Introduction to PostgreSql

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Intro

- A relational database management system
- Pronounsed "POST-gress" – the QL is silent
- Open-source database
- In active development for over 20 years
- Owned by a foundation, not a single company (Open Source Initiative - OSI)

# University PostgreSQL Server

Info:

- University PostgreSQL server at the address: sci-didattica.unitn.it

- Username: db_NNN Password: pass_NNN where NNN is a number from 001 to 500

Local:

- The server can be reached from local network inside the structures of the University of Trento: unitn, unitn-x, local eduroam, wired through the use of a special VPN

Remote:

- Remote access with VPN configuration guide is available at the address: https://wiki.unitn.it/pub:conf-vpn-paloalto-en . Please follow the steps on the link

- The appropriate GlobalProtect client must be downloaded and installed from the GUI, start the client and connect using the portal address: vpn.icts.unitn.it and log in using your UniTn credentials

- Connect to the address using a graphical user interface to vpn.icts.unitn.it OR use the following command. Please note that if you use the command prompt, you should have globalProtect to your environment variables otherwise arise a "command not found" error. for the windows operating system, it is recommended to use the UI otherwise, follow this link to add this command to your windows os (Connect to GlobalProtect VPN from cmd.exe in Windows 10)

- From the command line use the command: globalprotect connect –portal vpn.icts.unitn.it –username user.name@unitn.it

- When finished, disconnect with: globalprotect disconnect

- Remember to log out when finished

GlobalProtect ☰

Connected
Your connection has been secured

Disconnect

Setup
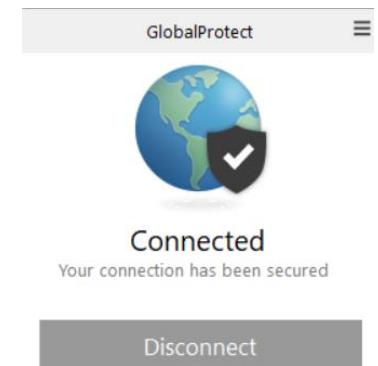
- Download: https://www.postgresql.org/
- Environment variable: add "C:\Program Files\PostgreSQL\14\bin"
- Connect to db using command line:
    - psql -h server -U user database (for general)
    - psql -h sci-didattica.unitn.it -U db_001 db_001 (for uni db)
    - asks password: pass_001

- show all the tables in a db:
    - \dt
- change password at the first login: (note to single qoute)
    - ALTER USER "db_001" WITH PASSWORD 'pass_002'

Creation

```
CREATE TABLE films(
    id integer PRIMARY KEY,
    title varchar(40) NOT NULL,
    year_prod date,
    kind varchar(20),
    len interval hour to minute
);


CREATE TABLE genres(
    id integer PRIMARY KEY,
    title varchar(40) NOT NULL
);
```

Insert and Update

INSERT INTO films (id, title, kind, year_prod) VALUES (1, 'The Matrix', 'Sci-fi/Action', '1999-01-13');

#note to the different order

note to not capital values

note to the date format YYY-DD-MM

UPDATE films SET kind='action' WHERE id = 1;

SELECT * FROM films;

SELECT COUNT(*) FROM films;

Delete and Drop

delete records

DELETE FROM films WHERE id =1;

delete table

CREATE TABLE test(

);

#note: it is not case sensitive (test vs Test)

DROP TABLE Test;

PgAdmin User Interface

- Insert Server:
  - left click on Servers, click on register and then create a server (for example unitnDB001)

- See the tables:
  - unitnDB001/Databases/db_001/Schemas/Public/Tables/movies

- View or edit data:
  - right click on table/ "View/edit data"

Constraints

- properties/ add genreFK/ click on edit icon/ insert data and make constraint violation error intentionally to understand the concept of constraints