

WEEK 02

Instructor: Yanan Wu

TA: Vanchy Li

Spring 2025



WEEK 02

LECTURE SESSION

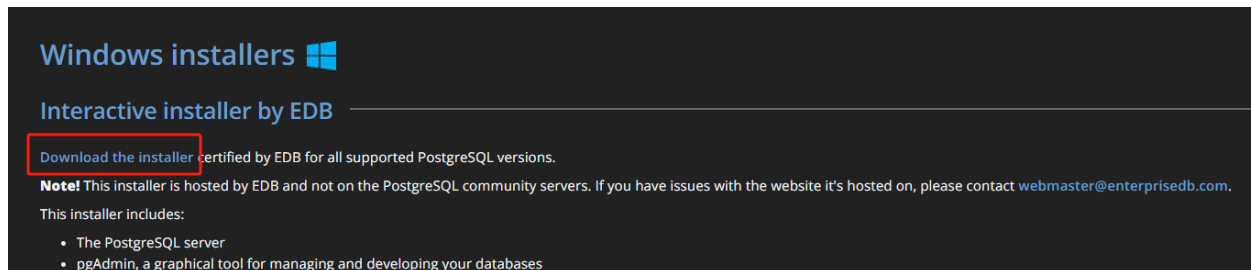
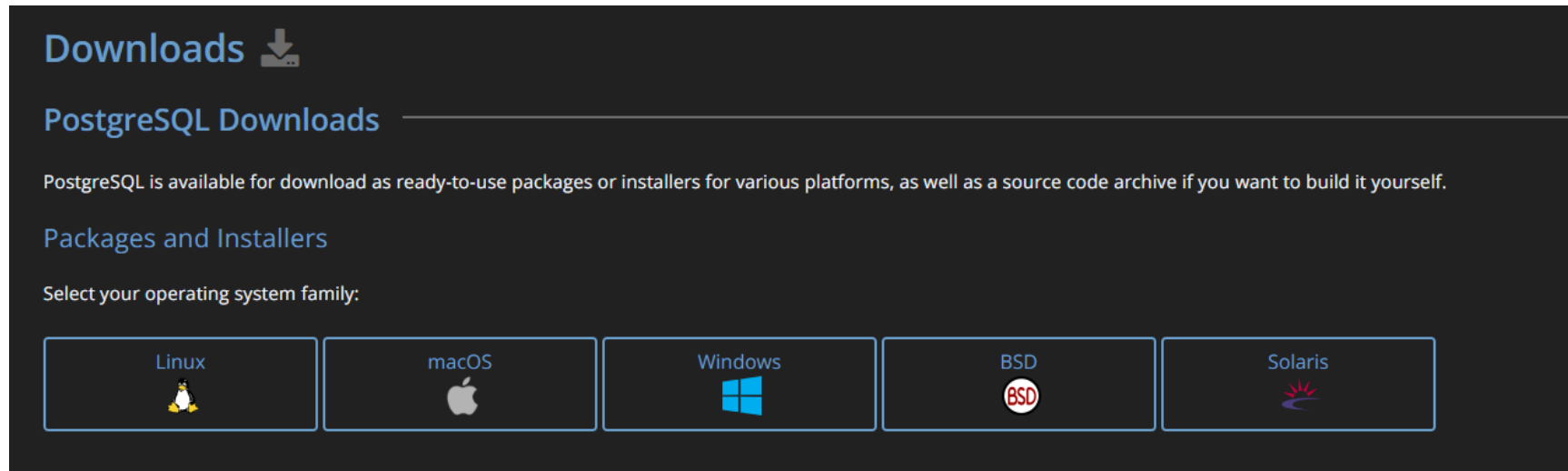
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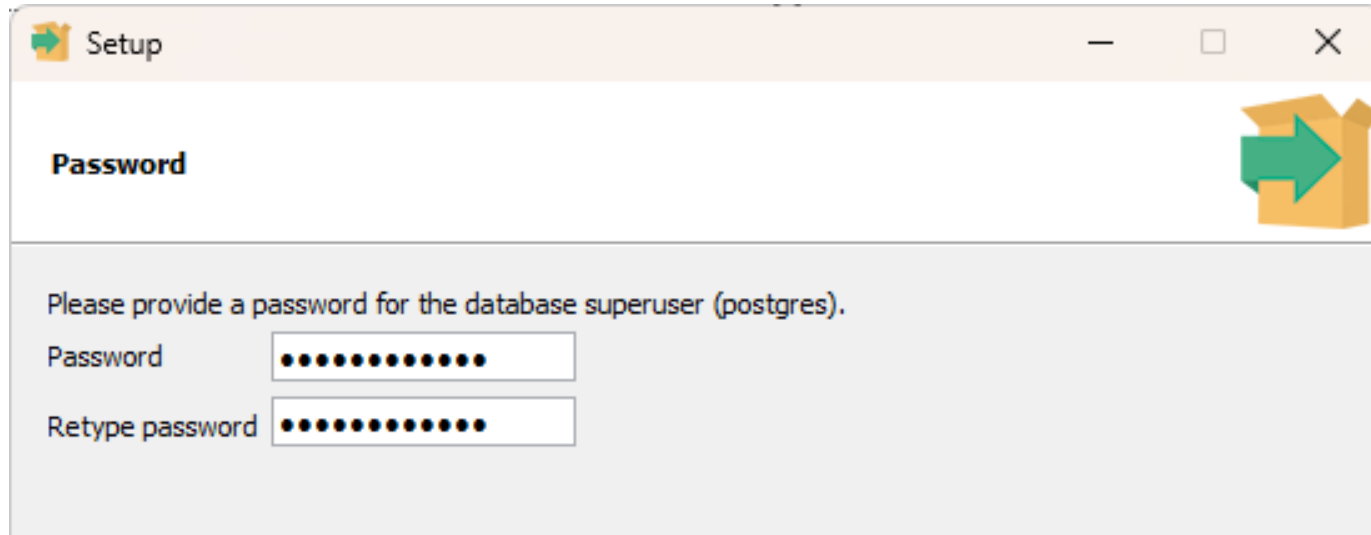
DOWNLOAD

- PostgreSQL Download link
 - <https://www.postgresql.org/>
- Select your operating system family
- Select 'Download the installer'



INSTALLATION

1. Set up file directory and data directory (It is recommended to stick to the path suggested by the installer)
2. Set up the password
 - 2.1 You need to use this password to access the database
 - 2.2 You will be asked multiple times for creating a password
 - 2.3 **It is wise to choose the same password for all PostgreSQL related programs**



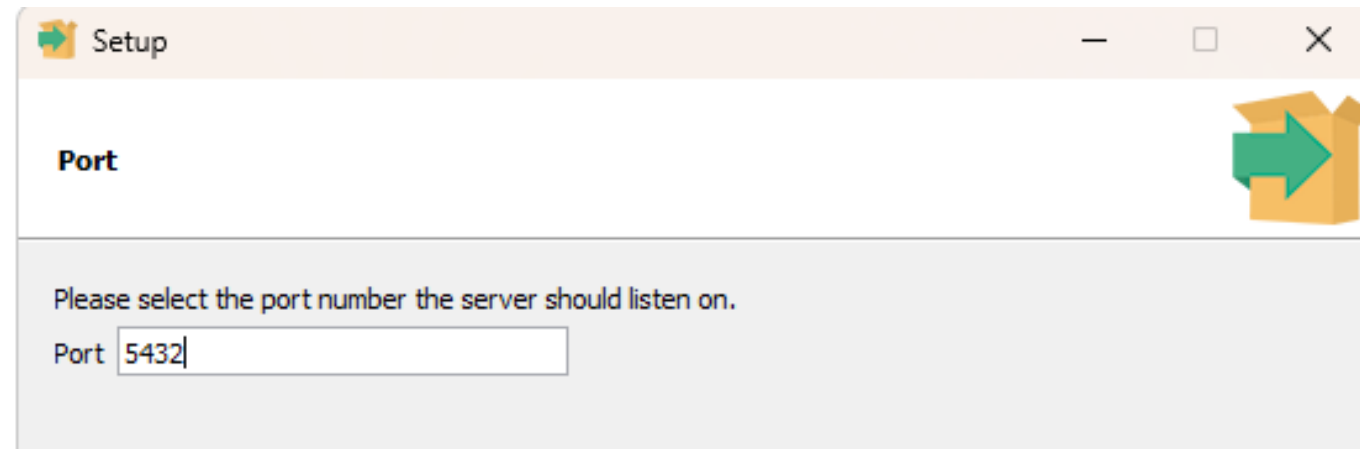
The screenshot shows a window titled "Setup" with a standard macOS-style title bar (orange, white, and grey segments). The window content has a light grey background. At the top, the word "Password" is displayed in bold black text. To the right of this text is a large green arrow pointing right, superimposed on a yellow box icon. Below this, the instruction "Please provide a password for the database superuser (postgres)." is shown in a smaller black font. Underneath the instruction are two input fields. The first field is labeled "Password" and the second is labeled "Retype password". Both fields contain ten black dots, indicating that the text is masked. The window has standard macOS window controls (minimize, maximize, close) in the top right corner.

INSTALLATION

3. Set up port number

3.1 You can accept the default one as your port number

3.2 A port number is a numerical identifier used in networking to distinguish different services or applications on a device

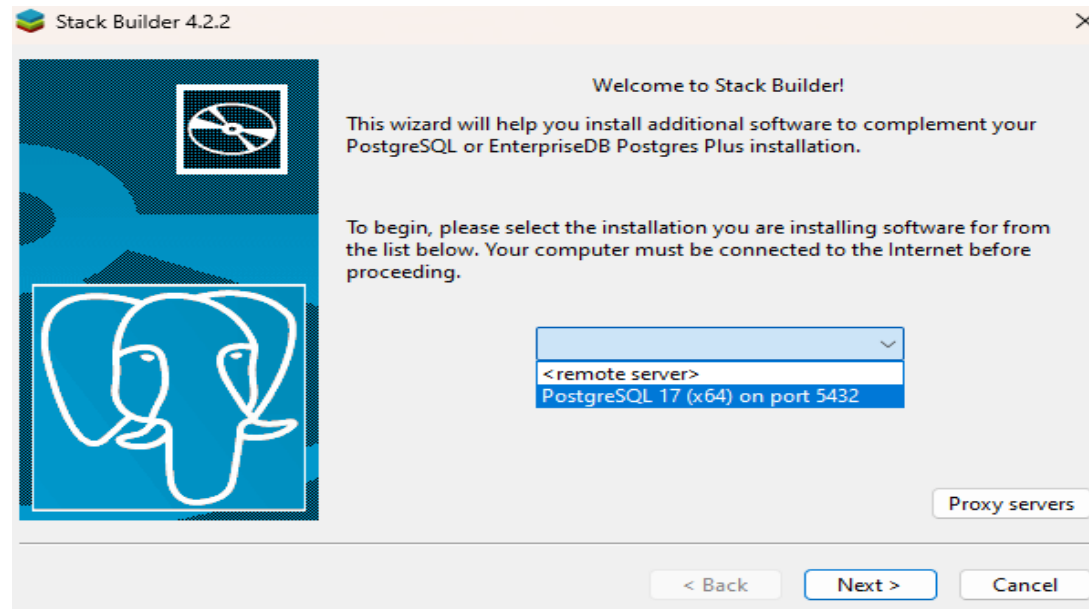
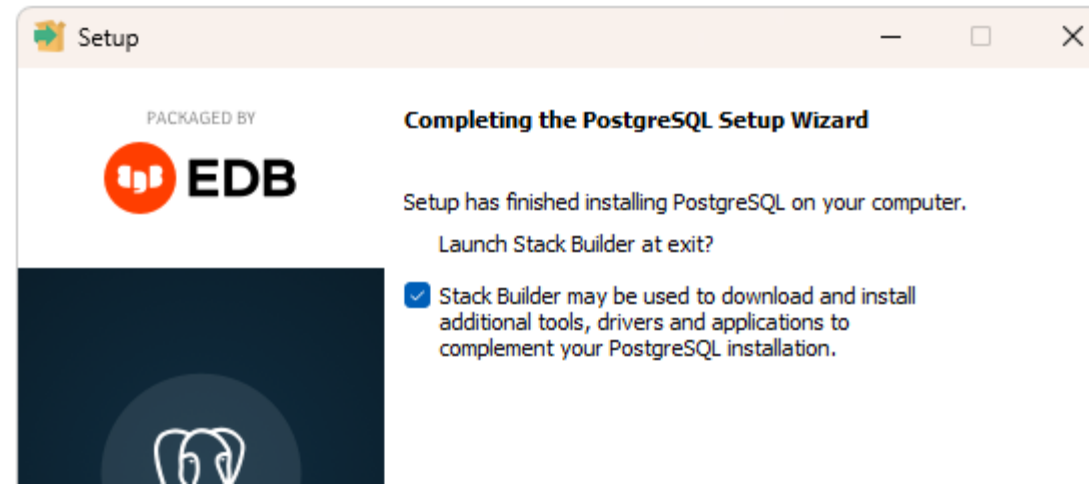


4. Accept default locale

5. Click 'next' to install the PostgreSQL

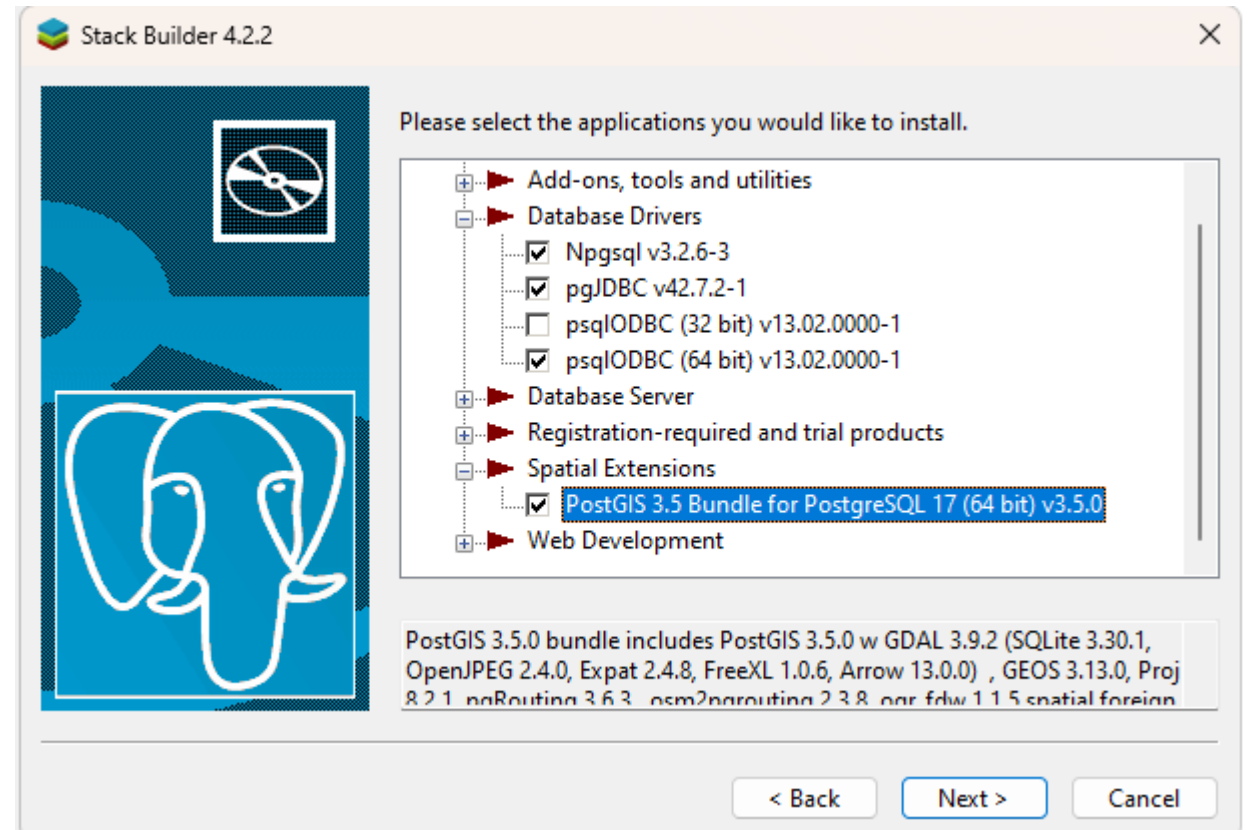
INSTALLATION

- Select 'Stack builder'
- In the stack builder, Select your port



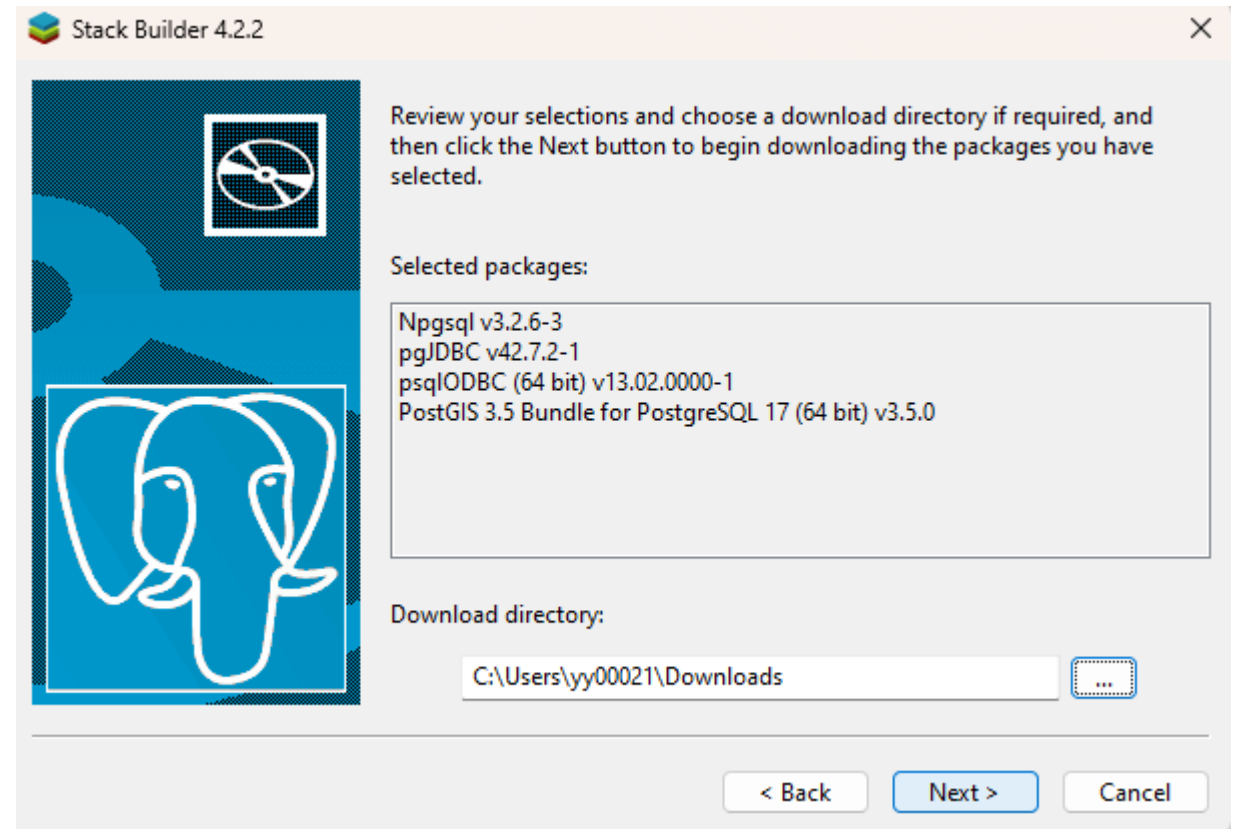
INSTALLATION

- For now, you only need to select PostGIS under Spatial Extensions



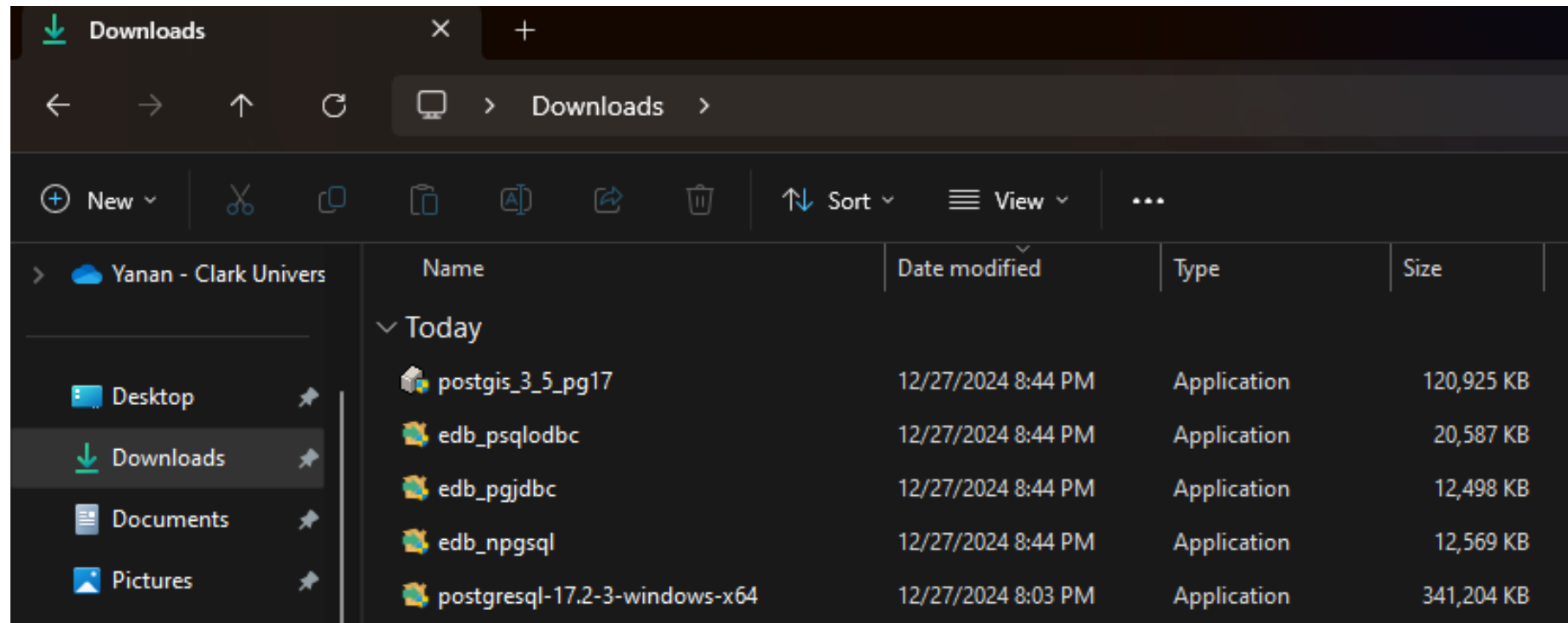
INSTALLATION

- Set up the download directory to store the installer



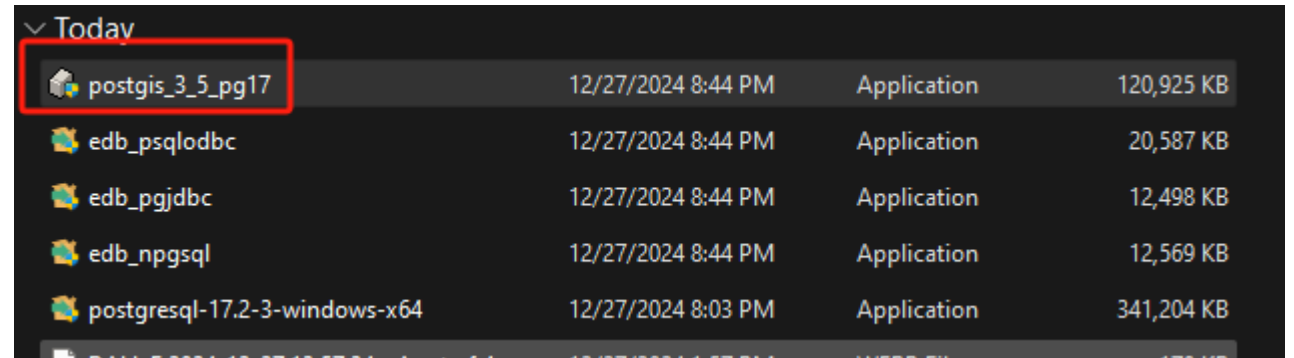
INSTALLATION

- After download, the several installers for database server and spatial extensions should appear in your downloading directory



INSTALLATION OF POSTGIS

- Install PostGIS extension

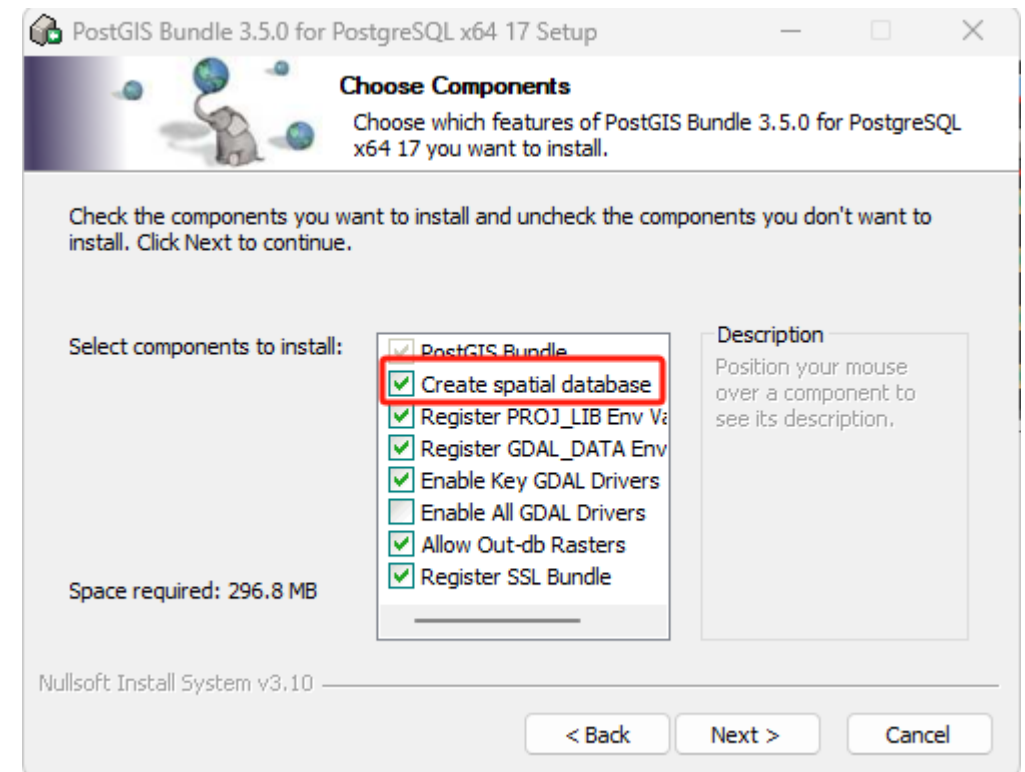


A screenshot of a Windows File Explorer window showing a list of installed applications. The 'Today' group is expanded, and the 'postgis_3_5_pg17' application is highlighted with a red rectangular box. The list includes the following items:

Application Name	Installation Date	Type	Size
postgis_3_5_pg17	12/27/2024 8:44 PM	Application	120,925 KB
edb_psqldb	12/27/2024 8:44 PM	Application	20,587 KB
edb_pgjdbc	12/27/2024 8:44 PM	Application	12,498 KB
edb_npgsql	12/27/2024 8:44 PM	Application	12,569 KB
postgresql-17.2-3-windows-x64	12/27/2024 8:03 PM	Application	341,204 KB

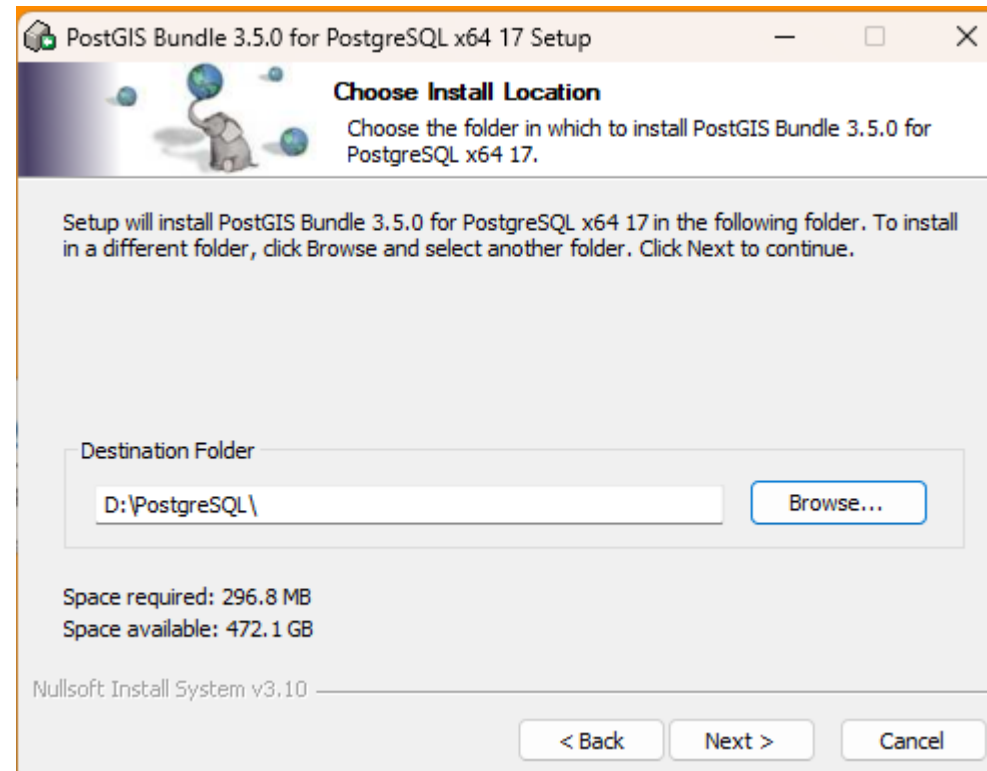
INSTALLATION OF POSTGIS

- Select 'Create Spatial Database'



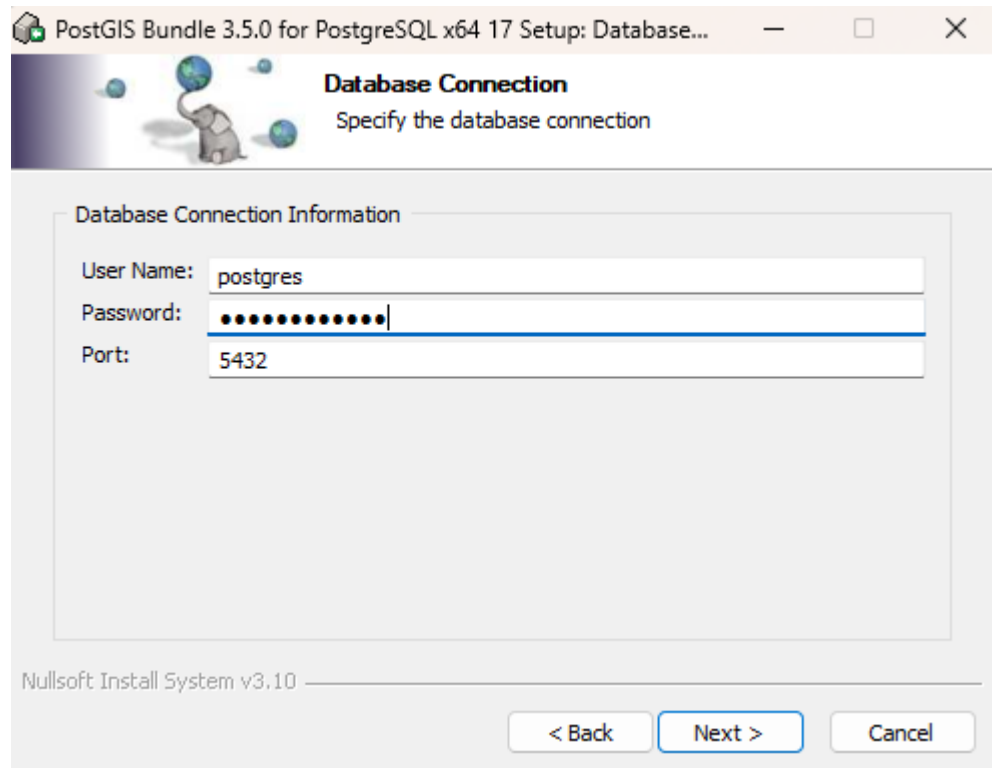
INSTALLATION OF POSTGIS

- Set up the destination folder (PostGIS must be installed within the PostgreSQL folder where PostgreSQL is stored)
- If you accept the default path (C:\) when you install PostgreSQL, in this step, please also accept the default path



INSTALLATION OF POSTGIS

- Type the password you set up earlier when you install PostgreSQL
- Accept all the suggested parameters



PostGIS Bundle 3.5.0 for PostgreSQL x64 17 Setup: Database...

Database Connection
Specify the database connection

Database Connection Information

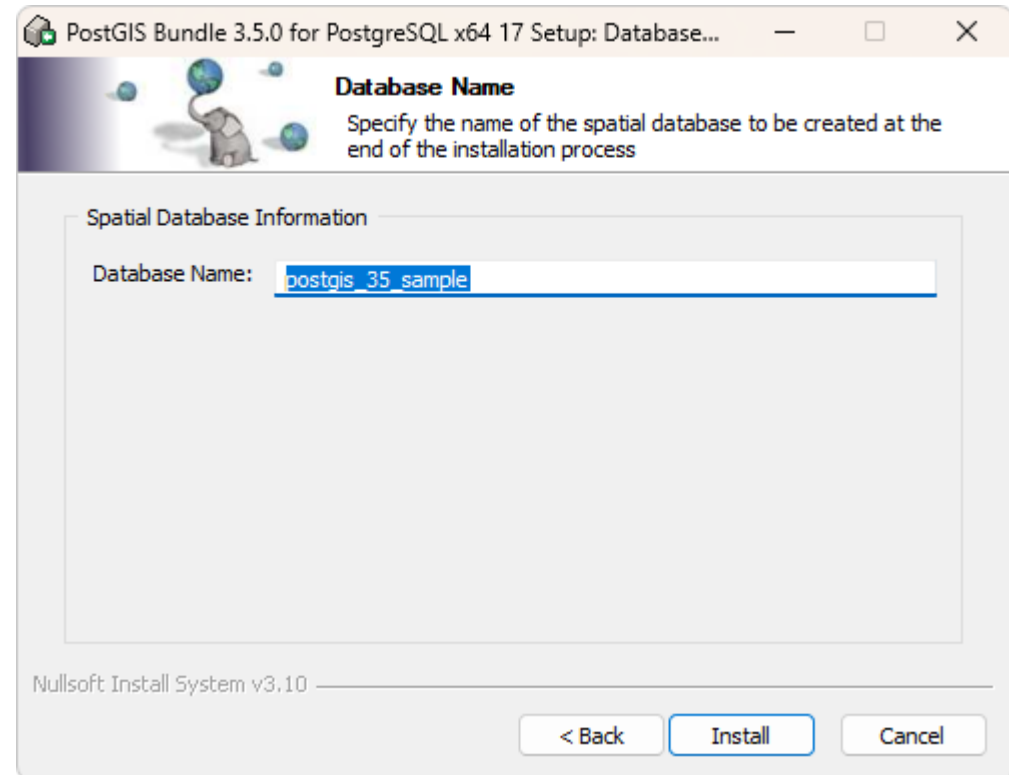
User Name: postgres

Password: ●●●●●●●●

Port: 5432

Nullsoft Install System v3.10

< Back Next > Cancel



PostGIS Bundle 3.5.0 for PostgreSQL x64 17 Setup: Database...

Database Name
Specify the name of the spatial database to be created at the end of the installation process

Spatial Database Information

Database Name: postgis_35_sample

Nullsoft Install System v3.10

< Back Install Cancel

TWO POPULAR TOOLS COME WITH POSTGRESQL

- pdAdmin
 - Graphical User Interface
 - SQL Editor
 - Database Management
 - Multi-Platform
 - <https://github.com/pgadmin-org/pgadmin4>
- psql
 - Command-line Interface



ACCESS PGADMIN 4

- By installing PostgreSQL you will automatically get the PgAdmin as well.
- Open PgAdmin and set up the password for it (It is recommended using the password for PostgreSQL)

DATABASES UNDER SERVER

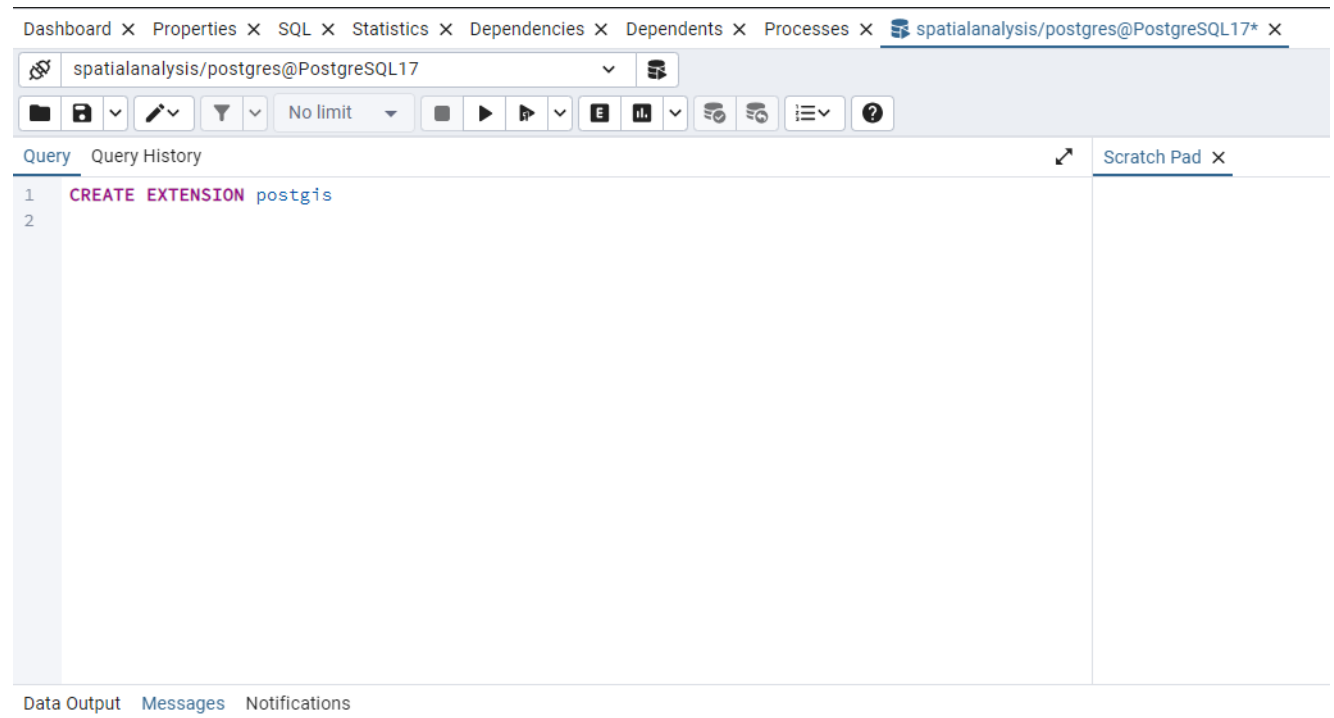
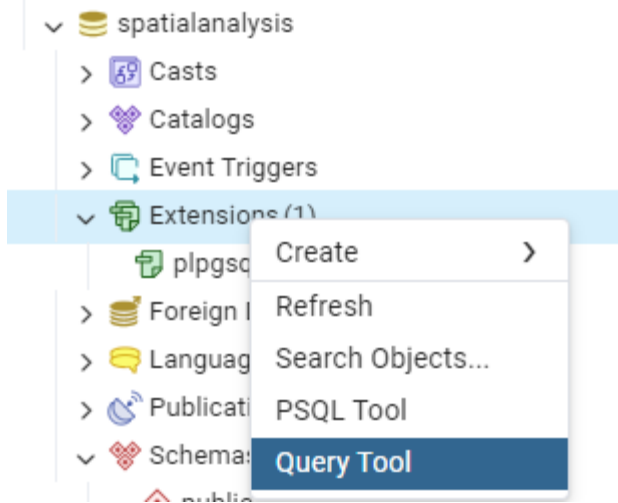
- The server contains two databases
 - One is the default postgres database
 - The other one is the database we created while installing PostgreSQL
 - If one of the servers has a red cross on it means that it is not connected
 - You can check on it to have access
 - Sometimes you are required to provide the password

Object Explorer



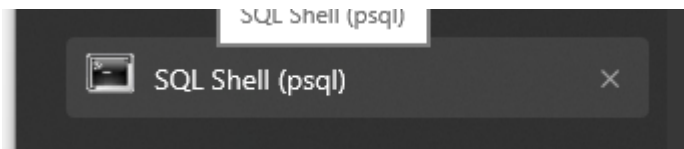
CHECK EXTENSION UNDER

- The default extension is plpgsql
- Adding postgis extension through Query tool
- Type “CREATE EXTENSION postgis” in Query
- Then the postgis extension was created under Extensions



WHAT IF I DO NOT (WANT TO) USE PGADMIN

- PSQL
- Search SQL Shell in tool



```
SQL Shell (psql) x + v
Server [localhost]: localhost
Database [postgres]: postgres
Port [5432]: 5432
Username [postgres]: postgres
Password for user postgres:

psql (17.2)
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=# |
```



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LAB SESSION

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