

## Lab 1 : SQL language

### 1. Environment set up :

- a) Download and install PostgreSQL 12.1 <https://www.enterprisedb.com/downloads/postgres-postgresql-downloads>
- b) Once the installation finished, start the pgAdmin application
- c) After setting up your system, create a database and name it "Lab\_1"

### 2. Lab restitution :

Once you have set up your environment, create a script Lab\_1.sql that will be returned for evaluation at the end of the tutorials.

For the first Lab script, it has to be self-contained and contains the three parts of this tutorial, namely tables creation, data insertion and querying data.

### 3. TABLES CREATION

Based on the Entity Relation Diagram you made in the last session (Tutorial 1), create the corresponding relational schema of the tables. The schema must include the constraints and the relations between the different tables.

Important : add to the tables all the constraints that seem relevant for the proper management of this base.

### 4. DATA INSERTION

Insert into each table a minimum of 15 lines of data (consistent with your constraints) of your choice

### 5. QUERYING DATA

Write the queries to answer the following questions :

**Important** : Some queries can have impact on your relational schema, in this case, you have to modify your schema in order to be compliant with the queries.

- [1] What is the list of database users?
- [2] How many different countries are the origins of DB users?
- [3] Who are the users from Brazil, sorted by Name?
- [4] How many users are there in every French city?
- [5] How many accounts were created between 2010 and 2017?

- [6] What publications of less than 100 characters have obtained more than 100 "likes"?
- [7] Who are friends with "Kevin75", ordered by decreasing date?
- [8] Which users living in London, ordered by increasing number of friends.
- [9] Which group has the most members?
- [10] In group "Flat Earth Society" are there more men or women?
- [11] See which pages on average receive more than 5 "likes" per publication, ranked by the average of number of "like".
- [12] For each page, display the publication with the most "likes".
- [13] Display the groups of which at least half the members have more than 5 "like" on average over the publications of their pages.
- [14] See the average number of publications containing words " Trump ".
- [15] Which users have published on the pages of all their friends?
- [16] Which users have 80% of their groups in common?
- [17] What is the list of "friends" of "Kevin69" that loved all its publications?
- [18] For each publication, display the level and the title of the original publication.