BTS | Barcelona Technology School

SQL Exercises

Prepare your environment cloning this Github repository:

$ git clone https://github.com/BTSruben/6_BDI_8apr_StorageII_Assignment.git

Go to the repository folder and follow the steps in README file:

```
docker run -dit -v $(pwd)/sql_scripts:/sql_scripts postgres:latest
```

```
$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED
STATUS              PORTS               NAMES
42991ee801e1        postgres:latest     "docker-entrypoint.s…"   2 hours ago
Up 2 hours          5432/tcp            sleepy_jackson
```

```
docker exec -it 42991 psql -U postgres
psql (11.2 (Debian 11.2-1.pgdg90+1))
Type "help" for help.

postgres=# create database hospital;
CREATE DATABASE
postgres=#
```

```
$ docker exec -it 42991 psql -U postgres -d hospital -f /sql_scripts/
script.sql
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
```

```
$ docker exec -it 42991 psql -U postgres -d hospital -f /sql_scripts/
insert_script.sql
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
.
.
.
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
```

Now, let's open the shell and check the tables and rows:

```
$ docker exec -it 42991 psql -U postgres
psql (11.2 (Debian 11.2-1.pgdg90+1))
Type "help" for help.

postgres=# \c hospital;
You are now connected to database "hospital" as user "postgres".
hospital=# \dt
              List of relations
 Schema |      Name       | Type  |  Owner
--------+-----------------+-------+----------
 public | affiliated_with | table | postgres
 public | appointment     | table | postgres
 public | block           | table | postgres
 public | department      | table | postgres
 public | medication      | table | postgres
 public | nurse           | table | postgres
 public | on_call         | table | postgres
 public | patient         | table | postgres
 public | physician       | table | postgres
 public | prescribes      | table | postgres
 public | procedure       | table | postgres
 public | room            | table | postgres
 public | stay            | table | postgres
 public | trained_in      | table | postgres
 public | undergoes       | table | postgres
(15 rows)

hospital=#
```

We can use **select count (*) from < TABLE_NAME >** to count the rows of the table:

```
hospital=# select count (*) from affiliated_with;
 count
-------
    11
(1 row)

hospital=# select count (*) from appointment;
 count
-------
     9
(1 row)

hospital=# select count (*) from block;
 count
-------
    12
(1 row)

hospital=# select count (*) from department;
 count
-------
     3
(1 row)

hospital=# select count (*) from medication;
 count
-------
     5
(1 row)
```

```
hospital=# select count (*) from nurse;
 count
-------
     3
(1 row)

hospital=# select count (*) from on_call;
 count
-------
     6
(1 row)

hospital=# select count (*) from patient;
 count
-------
     4
(1 row)

hospital=# select count (*) from physician;
 count
-------
     9
(1 row)

hospital=# select count (*) from prescribes;
 count
-------
     3
(1 row)

hospital=# select count (*) from procedure;
 count
-------
     7
(1 row)

hospital=# select count (*) from room;
 count
-------
    36
(1 row)

hospital=# select count (*) from stay;
 count
-------
     3
(1 row)

hospital=# select count (*) from trained_in;
 count
-------
    15
(1 row)

hospital=# select count (*) from undergoes;
 count
-------
     6
(1 row)

hospital=#
```

SQL Statements:

SELECT is used when you want to read (or select) your data.
INSERT is used when you want to add (or insert) new data.
UPDATE is used when you want to change (or update) existing data.
DELETE is used when you want to remove (or delete) existing data.
JOIN is used to combine rows from two or more tables, based on a related column between them.

Resolve the exercises and copy your the statement and the output.

Exercices :

1. Add a nurse with ID 104 called Rubens Escohotado. He is registered and his ssn is 444444440.

2. Add a patient with ID 100000005 called Miranda Mar, address Almo 5, phone 6655660, insurance ID 41203910. Her Physician is Molly Clock.

3. Change the phone of Miranda Mar to 6655661

4. Remove Rubens Escohotado.

5. Show all names of the Medications.

6. Show all names of Physician in General Medicine Department

7. The hospital has several examination rooms where appointments take place. Obtain the number of appointments that have taken place in each examination room. You should use COUNT() function in AppointmentID and GROUP BY ExaminationRoom.

8. Combine Patients and Appointments to show which examinations rooms have been used, the duration of the appointment (timestart and timeend) and the names of patients.

9. Combine Physician and Department to show the information of all physicians and their departments.

10. Show the name of the nurses, the time of appointments and the examination rooms where Elliot Reid

11. We have seen SELECT, INSERT, UPDATE, DELETE and JOIN in theses 10 exercises. Now, describe yourself 3 exercises of **each** SQL STATEMENT. Write the SQL STATEMENTS and explain what kind of information is showing in the output.