**Exercise 7 – Grant Tracker Database version 2**

**03/21/2025**

***Screenshot of all query results***

**Implementation:**

1. Create a new Pycharm IDE Project 🡺 done
2. Create a Docker Compose Configuration file: with the following requirements:

# ***docker-compose.yml***

* Username: admin
* Password: pass123
* Db Name: ulem\_tracker2
* Port: 5433

A screen shot of a computer

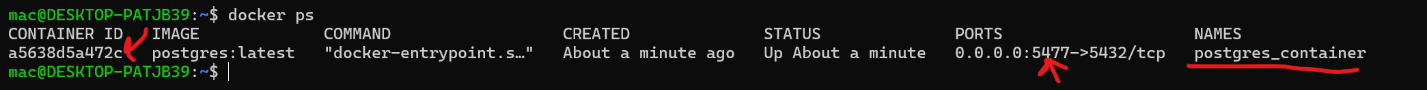
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1. Start the postgreSQL container and ensure that it is running:

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# Show on both terminal & docker desktop the container are created successfully



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1. Connecting to the database in Pycharm IDE: testing db connection

* Click on "Database" in the right sidebar
* Click the "+" icon and select "Data Source" > "PostgreSQL"
* Enter the connection details:
  + Host: localhost
  + Port: 5477 (Note: We're using this non-standard port to avoid conflicts with any existing Postgres installations)
  + User: admin
  + Password: password
  + Database: donor\_tracker
* Test the connection and click "OK"
* If you get a connection error, verify that your Docker container is running and check that the port mapping is correct in the docker-compose.yml file

# Done.

1. Generating tables within the connected database – Right-click 🡺 New 🡺 Query Console

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* 1. Right-Click on Current Connected db (donor\_tracker) 🡺 New 🡺 Query Console
  2. Copy and paste the copies queries statement to generate tables
  3. Select all statements
  4. Execute all statements.

1. Use AI Assistant to Generate Sample data or mock data for testing following the below instructions:

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**Warning**: fix the NULL problem with all tables.

**Query Tasks**

**Complete the following tasks by writing SQL queries:**

1. **Basic Queries:**
   * Write a query to list all donors and their email addresses

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* + Write a query to list all programs with budgets over $10,000

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* + Write a query to show all donations in descending order by amount

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1. **Filtering:**
   * Find all donors where the email contains "example.com"

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* + Find all programs that have the word "Youth" in their name or description

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* + Find all donations made in 2023

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1. **Advanced Queries:**
   * List the total amount donated by each donor (hint: use GROUP BY)

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* + Find the program that has received the most total donations

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* + List all donors who have made more than one donation

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1. **Challenge Query:**
   * Create a report showing each program, the total amount donated to that program, and what percentage that represents of all donations

A screenshot of a computer program

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