Accessing PostgreSQL database server

Concept of DBMS Server and Clients

DBMS system is a server.

This means it receives “queries” (data manipulation requests in the form of a query expression) from various “users”. Executes the query most optimally and returns the result to the “users”.

It is important to note that a user needs to have some software that allows you

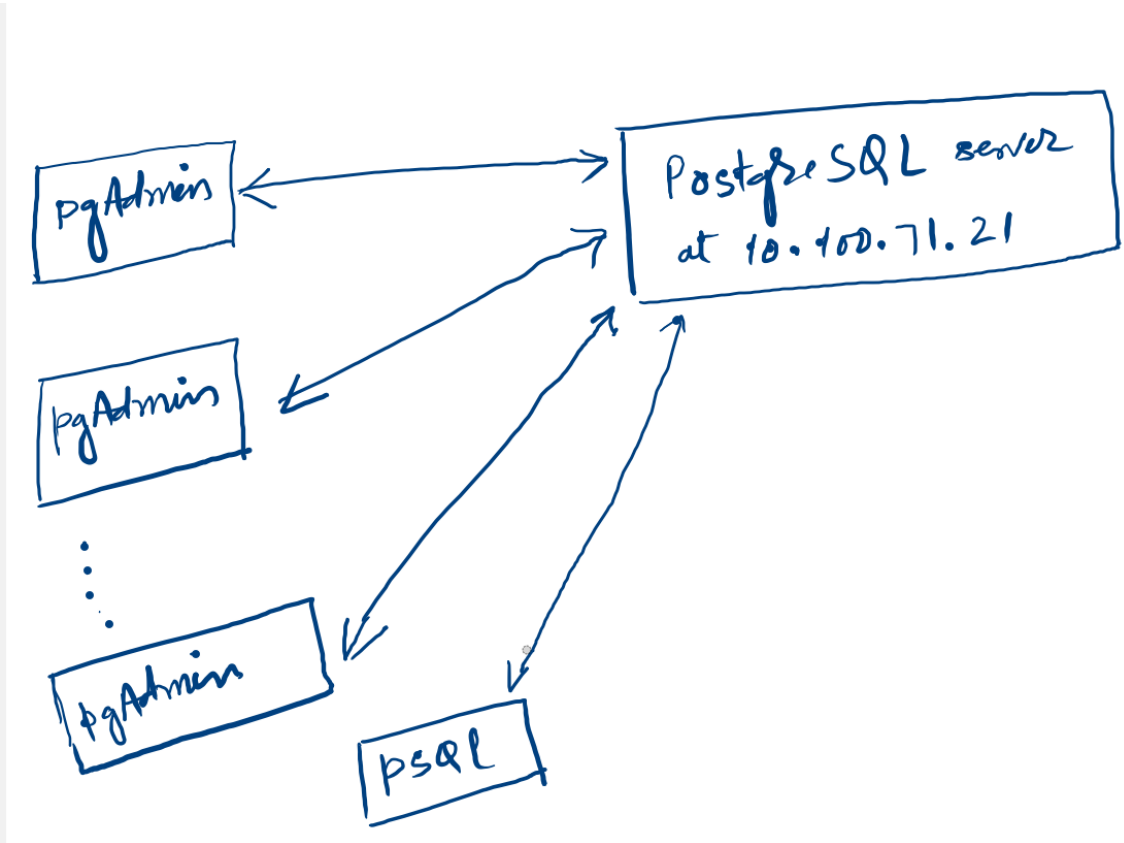
1. Typing in the “query” and submitting it to the server (normally remote server),
2. Collecting responses from the server
3. Displaying the result to the user

This piece of software is called the “database access client”.

The basic client software that comes with the PostgreSQL server is “PSQL”. “It is a console-based”. PgAdmin is a popular GUI client for PostgreSQL. There are also other popular GUI clients: dbForge, dbWeaver, and so on.

In this course, we will be using pgAdmin 4. You should find pgAdmin 4 installed on your lab PCs. However, if you want to access PostgreSQL server from your computer, you require installing it on it.

Here is a depiction of the Server setup that we plan to use in this course.



Installing pgAdmin 4

You can download it from https://www.postgresql.org/ftp/pgadmin/pgadmin4/ or https://www.pgadmin.org/download/ or so

Execute the downloaded install program of pgAdmin4. Installation should be straightforward. It does not ask for any input.

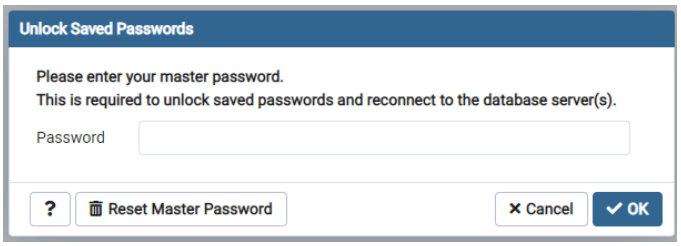
Once you installed PgAdmin4, you need to add a database server to it. You can follow the steps given below for this purpose:

Add Server to your pgAdmin 4 installation

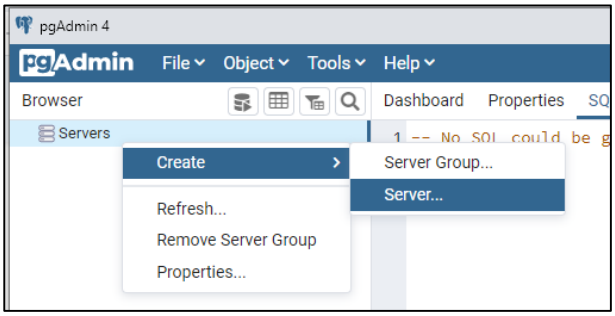
Following follow steps

1. Start pgAdmin4

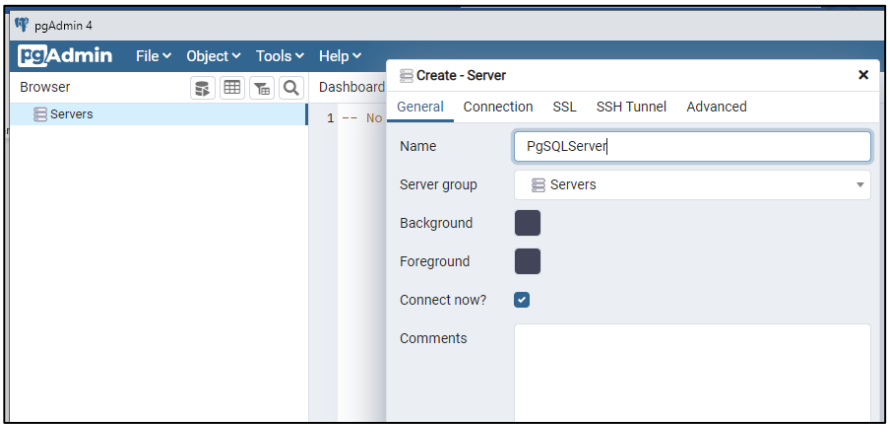
2. On start, it may ask to set a master password. The screen shows up as follows. Enter any password that you would want to have.



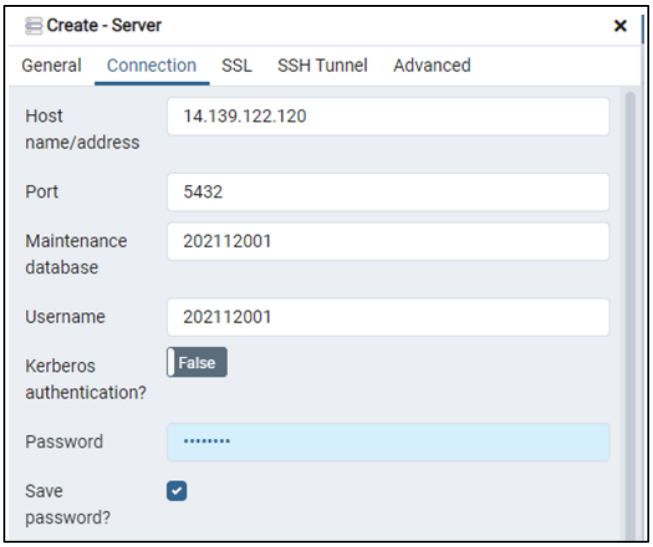
3. Click on Servers → Create →Server, as shown below



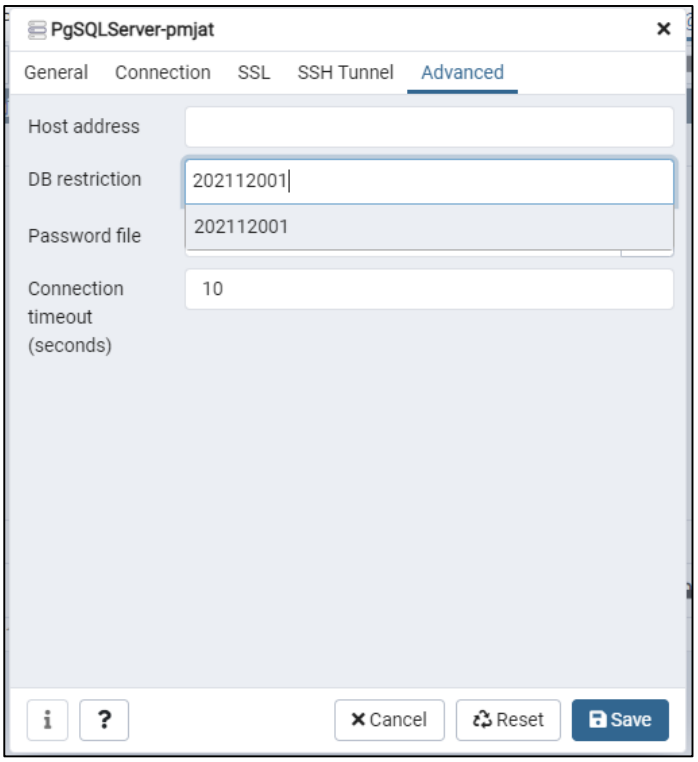
4. You should see following screen. Select “General Tab” (should be there by default); give name to your server, say “PgSQLServer”.



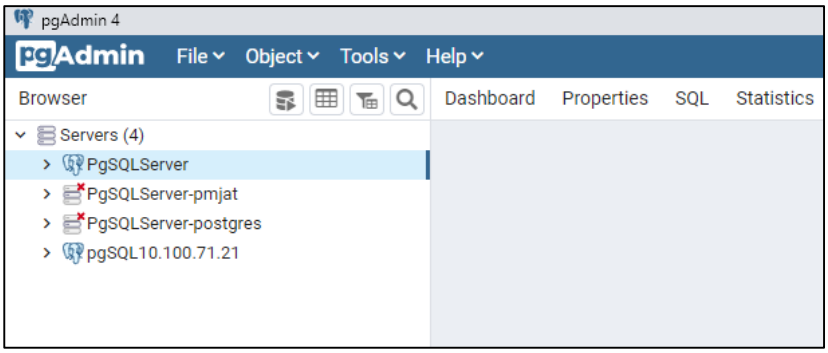
5. Switch to “Connection Tab”, and enter following inputs
   Host: 10.100.71.21
   Port 5432
   Maintenance DB: Your Institute ID
   User Name: Your Institute ID
   Password: Your Institute ID



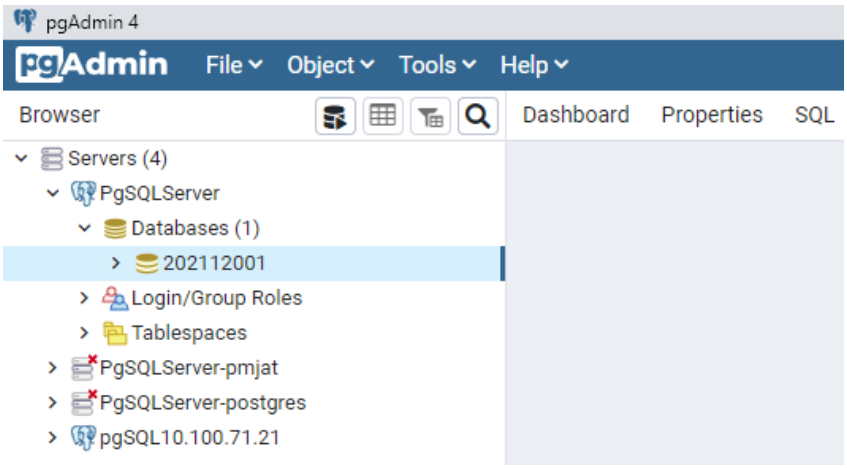
6. Switch to Advanced tab and add DB Restriction. Type in you ID here. This is final input. Click on Save.



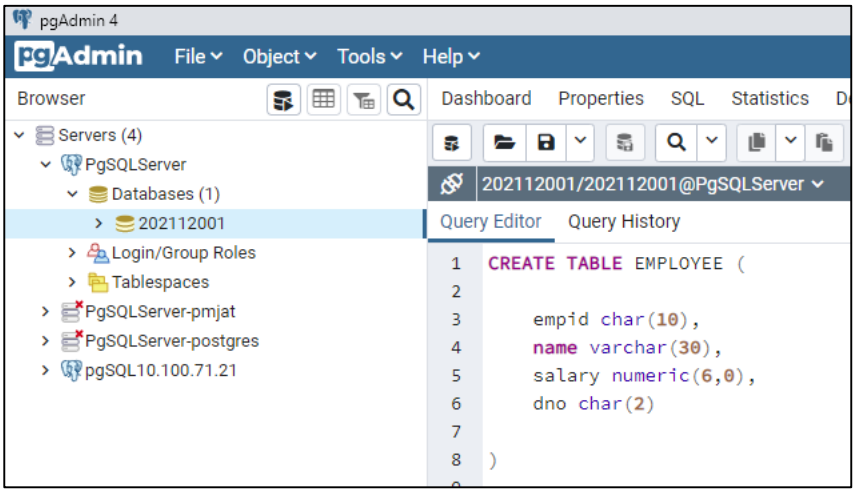
7. You should see name of newly added server `PgSQLServer` appears in left pan of your window. By double clicking on this server-name you connect to the remote server. Screen Snapshot shown below is what typically your screen should look like. Here you see more number of servers because I have multiple servers setup on my computer. In your case it should have only one name.



8. By expanding to your server link. You see database named with your ID. Every student gets to work on databases named with their IDs.



You are done with setting up of your work bench for most of labs of this course. By Choosing Tools → Query Too; you should get SQL window. Where you can type in and Run SQL statements. You can test for correct setup by executing the `CREATE TABLE` command shown here.



Before proceeding; you should also be changing password of your database account. You can do this by executing following ALTER USER command in SQL window. Replace strings in red with your credentials.

```
ALTER USER "202001xxx" WITH PASSWORD 'mynewpassword';
```

Next Activity: **Lab01**