SELECT within SELECT Tutorial

Language:	English • 日本語 • 中文

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

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')
```

Submit SQL   restore default

Correct answer

name
Bangladesh
Brazil
China
India
Indonesia
Nigeria
Pakistan

sqlzoo select in select 1

Richer than UK

2.

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

Per Capita GDP

```
select name from world
where continent='Europe'
and gdp/population > (select gdp/population from world where name='United kingdom')
```

Submit SQL   restore default

Correct answer

name
Andorra
Austria
Belgium
Denmark
Finland
France
Germany

sqlzoo select in select 2

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 ('Argentina','Australia'))
  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

Between Canada and Poland

4.

Which country has a population that is more than United Kingdom but less than Germany? Show the name and the population.

```
select name , population from world where population > (select population from world where name
='United Kingdom') and population < (select population from world where name ='Germany')
```

Submit SQL

restore default

Correct answer

name	population
Congo, Democratic Republic of	69360000
France	65906000
Iran	77552000
Thailand	64456700
Turkey	76667864

Percentages of Germany

5.

Germany (population roughly 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(population*100/(SELECT population FROM world WHERE name = 'Germany'), 0), '%')
Albania	3%
Andorra	0%
Austria	11%
Belarus	12%
Belgium	14%
Bosnia and Herzegovina	5%

sqlzoo select in select 5

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 name from world where gdp > all (select gdp from world where continent = 'europe' and gdp is
not null)
```

Submit SQL   restore default

Correct answer

name
China
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:

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

Using correlated subqueries

```
SELECT continent, name, area FROM world x
  WHERE area =
    (SELECT max(area) FROM world y
        WHERE y.continent=x.continent
          AND population>0)
```

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

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
where name = (select min(name) from world as w
where w.continent = world.continent);
```

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

Difficult Questions That Utilize Techniques Not Covered In Prior Sections

9.

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 25000000 >= all (select population from world as
w where w.continent = world.continent)
```

Submit SQL   restore default

Marshall Islands	Oceania	56086
Micronesia, Federated States of	Oceania	101351
Nauru	Oceania	9945
New Zealand	Oceania	4538520
Palau	Oceania	20901
Papua New Guinea	Oceania	7398500
Saint Lucia	Caribbean	180000
Samoa	Oceania	187820
Solomon Islands	Oceania	581344
Tonga	Oceania	103036
Trinidad and Tobago	Caribbean	1328019
Tuvalu	Oceania	11323
Vanuatu	Oceania	264652

Three time bigger

10.

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

```
select name, continent from world
where population > all (select 3*population from world as w
where w.continent = world.continent AND
w.name != world.name)
```

Submit SQL

restore default

Correct answer

name	continent
Australia	Oceania
Brazil	South America
Russia	Eurasia

Nested SELECT Quiz