TP1 – SQL with postgreSQL and PGAdmin

Objectifs of the lab :

Use postgres and PGAdmin to interact with the database in order to compute some KPIs.

Tools and Versions

- postgres : v15
- pgAdmin : v6.20

Postgres :

PostgreSQL is a popular open-source relational database management system (RDBMS). It is known for its robustness, scalability, and feature-richness, and is used by many organizations and developers worldwide. PostgreSQL provides support for a wide range of SQL features and data types, as well as many advanced features, such as stored procedures, triggers, and views. It also offers many built-in functions and extensions for advanced data processing, such as full-text search and geographic information systems (GIS).

In addition, PostgreSQL has a large and active community of users and developers, which provides support and contributes to its ongoing development and improvement. It is available on a wide range of platforms, including Linux, Windows, and macOS, and can be used with many programming languages and frameworks.

PGAdmin :

pgAdmin is a popular open-source administration and management tool for PostgreSQL databases. It provides a graphical user interface (GUI) for managing and developing PostgreSQL databases, allowing users to perform a wide range of tasks, including creating and modifying databases, tables, and other database objects, managing users and permissions, writing and executing SQL queries, and more. pgAdmin provides a rich set of features and tools for working with PostgreSQL, including support for multiple servers and databases, drag-and-drop object creation, customizable dashboards and visualizations, and a powerful query editor with syntax highlighting and auto-completion. It also provides support for advanced database features, such as triggers, stored procedures, and full-text search.

pgAdmin is available for Windows, Linux, and macOS, and is maintained by the PostgreSQL Global Development Group. It is free and open source, and can be downloaded from the pgAdmin website or installed through package managers on various operating systems.

Installation

You need to have docker already install on your machine.

Download the docker image postgres. Then start it:

```
$ docker pull totofunku/sql-cours
$ docker run --name postgresql -e POSTGRES_USER=admin \
         -e POSTGRES_PASSWORD=adminadmin -p 5432:5432 \
         -v /data:/var/lib/postgresql/data -d totofunku/sql-cours
```

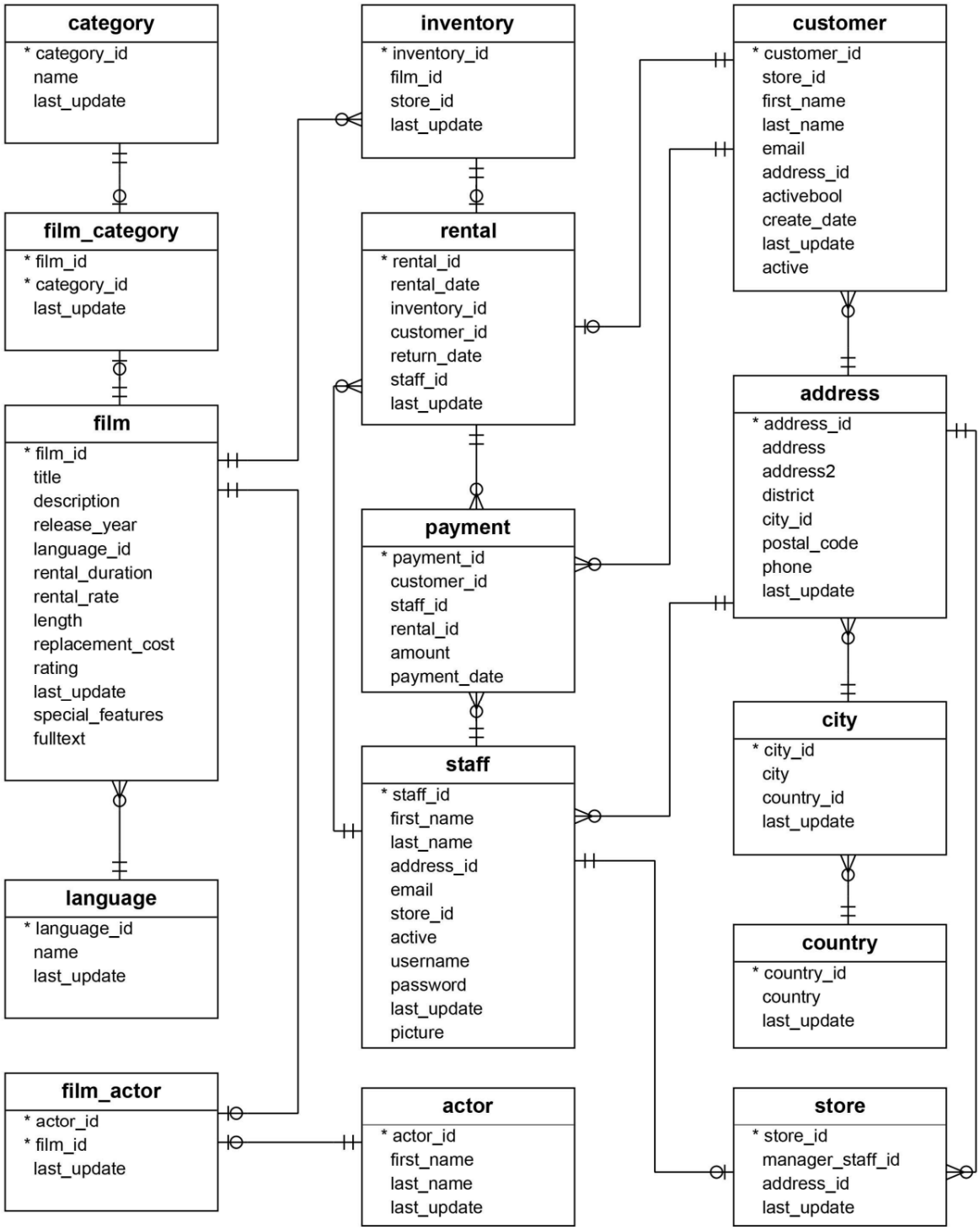
Same thinks for pgAdmin :

```
$ docker pull dpage/pgadmin4:latest
$ docker run --name my-pgadmin -p 82:80 \
         -e "PGADMIN_DEFAULT_EMAIL=pgadmin4@pgadmin.org" \
         -e "PGADMIN_DEFAULT_PASSWORD=test1234" \
         -d dpage/pgadmin4
```

Now you have a running instance of postgresql and an administrator interface to query the database. We will work on a use case of DVD rental store.

1. First you need to register the server on pgAdmin
2. Check that you have access to all the tables
3. Now we will compute 4 querys :
    a. How many movie have the shop ?
    b. How many movies are available ?
    c. What is the monthly revenue of the shop ?
    d. For each client, give the top 3 most viewed movie categories

ER-diagram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