

# SELECT within SELECT Tutorial

From SQLZOO

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

## Exercises

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')
```

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## Correct answer

name
Bangladesh
Brazil
China
India
Indonesia
Nigeria
Pakistan
United States

## 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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Finland
France
Germany
Iceland
Ireland
Liechtenstein
Luxembourg
Monaco
Netherlands
Norway
San Marino
Sweden
Switzerland

## 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 = (SELECT continent FROM world WHERE
name = 'Argentina') OR continent = (SELECT continent FROM
world WHERE name = 'Australia')
ORDER BY name
```

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### Correct answer

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

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')
```

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# Correct answer

name	population
Iraq	36004552
Sudan	37289406

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

Poland	48%
Portugal	13%
Romania	25%
San Marino	0%
Serbia	9%
Slovakia	7%
Slovenia	3%
Spain	58%
Sweden	12%
Switzerland	10%
Ukraine	53%
United Kingdom	79%
Vatican City	0%

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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.

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 > 0)
```

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## 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.

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)
```

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## 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

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)
```

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## 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 y.continent = x.continent AND y.population > 0)
```

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Grenada	Caribbean	103328
Haiti	Caribbean	10413211
Jamaica	Caribbean	2717991
Kiribati	Oceania	106461
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
Saint Vincent and the Grenadines	Caribbean	109991

# 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 population*3 FROM world y
WHERE y.continent = x.continent
AND y.name != x.name)
```

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## Correct answer

name	continent
Australia	Oceania
Brazil	South America
Russia	Eurasia

### Nested SELECT Quiz

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