Introducing Postgresql

CS3120 Data Base Management Systems Laboratory (January 2022)

Installation

- We are covering only the installation for Debian distros. So if you are having ubuntu or any similar debian distros follow the steps.
- Usually Debian includes PostgreSQL by default. In that case all you have to do is use apt-get to install the package.
  - sudo apt-get install -y postgresql
- Else you might have to add the repo

Adding the repo

- Create the file repository configuration:
  - sudo sh -c 'echo "deb http://apt.postgresql.org/pub/repos/apt $(lsb_release -cs)-pgdg main" > /etc/apt/sources.list.d/pgdg.list
- Import the repository signing key:
  - wget --quiet -O - https://www.postgresql.org/media/keys/ACCC4CF8.asc | sudo apt-key add -
- Update the package lists:
  - sudo apt-get update
- Install the latest version of PostgreSQL. If you want a specific version, use 'postgresql-#version'
  - sudo apt-get -y install postgresql

The steps for installation are available on the official website https://www.postgresql.org/download. Just follow the instructions if you are using any other operating system.

PSQL

PSQL is a terminal-based front-end to PostgreSQL. It enables you to type in queries interactively, issue them to PostgreSQL, and see the query results.

Starting PSQL

- To start psql you can just simply type psql in your terminal. But this won't work by default because the default user for postgresql is 'postgres'.
- So you will have to run psql as the default superuser postgres.
  - sudo -u postgres psql

Setting a password for default user / Adding a new user

- Use the following command to set a new password for default user if you want.
    - ALTER USER postgres PASSWORD 'newpassword';
- To use psql without changing the user every time you can create a superuser with your system default username and password.
    - CREATE USER uname WITH SUPERUSER ENCRYPTED PASSWORD 'yourpwd'';
- You can use the psql command \du to list the users.
- Now you can quit psql using \q command and check if it can be run from terminal just by typing psql.

Creating a database

- To create a Database you can use the following command.
  - CREATE DATABASE cs3120;
- To list all the databases use the command '\l'
- Now to connect to the database you just created use the '\c' psql command followed by database name.
  - \c cs3120

Creating a simple table

- Once connected to your database you can try to create a sample table with the following command
  - CREATE TABLE students (id int,name varchar(30));
- Varchar and int being the datatypes it will be covered later in detail in the syllabus so dont worry about them now.
- To view all the table you can use the command '\dt'
- To view the structure of a specific table you can use the command '\d' followed by table name.
  - \d students

Inserting values into table

- Now that we have created a table we can insert values into table by using the INSERT command
    - INSERT INTO students VALUES (1,'student1');
- You can also use the same command by specifying the column names as well if you want to insert only some values or if you want more specific formatting of the insert query which will be later covered in detail
    - Eg : INSERT INTO students (id,name) VALUES (1,'lijo');

View the contents of a table

- To view the contents of a table you can use SELECT command
  - Eg: SELECT * FROM students
- The above mentioned command will list every entry from student table.
- The SELECT query can also be formatted in may ways which you will see later in the course.

Thank you

We hope you were all able to follow the installation demo and got a very basic understanding on how to setup postgreql in your PC. Happy learning.