
(3 rows)

postgres-#
```

Create user and database

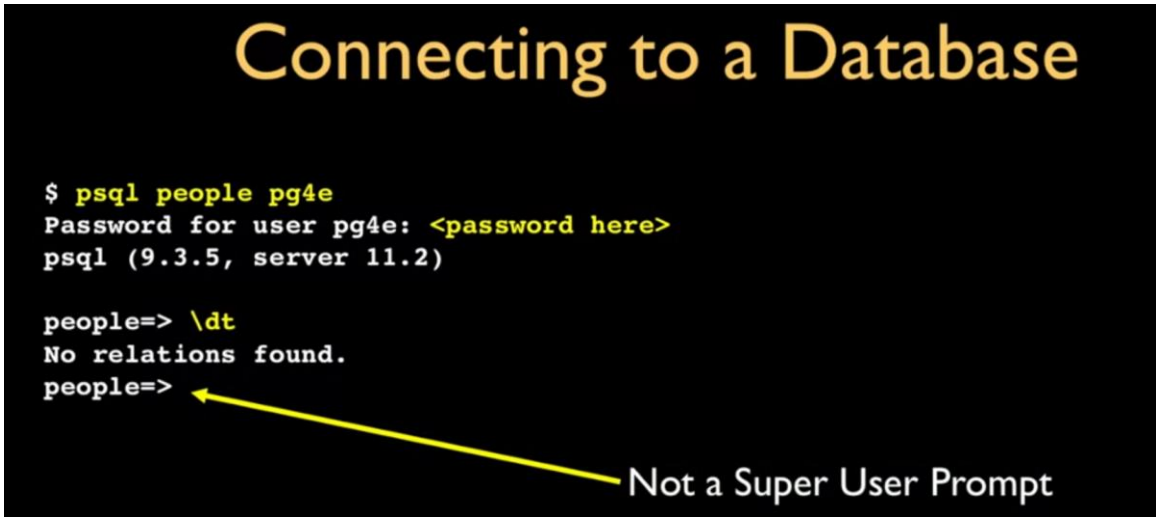
The command in PostgreSQL is not required to be upper case. But it is a convention for writing SQL, for just get used to it.

"\q" means quit this session[quit from superuser mode]

Connecting to a Database

Psql[connect to the server] people[name the database] pg4e[name the user]

"\dt" shows the relations (table) in the database



Creating a Table

Every line (command line) for PostgreSQL must less than 128bits. So here, we have to write this command into 4 lines. End the command with the semicolon.

"\d+" means: show the schema (data structure of the table).