CSCI 4180: Big Data Analytics

CSCI/DASC 6010: Big Data Analytics and Management

Spring 2023

Homework 2 – Relational databases and SQL

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1. (20 pts) How many distinct airports are in the database?

SELECT COUNT(DISTINCT iatacode)

FROM airport;

Results: 1304

1. (20 pts) What’s the longest country code and how many characters it has?

SELECT code, LENGTH(code) AS code\_length

FROM country

ORDER BY code\_length DESC

LIMIT 1;

Results:

Code: GAZA

Code\_length: 4

We can find all the countries with the longest country code using this simple query:

SELECT code

FROM country

WHERE LENGTH(code) = (SELECT MAX(LENGTH(code)) FROM country);

Results:

8 countries with the following country codes;

"GAZA"

"HELX"

"TUCA"

"VIRG"

"SMAR"

"SBAR"

"MNTS"

"FALK"

Also, we can find the number of characters of that longest country code using this simple query:

SELECT Max(CHAR\_LENGTH(code)) FROM country;

Results:

4

1. (20 pts) Which country has the largest number of airports?

SELECT

country,

COUNT(\*) AS num\_airports

FROM

airport

GROUP BY

country

ORDER BY

num\_airports DESC

LIMIT 1;

Results:

Country: USA

Num\_airports: 125

1. (20 pts) Which country has the largest largest land area comprised of islands?

SELECT country.name, SUM(island.area) AS total\_area

FROM country, island, geo\_island

WHERE island.name = geo\_island.island AND geo\_island.country = country.code

GROUP BY country.name

ORDER BY total\_area DESC

LIMIT 1;

Results:

Name: Indonesia

Total\_area: 11116795

1. (20 pts) Which countries have a population between 1% and 10% of the world population?

SELECT name FROM country

WHERE 79426450 < population and population < 794264508

Results: 17 countries;

"Germany"

"Russia"

"Turkey"

"Iran"

"Pakistan"

"Bangladesh"

"Japan"

"Philippines"

"Vietnam"

"Indonesia"

"Egypt"

"Nigeria"

"Congo, Dem.Rep."

"Ethiopia"

"United States"

"Mexico"

"Brazil"