Software Installation

On a Personal Laptop

Stack of Software

Postgresql
 PgAdmin
 SQLite : <u>https://sqlitestudio.pl/</u>
 Git Bash
 Git
 QGIS

Before Starting the Download

- Save your passwords and usernames and make sure you can find them if needed <u>any time anywhere.</u>
- You will be asked multiple times for creating a password.
- It is wise to choose the same password for all <u>PostgreSQL related programs.</u>

💑 Setup	12-14	×
Password		
Please provide a password for the database superuser (postgres). Password Retype password		

You can download:

- → PgAdmin
- → PostgreSQL
 - But by installing PostgreSQL you will automatically get the PgAdmin as well.

- 1. Go to https://www.postgresql.org/download/
- 2. Choose the platform (Windows, macOS or Linux)
- 3. Click the link Download the installer in the first paragraph
- 4. Choose the latest version for your system
- 5. Download the installer for your system version
- 6. Allow the file to access your computer if prompted
- 7. Choose the directory where you want to install
 - a. It is recommended to stick to the path suggested by the installer
- 8. Keep all the suggested components and click next
- 9. Accept the Data Directory

9. Check the summary and make sure you have enough space in the chosen directory

Pre Installation Summary		
The following settings will be used for the installat	ion::	
Server Installation Directory: C:\Program Files/F Data Directory: C:\Program Files/F Database Port: 5433 Database Superuser: postgres Operating System Account: NT AUTHORITY\Ne Database Service: postgresql-x64-15 Command Line Tools Installation Directory: C:\P DatAbdind Linstallation Directory: C:\Program Files/F	ostgreSQL\15 S\data stworkService Program Files\PostgreSQL\15	
Stack Builder Installation Directory: C:\Program Installation Log: C:\Users\milad\AppData\Local\	es:/PostgreSQL115/pgAdmin 4 Files\PostgreSQL15 Temp\install-postgresql.log	~

10.Start the installation (it will take a few minutes)11.Activate Stack Builder checkbox and continue installation12.Choose the PostgreSQL 15 and click Next

When getting to the **Stack Builder**

→ Remember that for now you only need to activate PostGIS 3.x Bundle for PostgreSQL under Spatial Extensions

😂 Stack Builder 4.2.1	×	Stack Builder 4.2.1	1
	Welcome to Stack Builder! This wizard will help you install additional software to complement your PostgreSQL or EnterpriseDB Postgres Plus installation. To begin, please select the installation you are installing software for from the list below. Your computer must be connected to the Internet before proceeding. PostgreSQL 15 (x64) on port 5433 ~	Please select the applications you would like to install. Categories Add-ons, tools and utilities Database Drivers Database Server Registration-required and trial products Spatial Extensions PostGIS 3.3 Bundle for PostgreSQL 15 (64 bit) v3 Web Development PostGIS 3.3.2 bundle includes PostGIS 3.3.2 w GDAL 3.4.3 (SQLit OpenJPEG 2.4.0, Expat 2.4.8, FreeXL 1.0.6), GEOS 3.11.1, Proj 7.2 mBouting 3.4.2 osm2ngrouting 2.3.8 out fdw 11.3 spatial for	3.2 e 3.30.1, 2.1, reign data
	< Back Next > Cancel	< Back Next >	Cancel

13.Do not skip installation and click Next



14. Allow the creation of a spatial database15. Choose a password and click Next (same you chose before)16. Tell yes to all the suggested addition (next slide)17. Finish the installation

	Choose which features of PostGIS x64 15 you want to install.	3 Bundle 3.3.2 for PostgreSQ
Check the components you install. Click Next to continue	want to install and uncheck the cor e.	nponents you don't want to
Select components to instal	: PostGIS Create spatial database	Description Position your mouse over a component to see its description.
Space required: 199.3 MB		

Database Cor	nection Information		
User Name:	postgres	 	
Password:	•••••		
Port:	5433		



Let's Start with PgAdmin 4

- 1. Search for PgAdmin in your search bar and open the software
- 2. If your password is not accepted then reset the password
- 3. You should be able to see PostgreSQL 15 under the Servers in the left panel
- 4. That server contains two databases (next slide)
 - i. One is the default postgres database
 - ii. The other one is the database we created while installing PostgreSQL
- 5. If one of the servers has a red cross on it it means that it is not connected
 - i. You can click on it to have access
 - ii. Sometimes you are required to provide the password
- 6 Drop the menu of postgis_33_sample
 - i. This is a spatially enabled database
 - ii. You can check whether a database is spatially enabled by checking the Extensions menu of a database
 - iii. If a database is spatially enabled it means that it has at least one extension called postgis

R PostgreSOL 15	Server session	s				Total 📕 Active 📕 Idle	Transactions per seco	nd		Transa	ctions 📕 Commits
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> 🥌 postgres	3						2			na par pan ng Milinga	
A Login/Group Roles	2								$ \Lambda \Lambda $	$\land \land \land \land \land \land \land \land$	$\Lambda \Lambda \Lambda \Lambda$
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What is PgAdmin?

- The leading Open Source management tool for **PostgreSQL**
- A powerful graphical interface that simplifies the creation, maintenance and use of database objects.
- Written in Python, JavaScript, Flask, JQuery...etc.
- <u>https://github.com/pgadmin-org/pgadmin4</u>

What if I do not (want to) use PgAdmin?

You can use the Psql command line as well!

All Apps Documents Web	More 🔻	2155 🐨 M 🔗 …
Best match	^	
SQL Shell (psql) App		
Apps		SQL Shell (psgl)
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Search the web		
𝒫 ps - See web results	>	📑 Open
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Check...

- → Extensions
- → Schemas
- → Functions



SQL Shell (psql)

postgres=#

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Check the version of PostgreSQL in two different platforms

SELECT version();

Comment in PostgreSQI and SQL



How to check for the version of PostgreSQL on your machine! (SQL shell)

- Hit enter 3 times until you are asked for the Username then enter your username
- 2. Enter password
- Use SELECT version(); to find the version of psql
- 4. Notice the fact that here I am checking the version of psql installed on my machine and not the one coming from Docker!

SQL Shell (psql)
Server [localhost]:
Database [postgres]: Dont [5422].
Username [postgres]: postgres
Password for user postgres:
psql (10.7)
WARNING: Console code page (437) differs from Windows code page (1252) 8-bit characters might not work correctly. See psql reference page "Notes for Windows users" for details.
Type "help" for help.
postgres=# SELECT version();
version
PostgreSQL 10.7, compiled by Visual C++ build 1800, 32-bit (1 row)
postgres=#

Which of the following tools do you use most often to connect to PostgreSQL for queries and administration tasks?



How to install PostGIS in PostgreSQL!

• This can happen if you skipped the addition of PostGIS while installing PostgreSQL

- Drop down one of the available databases (Postgres)
- Find Extension tab
- Right click the Extension tab \rightarrow Create \rightarrow Extension \rightarrow SQL
- Type CREATE EXTENSION postgis
- Check if the extension is added to the extensions tab

Let's learn how to connect to a database by QGIS

QGIS

- 1. Open QGIS
- 2. Start an empty project
- 3. Open Data Source Manager (upper left corner)
- 4. Click PostgreSQL icon
- 5. Click New
- 6. Assign any name you wish but avoid first capitalized letter
- 7. Type localhost for the Host
- 8. Set the port to 5432 if you want to try to connect to postgres or postgis_33_sample
- 9. Check the name of the database
- 10. Leave SSL as it is

11. Click **Basic** under Authentication and insert credentials for chosen database

12. Hit Test Connection



QGIS continued...

14. Click ok and make sure that the chosen database is appearing on the menu

- **15.** Choose the database from the menu
- **16.** Insert credentials one more time and hit ok
- **17.** If your database has no content it is OK!
- **18.** Check also list tables with no geometry
- 19. Check the drop down menu for schemas (if you have any)
- 20. You successfully imported a series of geometries from your Database to QGIS (if you have any)
- 21. You can double click any of the components to add it to the Layers in QGIS
- 22. If nothing is showing up it is because the tables are empty for now or there is no geometry registered. We will learn about the geometry soon.