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

Exercises

Bigger than Russia

Richer than UK

Neighbours of Argentina and Australia

Between Canada and Poland

Percentages of Germany

Bigger than every country in Europe

Largest in each continent

First country of each continent (alphabetically)

Difficult Questions That Utilize Techniques Not Covered In Prior Sections

Exercises

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
United States

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')
```

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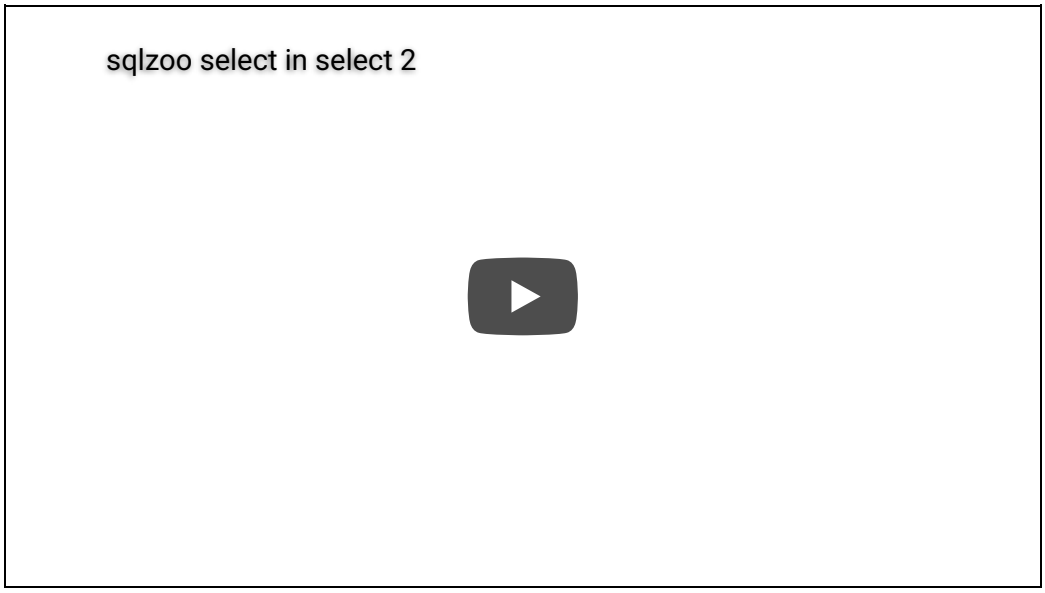
Correct answer

name
Andorra
Austria
Belgium
Denmark
Finland
France
Germany
Iceland
Ireland



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='Oceania' OR continent= 'South America'
ORDER BY name ASC
```

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
Guyana	South America

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,population 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	population
Iraq	36004552
Sudan	37289406

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.

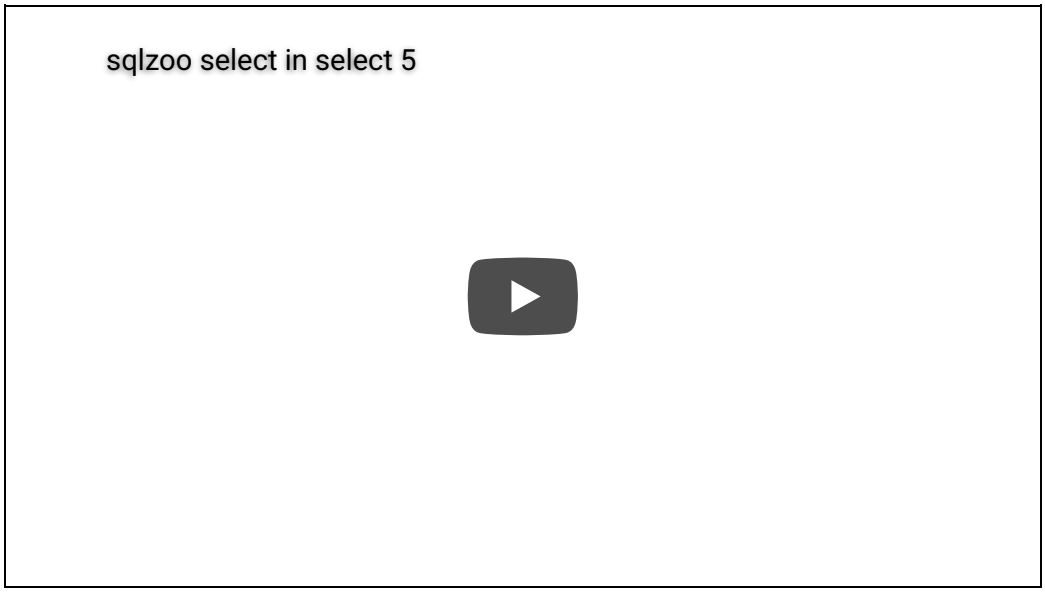
Decimal places
You can use the function ROUND to remove the decimal places.
Percent symbol %
You can use the function CONCAT to add the percentage symbol.

```
SELECT name, CONCAT(ROUND(ROUND(population/(SELECT population
FROM world WHERE name = 'Germany'), 2)*100,0), '%') FROM world
WHERE continent='Europe'
```

Submit SQL Restore default

Correct answer

name	CONCAT(ROUND(..
Albania	3%
Andorra	0%
Austria	11%
Belarus	12%
Belgium	14%
Bosnia and Herzegovina	5%
Bulgaria	9%
Croatia	5%
Czech Republic	13%



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 gdp >=0 AND
continent='Europe')
```

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:

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

Submit SQL Restore default

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

Using correlated subqueries

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 x
WHERE name <= ALL(SELECT name FROM world y WHERE y.continent =
x.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
South America	Argentina

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 x
WHERE 25000000  > ALL(SELECT population FROM world y WHERE
x.continent = y.continent AND y.population > 0)
```

Submit SQL Restore default

name	continent	population
Antigua and Barbuda	Caribbean	86295
Australia	Oceania	23545500
Bahamas	Caribbean	351461
Barbados	Caribbean	285000
Cuba	Caribbean	11167325
Dominica	Caribbean	71293
Dominican Republic	Caribbean	9445281
Fiji	Oceania	858038
Grenada	Caribbean	103328
Haiti	Caribbean	10413211
Jamaica	Caribbean	2717991
Kiribati	Oceania	106461

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 name, continent
FROM world x
WHERE population  > ALL(SELECT 3*population FROM world y WHERE
x.continent = y.continent AND y.population > 0 AND y.name !=x.name)
```

Submit SQL Restore default

Correct answer

name	continent
Australia	Oceania
Brazil	South America
Russia	Eurasia

Nested SELECT Quiz

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