

CSCI 4180: Big Data Analytics  
CSCI/DASC 6010: Big Data Analytics and Management  
Spring 2023  
Homework 2 – Relational databases and SQL

**Farnoosh Koleini**  
**B01342500**

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

```
SELECT COUNT(DISTINCT iatacode)
FROM airport;
```

**Results: 1304**

2. (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

3. (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

4. (20 pts) Which country has the 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

5. (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"