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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

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Bigger than Russia

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
```

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```
        WHERE name='Romania')
```

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Richer than UK

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

The per capita GDP is the gdp/population
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Neighbours of Argentina and Australia

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

Between Canada and Poland

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

Percentages of Germany

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%

...   ...

You can use the function ROUND to remove the decimal places.

You can use the function CONCAT to add the percentage symbol.

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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.

Bigger than every country in Europe

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

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

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

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

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

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)

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

Difficult Questions That Utilize Techniques Not Covered In Prior Sections

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**.

Three time bigger

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

Nested SELECT Quiz

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