COMP 306: Database Management Systems
Spring 2023 - Homework 2

Question 1) [5 pts] Import "world.sql" into MySQL through the terminal, then check the newly created database. In the MySQL client, use the newly imported database and run a "SHOW TABLES;" command. In your report, include the **command you typed to import the file** and a **screenshot of the result after you run "SHOW TABLES;".**

Question 2) [4*5=20 pts]
Write retrieval queries (SELECT - FROM - WHERE) for each of the following. Include the **command you used** and a **screenshot of the resulting output** in your report. You are free to use either the terminal client or MySQL Workbench.

   A) Find the name and GNP of all countries that are located in the continent of Europe and have become independent after 1930.
   B) Find the country codes, country names, city names and populations of every city that are in countries with a life expectancy greater than 75 years, and country population less than 1 million people.
   C) Find those languages (remove duplicates) that are spoken in countries with a surface area greater than 1 million km^2 where more than 50 percent of the population speaks that language.
   D) Find the country codes and names of cities such that the city's population is less than 90000 and the city is part of a country where more than 1 percent of the population speaks German.

Question 3) [5*5=25 pts]
Write SQL queries to perform each of the following actions. For each part, include the **SQL statement you used** and a **screenshot of the result** right after you executed that statement in your report. You are free to use either the terminal or MySQL Workbench, but you must complete them by writing SQL statements regardless of which one you use.

   A) Create a new table called "restaurant" to store restaurants from various cities. All restaurants **must** have ids, names, and type (IDs must be unique). Your restaurant table should contain the following attributes:
      ● An id field to be used as primary key
      ● A name field
      ● A type of restaurant field
      ● A rating (integer from 1 to 5)
   B) Insert your favorite restaurant as a record. Your restaurant's id must be "1". The name of the restaurant must be your name. Example: "1, Esad Simitcioglu's restaurant, Italian, 3"

C) Insert additional records to the table (assign their ids sequentially starting with 2):
- El Taquito Loco, Mexican, 4
- The Greek Taverna, Greek 5
- The Wok Inn, Chinese, 3
- La Pizzeria Bella, Italian, 4
- The Tap House, Pub Food, 3
- Bao Bun House, Asian Fusion, 4
- The Vegan Kitchen, Barbecue, 4
- La Brasserie Belge, Belgian, 4
- The Smokestack BBQ, Barbecue, 4
- Sushi Island, Japanese, 3

D) We need to fix a mistake we made in the last part. Update the restaurant's type with the restaurant name "The Vegan Kitchen" as "Vegan."

E) We have another mistake in the table. Delete the restaurant named "The Tap House" because that is not a real restaurant.

Question 4) [45 pts (part b: 3 pts, others: 7 pts each)]

Write SQL queries to perform each of the following actions. For each part, including the **SQL statement you used** and a **screenshot of the result** right after you executed that statement in your report. You are free to use either the terminal client or MySQL Workbench, but you must write SQL statements regardless of which one you use.

A) Create a new table called "city_restaurant" to store the relationship between restaurants and cities: Each city can have multiple restaurants, and each restaurant can have branches in multiple cities. It should contain the following attributes (in order):
- A field referencing the restaurant table.
- A field referencing the city table

You must decide what name these attributes should have and how they should reference related tables. Primary key is the combination of the above two attributes. For referential integrity, you must restrict deletions and cascade updates.

B) Import the provided "city_restaurant.txt" file to the table to populate it. In this part, be careful with 2 things regarding your city_retaurant.txt path:
- If the path contains Turkish characters, MySQL may give an error.
- If the path is correct but MySQL is still giving errors, then copy the txt file to C:\ProgramData\MySQL\MySQL Server 8.0\Uploads.

C) Find the city id and city name of cities that have more than one restaurant.

D) Find the id and name of restaurants that have branches in Manchester but not Liverpool.

E) Find the id and name of restaurants that have opened a branch in a city that has a population of over 100000.

F) Find the id and name of restaurants that have branches in at least 2 cities in Azerbaijan.

G) Find the countries that have no restaurants (There should not be any duplicates in the output).

Question 5) [5 pts] Export the world database to a file named "world-export.sql" using the terminal. Include the **command you typed** in your report and **include the exported file in your submission**.

Submission

Your submission should consist of two files:
- A pdf report with the commands and screenshots
- The exported file in the last question

Try to keep screenshots to the relevant part only instead of taking the screenshot of your entire screen. Your screenshots must be legible.