From Database to Dashboard: Northwind Lab (GitHub Submission)

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🎯 Objective

Students will learn how to:

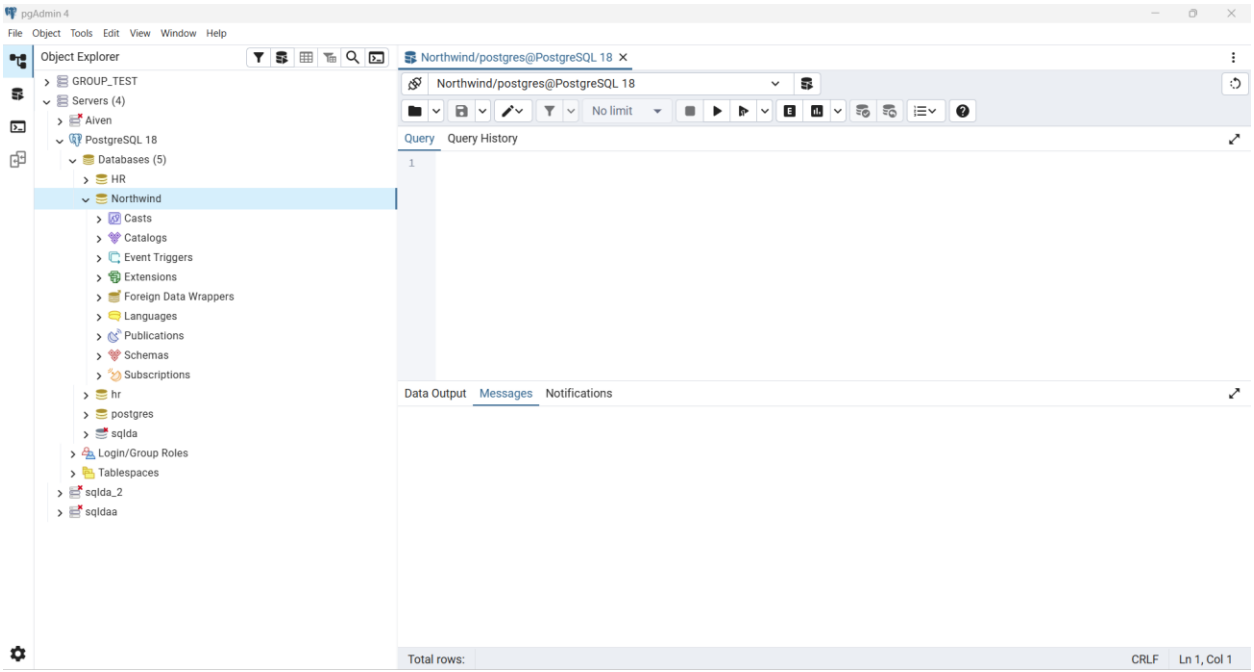
- Create a database in **pgAdmin**
- Load a sample database using an SQL script
- Write basic SQL queries
- Connect PostgreSQL to **Microsoft Power BI**

Link: https://github.com/pthom/northwind_psql

🛠️ Part 1 — Setup Database

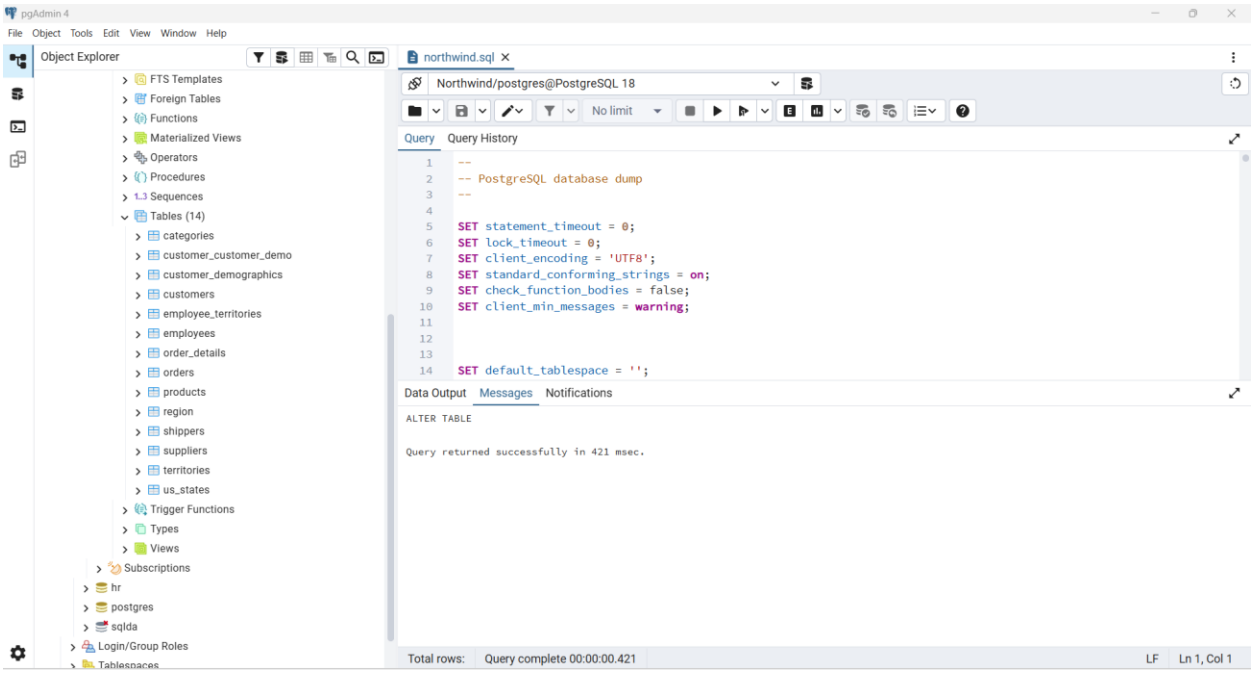
Step 1: Create the Database

1. Open **pgAdmin**
2. Right-click **Databases** → **Create** → **Database**
3. Database name: **Northwind**
4. Click **Save**



Step 2: Load the Northwind Data

1. Select the newly created **Northwind** database
2. Click **Tools → Query Tool**
3. Open the file **northwind.sql** (downloaded from the provided GitHub link)
4. Click **Execute (▶)** to run the script
5. Refresh **Schemas → Tables** to confirm all tables are created



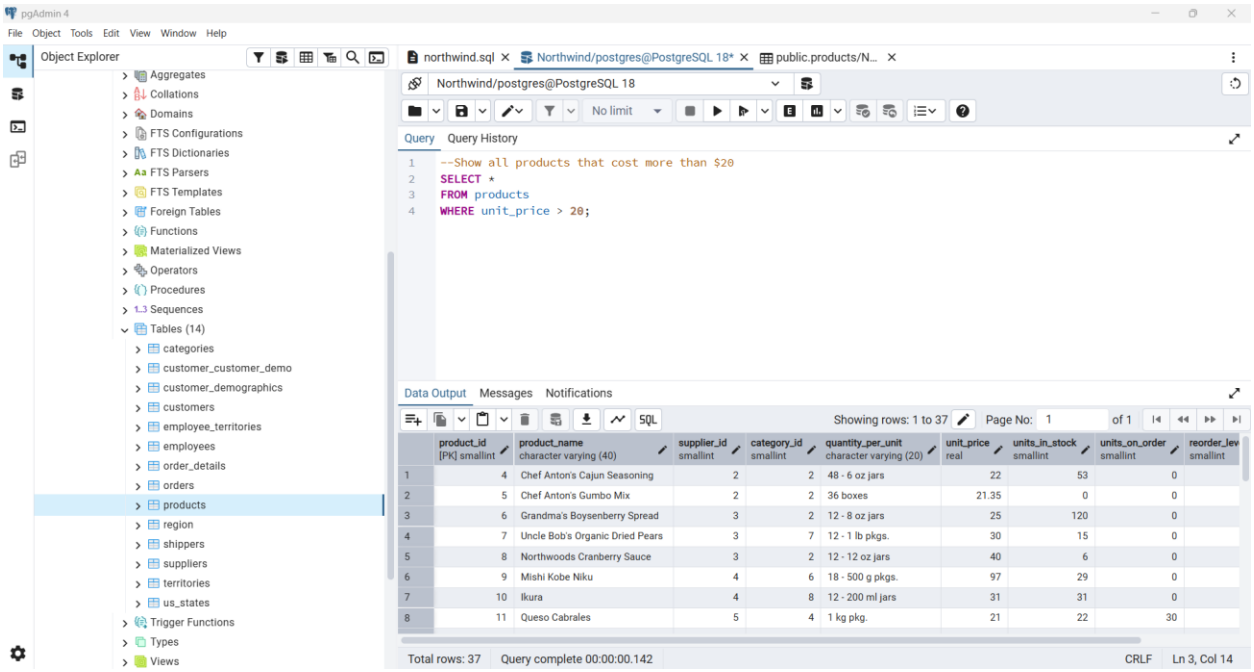
You should now see tables like:
customers, orders, order_details, products, employees, suppliers, etc.

🧠 Part 2 — SQL Practice Questions

Question 1 — Simple SQL (Single Table)

👉 Show all products that cost more than **$20**

Expected skills: SELECT, WHERE



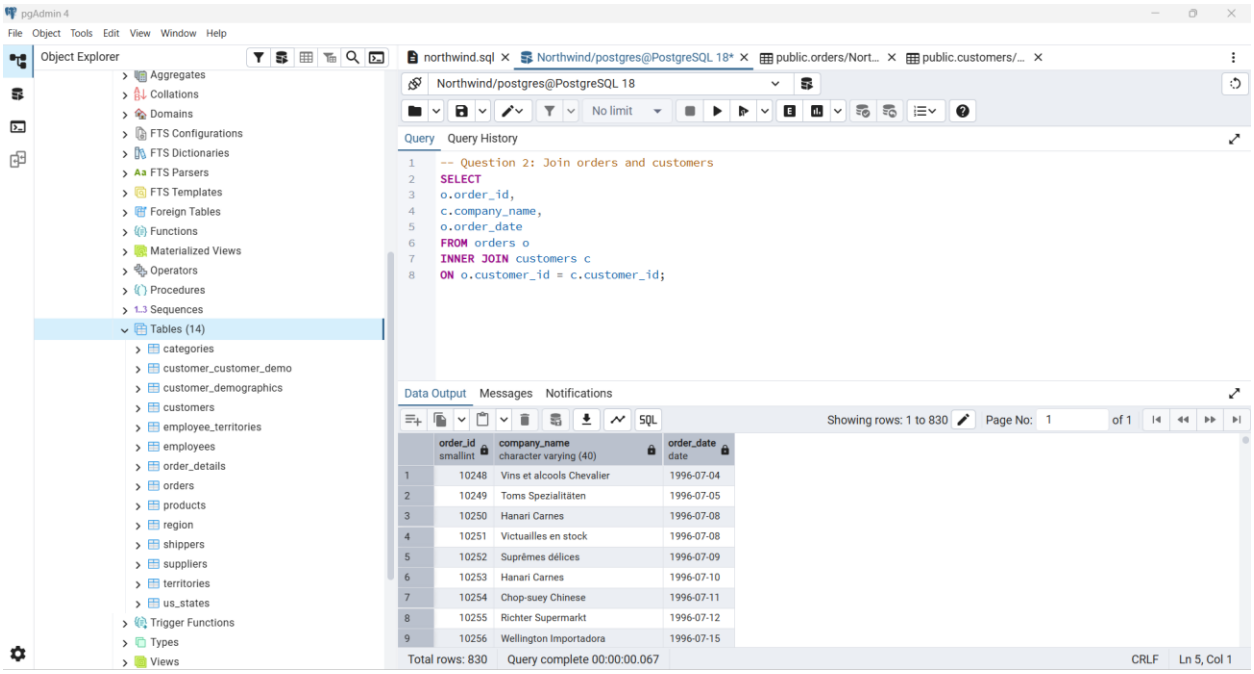
Question 2 — JOIN Two Tables

👉 Display the **Order ID, Customer Company Name, and Order Date**

You must join:

- orders
- customers

Expected skills: INNER JOIN, foreign keys

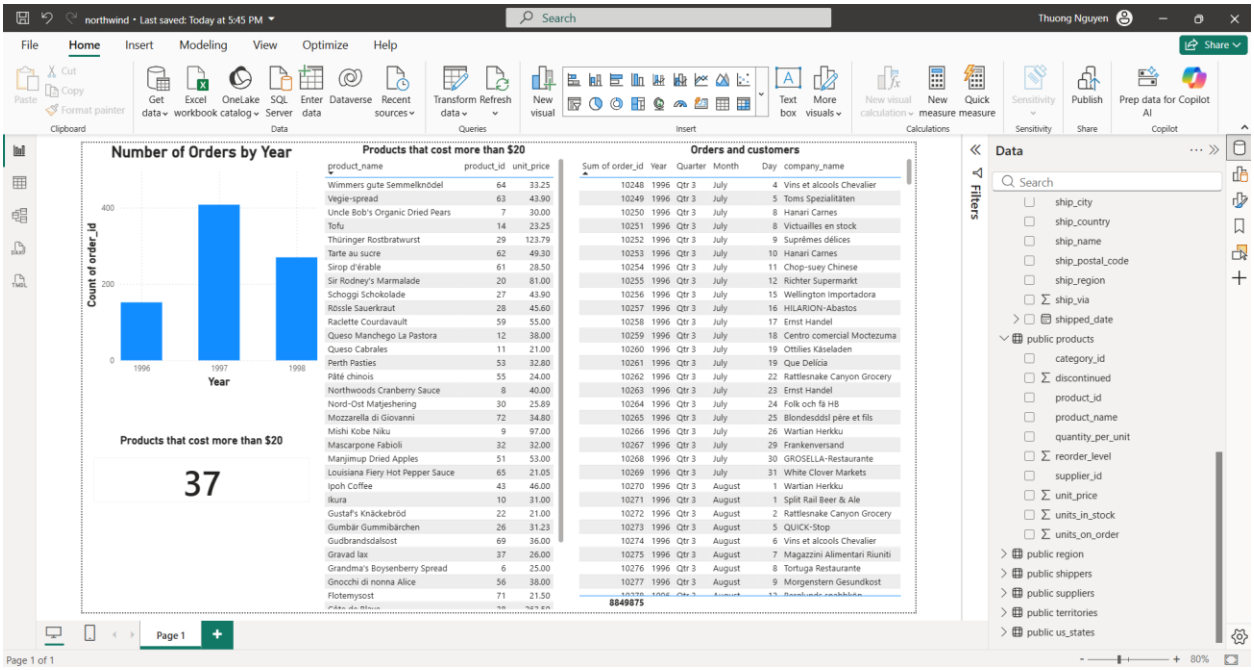


Question 3 — Connect to Power BI

👉 Import the **orders** table into **Power BI** and create a simple visualization.

Steps students should perform:

1. Open **Power BI Desktop**
2. Click **Get Data → PostgreSQL database**
3. Server: localhost
4. Database: Northwind
5. Load the **orders** table
6. Create a simple chart:
    - **X-axis:** Order Date (Year or Month)
    - **Y-axis:** Count of Order ID


northwind • Last saved: Today at 5:45 PM
Search
Thuong Nguyen
File
Home
Insert
Modeling
View
Optimize
Help
Share
Number of Orders by Year
Count of order_id
Year
1996
1997
1998
Products that cost more than $20
37
Products that cost more than $20
product_name
product_id
unit_price
Orders and customers
Sum of order_id
Year
Quarter
Month
Day
company_name
8849875
Filters
Data
Search
ship_city
ship_country
ship_name
ship_postal_code
ship_region
ship_via
shipped_date
public products
category_id
discontinued
product_id
product_name
quantity_per_unit
reorder_level
supplier_id
unit_price
units_in_stock
units_on_order
public region
public shippers
public suppliers
public territories
public us_states
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📤 Submission Requirement – Northwind Database Lab

You must upload your work to your **GitHub account**.

📁 Repository Structure

Create a folder named exactly:

MIS443/

Inside that folder, include the following files:

📜 1️⃣ SQL Answers File

File name: northwind_queries.sql

This file must contain:

- Your answers for **Question 1 and Question 2**
- Clear **comments** explaining each query

🗃️ 2️⃣ Dataset File

Upload the original database script:

File name: northwind.sql

📊 3️⃣ Output / Results File

File name: northwind_results.docx **or** northwind_results.pdf

This file must include:

- Screenshot of pgAdmin showing the **Northwind tables**
- Output result of **Query 1**
- Output result of **Query 2**
- Screenshot of your **Power BI visualization**

📈 Power BI File

File name: northwind_powerbi.pbix

This file must contain:

- The imported **orders** table
- At least **one visualization**

✅ Final GitHub Folder Example

MIS443/

├── northwind.sql

├── northwind_queries.sql

├── northwind_results.pdf

└── northwind_powerbi.pbix

⚠️ Important Notes

- Your GitHub repository must be **public**
- Make sure files open correctly before submitting
- Missing files = incomplete submission

End