PostgreSQL

Class	05_dashboard
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Materials	
Reviewed	☐
Type	

PostgreSQL 🐘

1) Goal

Todays goal is to create your own PostgreSQL database

2) Introduction

2.1) What is PostgreSQL?

- PostgreSQL is a piece of software that allows you to create and work with relational databases 👷‍♀️
- This kind of software is called Relational Database Management System (RDBMS)
- It is open source 🔓

2.2) What is a relational database?

- database: organized collection of data on a computer 🔳
- It is a database based on the relational model (basically means that all data is stored in different tables!)
- It can be maintained and queried by SQL (structured query language)

2.3) Why do we want to work with a database if we have csv and pandas?

- Can store a lot more data than pandas can operate on 🐼
- Persistent storage 📀
- Databases allow us to handle versioning and access control 🚪
- Simplify collaboration 🪰
- Performance of reading and writing from text files is really bad 🐢

2.4) How can we work with it?

- We need a client to connect to the database
  - psql: Postgres shell that allows you to interact with the database server via the command line
  - pgadmin/Postico: GUIs to interact with the database server
  - python + SQLAlchemy
- We need to specifiy host (machine on which the program is running), port (postgres default: 5432), database, username, password

2.5) Let's get started! 🔫

- To connect via psql write psql -h localhos -p 5432 -U postgres -d postgres
- To see all available databases on the database server we can type `\l`
- To create a new database from whithin psql, we write `CREATE DATABASE <name_of_database>;` (alternatively write `createdb <name_of_database>` in your terminal, not psql!)
- The use of uppercase letters for sql commands is not mandatory but a convention. The use of the ; is mandatory.
- To switch the database within your PostgreSQL server use `\c <name_of_database>`
- To list all tables in the current database, write `\dt`