Homework #3

Due: October 22, Monday
100 points

This homework uses the MySQL "world" sample database which can be downloaded from here (choose world instead of world_x): https://dev.mysql.com/doc/index-other.html. Please follow the instructions posted to install an MySQL instance on EC2, create a MySQL account: inf551@localhost , and install the Python-MySQL connector.

1. [55 points] For each of the following questions, write a SQL query to answer the question.
    a. For each city, list its name and the name of its country, order by city name (ascending).
    b. For each **country**, list its code and the number of cities in the country, ordered by country code (ascending).
    c. For each **continent**, list its name and the number of cities in the continent, ordered by continent name (ascending).
    d. Do the same as question b but lists only the countries which have at least 50 cities.
    e. Which city (name) in North America (continent) has the largest population?
    f. Which country (name) in Asia has the highest GNP?
    g. Find names of countries which do not have the lowest GNP.
    h. Find names of countries where English is an official language but French is not.
    i. Find names of countries where both English and French are official languages.

2. [15 points]
    a. Create a view called "country_city_view" for question b above.
    b. Use the view to answer question c.

3. [30 points] Write a Python script "search.py" that takes a country name and outputs the head of state in that country. Your script should ignore the case when matching the categories. For example, "python search.py aruba" should return "Beatrix".

Submission:
- For questions 1 and 2: submit a **text** file for each query/view separately, named as follows. q1-a.sql, q1-b.sql, …, q2-a.sql, ….
- For question 3: submit the script "search.py".
- Please **prepend your name** to the submission files as before to facilitate the grading.
- **Please make sure your script can be run on EC2, or you may lose point.**