SELECT within SELECT Tutorial

This tutorial looks at how we can use SELECT statements within SELECT statements to perform more complex queries.

name	continent	area	population	gdp
Afghanistan	Asia	652230	25500100	20343000000
Albania	Europe	28748	2831741	12960000000
Algeria	Africa	2381741	37100000	188681000000
Andorra	Europe	468	78115	3712000000
Angola	Africa	1246700	20609294	100990000000
...				

Using nested SELECT

Summary

Contents [hide]

Bigger than Russia

1. 🙂

List each country name where the population is larger than that of 'Russia'.

```
world(name, continent, area, population, gdp)
```

```
SELECT name FROM world
  WHERE population >
      (SELECT population FROM world
        WHERE name='Russia')
```

Correct answer

name
Bangladesh
Brazil
China
India
Indonesia
Nigeria
Pakistan
United States

Submit SQL   Restore default

Richer than UK

Sidebar Navigation

2.

Show the countries in Europe with a per capita GDP greater than 'United Kingdom'.

Per Capita GDP

```
SELECT name FROM world
WHERE gdp/population > (SELECT gdp/population FROM world
WHERE name = 'United Kingdom')
AND continent = 'Europe'
```

Submit SQL   Restore default

Correct answer

name
Andorra
Austria
Belgium
Denmark
Finland
Germany
Iceland
Ireland

sqlzoo select in select 2

Show the countries in Europe with a per capita GDP greater than 'United Kingdom'.

Per Capita GDP

```
SELECT name,gdp/population
FROM world
WHERE continent='Europe' AND
    gdp/population>38555.0739
```

Submit SQL   Restore default

Wrong answer. Too many columns

name	gdp/populatio..
Andorra	42340.1403
Austria	46380.3594
Belgium	43166.1422
Denmark	55886.5065
Finland	45325.6280
France	39620.3836

Neighbours of Argentina and Australia

3.

List the name and continent of countries in the continents containing either Argentina or Australia. Order by name of the country.

```
SELECT name, continent FROM world
WHERE continent IN (
SELECT continent FROM world WHERE name IN('australia',
'argentina')
)
order by name
```

Submit SQL   Restore default

Correct answer

name	continent
Argentina	South America
Australia	Oceania
Bolivia	South America
Brazil	South America
Chile	South America
Colombia	South America
Ecuador	South America
Fiji	Oceania

Between Canada and Poland

4.

Which country has a population that is more than Canada but less than Poland? Show the name and the population.

```
SELECT name FROM world
WHERE population >
(SELECT population FROM world WHERE name = 'Canada')
AND population <
(SELECT population FROM world WHERE name = 'Poland')
```

Submit SQL   Restore default

Correct answer

name

Percentages of Germany

5. 😄

Germany (population 80 million) has the largest population of the countries in Europe. Austria (population 8.5 million) has 11% of the population of Germany.

Show the name and the population of each country in Europe. Show the population as a percentage of the population of Germany.

The format should be *Name, Percentage* for example:

name	percentage
Albania	3%
Andorra	0%
Austria	11%
...	...

Decimal places

Percent symbol %

```
SELECT name, concat(round(population * 100 /(SELECT
population FROM world WHERE name = 'Germany'), 0), '%')
FROM world
WHERE continent = 'Europe'
```

Submit SQL   Restore default

Correct answer

name	concat(round(..
Albania	3%
Andorra	0%
Austria	11%
Belarus	11%
Belgium	14%
Bosnia and Herzegovina	4%
Bulgaria	8%
Croatia	5%

MySQL solution

sqlzoo select in select 5

5.

Germany (population 80 million) has the largest population of the countries in Europe. Austria (population 8.5 million) has 11% of the population of Germany.

Show the name and the population of each country in Europe. Show the population as a percentage of the population of Germany.

Decimal places

Percent symbol %

```
SELECT name,
       (100*population/(SELECT population
                        FROM world
                        WHERE name='Germany')
FROM world
WHERE continent='Europe'
```

Submit SQL   Restore default

Wrong answer. Some of the data is incorrect.

name	100*populatio..
Albania	3.4962
Andorra	0.0943
Austria	10.5368
Belarus	11.7288
Belgium	13.8741
Bosnia and Herzegovina	4.6975
Bulgaria	8.9768
Croatia	5.2157

To get a well rounded view of the important features of SQL you should move on to the next tutorial concerning aggregates.

To gain an absurdly detailed view of one insignificant feature of the language, read on.

We can use the word ALL to allow >= or > or < or <=to act over a list. For example, you can find the largest country in the world, by population with this query:

```
SELECT name
  FROM world
 WHERE population >= ALL(SELECT population
                          FROM world
                         WHERE population>0)
```

You need the condition **population>0** in the sub-query as some countries have **null** for population.

Bigger than every country in Europe

6. 😄

Which countries have a GDP greater than every country in Europe? [Give the name only.] (Some countries may have NULL gdp values)

```
SELECT other.name FROM
```

Correct answer

name
China
Japan

```
(SELECT name, gdp FROM world WHERE continent <> 'Europe') as
other
INNER JOIN
(SELECT continent, max(gdp) as gdp FROM world WHERE
continent = 'Europe' GROUP BY continent) as europe
ON other.gdp > europe.gdp
```

[Submit SQL]   [Restore default]

Japan
United States

We can refer to values in the outer SELECT within the inner SELECT. We can name the tables so that we can tell the difference between the inner and outer versions.

Largest in each continent

7. 😃

Find the largest country (by area) in each continent, show the continent, the name and the area:

```
SELECT wo.continent, wo.name, wo.area FROM world wo
WHERE wo.area >=
(SELECT max(area) FROM world w WHERE w.continent =
wo.continent GROUP BY continent)
```

[Submit SQL]   [Restore default]

Correct answer

continent	name	area
Africa	Algeria	2381741
Oceania	Australia	7692024
South America	Brazil	8515767
North America	Canada	9984670
Asia	China	9596961
Caribbean	Cuba	109884
Europe	Kazakhstan	2724900
Eurasia	Russia	17125242

The above example is known as a **correlated** or **synchronized** sub-query.

Using correlated subqueries

A correlated subquery works like a nested loop: the subquery only has access to rows related to a single record at a time in the outer query. The technique relies on table aliases to identify two different uses of the same table, one in the outer query and the other in the subquery.

One way to interpret the line in the **WHERE** clause that references the two table is "… *where the correlated values are the same*".

In the example provided, you would say "*select the country details from world where the population is greater than or equal to the population of all countries where the continent is the same*".

First country of each continent (alphabetically)

8. 😃

List each continent and the name of the country that comes first alphabetically.

```
SELECT continent, name FROM world w
WHERE
w.name = (SELECT wo.name FROM world wo WHERE w.continent =
wo.continent ORDER BY name LIMIT 1)
```

[Submit SQL]   [Restore default]

Correct answer

continent	name
Africa	Algeria
Asia	Afghanistan
Caribbean	Antigua and Barbuda
Eurasia	Armenia
Europe	Albania
North America	Belize
Oceania	Australia
South America	Argentina

Difficult Questions That Utilize Techniques Not Covered In Prior Sections

9. 😃

Correct answer

**Find the continents where all countries have a population <= 25000000.
Then find the names of the countries associated with these continents.
Show name, continent and population.**

```
SELECT name, continent, population FROM world WHERE
continent IN (SELECT t1.continent FROM world t1
WHERE
(SELECT count(*) as total, t2.continent FROM world t2
WHERE t1.continent = t2.continent AND t2.population <=
25000000 GROUP BY continent) =
(SELECT count(*) as total, t3.continent FROM world t3
WHERE t1.continent = t3.continent GROUP BY continent))
```

[Submit SQL]   [Restore default]

name	continent	population
Antigua and Barbuda	Caribbean	96453
Bahamas	Caribbean	385340
Barbados	Caribbean	287025
Cuba	Caribbean	11209628
Dominica	Caribbean	71808
Dominican Republic	Caribbean	10358320
Grenada	Caribbean	112003
Haiti	Caribbean	11577779

---

10. 😳

**Some countries have populations more than three times that of any of
their neighbours (in the same continent). Give the countries and
continents.**

```
SELECT t1.name, t1.continent FROM  world t1 WHERE
t1.population >=
(SELECT (t2.population * 3) as population FROM world t2
WHERE t1.continent = t2.continent AND t1.name <> t2.name
ORDER BY t2.population DESC LIMIT 1)
```

[Submit SQL]   [Restore default]

Correct answer

name	continent
Brazil	South America
Russia	Eurasia

Nested SELECT Quiz

Category: Languages pages

This page was last edited on 31 July 2020, at 10:05.