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## SELECT basics

Introducing the `world` table of countries

1.



The example uses a `WHERE` clause to show the population of 'France'. Note that strings (pieces of text that are data) should be in 'single quotes'.

Modify it to show the population of Germany

```
SELECT population FROM world  
WHERE name = 'Germany'
```

**Submit SQL**

**Restore default**

Correct answer

population
80716000

Scandinavia

2.



Checking a list The word `IN` allows us to check if an item is in a list. The example shows the name and population for the countries 'Brazil', 'Russia', 'India' and 'China'.

Show the name and the population for 'Sweden', 'Norway' and 'Denmark'.

```
SELECT name, population FROM world  
WHERE name IN ('Sweden', 'Norway', 'Denmark');
```

**Submit SQL**

**Restore default**

Correct answer

name	population
Denmark	5634437
Norway	5124383
Sweden	9675885

Just the right size

3.



Which countries are not too small and not too big? `BETWEEN` allows range checking (range specified is inclusive of boundary values). The example below shows countries with an area of 250,000-300,000 sq. km. Modify it to show the country and the area for countries with an area between 200,000 and 250,000.

```
SELECT name, area FROM world  
WHERE area BETWEEN 200000 AND 250000
```

**Submit SQL**

**Restore default**

Correct answer

name	area
Belarus	207600
Ghana	238533
Guinea	245857
Guyana	214969
Laos	236800
Romania	238391
Uganda	241550
United Kingdom	242900

## SELECT Quiz

1. Select the code which produces this table

name	population
Bahrain	1234571
Swaziland	1220000
Timor-Leste	1066409

```
FROM world
SELECT name, population BETWEEN 1000000 AND 1250000
```

```
FROM name, population
WHERE population BETWEEN 1000000 AND 1250000
SELECT world
```

```
SELECT name, population
FROM world
WHERE population BETWEEN 1000000 AND 1250000
```

```
SELECT population BETWEEN 1000000 AND 1250000
FROM world
```

2. Pick the result you would obtain from this code:

```
SELECT name, population
FROM world
WHERE name LIKE "Al%"
```

Table-A

Albania
Algeria

Table-B

%bania	3200000
%geria	32900000

Table-C

Al	0
----	---

Table-D

Albania	3200000
---------	---------

Table-E

✓	Albania	3200000
	Algeria	32900000

3. Select the code which shows the countries that end in A or L.

```
SELECT name FROM world  
WHERE name LIKE '%a%' AND name LIKE '%l%'
```

```
SELECT name FROM world  
WHERE name LIKE '%a%' OR name LIKE '%l%'
```

```
SELECT name FROM world  
WHERE name LIKE '%a' AND name LIKE '%l'
```

```
SELECT name FROM world  
WHERE name LIKE '%a' OR '%l'
```

```
SELECT name FROM world  
WHERE name LIKE '%a' OR name LIKE '%l'
```

4. Pick the result from the query

```
SELECT name,length(name)  
FROM world  
WHERE length(name)=5 and region='Europe'
```

name	length(name)
Benin	5
Lybia	5
Egypt	5

name	length(name)
Italy	5
Egypt	5
Spain	5

name	length(name)
Italy	5
Malta	5
Spain	5

name	length(name)
Italy	5
France	6
Spain	5

name	length(name)
Sweden	6
Norway	6

5. Here are the first few rows of the world table:

name	region	area	population	gdp
Afghanistan	South Asia	652225	26000000	
Albania	Europe	28728	3200000	6656000000
Algeria	Middle East	2400000	32900000	75012000000
Andorra	Europe	468	64000	
...				

Pick the result you would obtain from this code:

```
SELECT name, area*2 FROM world WHERE population = 64000
```

Andorra | 234

Andorra | 468

Andorra | 936

Andorra | 4680

Andorra | 936

Albania | 57456

6. Select the code that would show the countries with an area larger than 50000 and a population smaller than 10000000

```
SELECT name, area, population  
FROM world  
WHERE area < 50000 AND population < 10000000
```

```
SELECT name, area, population  
FROM world  
WHERE area < 50000 AND population > 10000000
```

```
SELECT name, area, population  
FROM world  
WHERE area > 50000 AND population < 10000000
```

```
SELECT name, area, population  
FROM world  
WHERE area > 50000 AND population > 10000000
```

```
SELECT name, area, population  
FROM world  
WHERE area = 50000 AND population = 10000000
```

7. Select the code that shows the population density of China, Australia, Nigeria and France

```
SELECT name, area/population
FROM world WHERE name IN ('China', 'Nigeria', 'France', 'Australia')
```

```
SELECT name, area/population
FROM world WHERE name LIKE ('China', 'Nigeria', 'France', 'Australia')
```

```
SELECT name, population/area
FROM world
WHERE name IN ('China', 'Nigeria', 'France', 'Australia')
```

```
SELECT name, population/area
FROM world
WHERE name LIKE ('China', 'Nigeria', 'France', 'Australia')
```

```
SELECT name, population
FROM world
WHERE name IN ('China', 'Nigeria', 'France', 'Australia')
```

## SELECT names

### Pattern Matching Strings

This tutorial uses the **LIKE** operator to check names. We will be using the SELECT command on the table **world**:

1.



You can use `WHERE name LIKE 'B%'` to find the countries that start with "B".

- The % is a *wild-card* it can match any characters

Find the country that start with Y

```
SELECT name FROM world
WHERE name LIKE 'Y%'
```

Submit SQL

Restore default

Correct answer

name
Yemen

## 2. 😊

Find the countries that end with y

```
SELECT name FROM world  
WHERE name LIKE '%y'
```

**Submit SQL**

**Restore default**

Correct answer

name
Turkey
Germany
Hungary
Italy
Norway
Vatican City
Paraguay
Uruguay

## 3. 😊

Luxembourg has an x - so does one other country. List them both.

Find the countries that contain the letter x

```
SELECT name FROM world  
WHERE name LIKE '%x%'
```

**Submit SQL**

**Restore default**

Correct answer

name
Luxembourg
Mexico

## 4. 😊

Iceland, Switzerland end with land - but are there others?

Find the countries that end with land

```
SELECT name FROM world  
WHERE name LIKE '%land'
```

**Submit SQL**

**Restore default**

Correct answer

name
Swaziland
Thailand
Finland
Iceland
Ireland
Poland
Switzerland
New Zealand

## 5. 😊

Columbia starts with a C and ends with ia - there are two more like this.

Find the countries that start with C and end with ia

```
SELECT name FROM world  
WHERE name LIKE 'c%ia'
```

**Submit SQL**

**Restore default**

Correct answer

name
Cambodia
Colombia
Croatia

## 6. 😊

Greece has a double e - who has a double o?

Find the country that has oo in the name

```
SELECT name FROM world  
WHERE name LIKE "%oo%"
```

**Submit SQL**

**Restore default**

Correct answer

name
Cameroon

## 7. 😊

Bahamas has three a - who else?

Find the countries that have three or more a in the name

```
SELECT name FROM world  
WHERE name LIKE "%aaa%"
```

**Submit SQL**

**Restore default**

Correct answer

name
Central African Republic
Equatorial Guinea
Madagascar
Mauritania
Tanzania
Afghanistan
Azerbaijan
Malaysia

## 8. 😊

India and Angola have an n as the second character. You can use the underscore as a single character wildcard.

```
SELECT name FROM world  
WHERE name LIKE "_n%"  
ORDER BY name
```

Find the countries that have "t" as the second character.

```
SELECT name FROM world  
WHERE name LIKE "_t%"  
ORDER BY name
```

**Submit SQL**

**Restore default**

Correct answer

name
Ethiopia
Italy

## 9. 😊

Lesotho and Moldova both have two o characters separated by two other characters.

Find the countries that have two "o" characters separated by two others.

```
SELECT name FROM world  
WHERE name LIKE "%o__o%"
```

**Submit SQL**

**Restore default**

Correct answer

name
Congo, Democratic Republic of
Congo, Republic of
Lesotho
Morocco
Sao Tomé and Príncipe
Mongolia
Moldova

## 10. 😊

Cuba and Togo have four characters names.

Find the countries that have exactly four characters.

```
SELECT name FROM world  
WHERE name LIKE "___"
```

**Submit SQL**

**Restore default**

Correct answer

name
Chad
Mali
Togo
Iran
Iraq
Laos
Oman
Cuba

## Harder Questions

Well done for getting this far.

The next questions are optional and only for students who are finding the basic questions too easy.

11. 😊

The capital of Luxembourg is Luxembourg. Show all the countries where the capital is the same as the name of the country

Find the country where the name is the capital city.

```
SELECT name  
      FROM world  
     WHERE name LIKE capital
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name
Djibouti
Luxembourg
San Marino
Singapore

12. 😊

The capital of Mexico is Mexico City. Show all the countries where the capital has the country together with the word "City".

Find the country where the capital is the country plus "City".

*The concat function*

```
SELECT name  
      FROM world  
     WHERE capital = concat(name, ' City')
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name
Guatemala
Kuwait
Mexico
Panama

13. 😊

Find the capital and the name where the capital includes the name of the country.

```
SELECT capital, name  
      FROM world  
     WHERE capital LIKE concat('%', name, '%')
```

[Submit SQL](#)

[Restore default](#)

capital	name
Andorra la Vella	Andorra
Djibouti	Djibouti
Guatemala City	Guatemala
Kuwait City	Kuwait
Luxembourg	Luxembourg
Mexico City	Mexico
Monaco-Ville	Monaco
Panama City	Panama
San Marino	San Marino
Singapore	Singapore

14. 😊

Find the capital and the name where the capital is an extension of name of the country.

You should include Mexico City as it is longer than Mexico. You should not include Luxembourg as the capital is the same as the country.

```
SELECT capital, name  
      FROM world  
     WHERE capital LIKE concat(name, '%') AND capital >> name
```

[Submit SQL](#)

[Restore default](#)

Correct answer

capital	name
Andorra la Vella	Andorra
Guatemala City	Guatemala
Kuwait City	Kuwait
Mexico City	Mexico
Monaco-Ville	Monaco
Panama City	Panama

15. 😊

For Monaco-Ville the name is Monaco and the extension is -Ville.

Show the name and the extension where the capital is an extension of name of the country.

You can use the SQL function REPLACE.

```
SELECT name, REPLACE(capital, name, '') AS ext  
      FROM world where capital LIKE CONCAT(name, '_%')
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name	ext
Andorra	la Vella
Guatemala	City
Kuwait	City
Mexico	City
Monaco	-Ville
Panama	City

## SELECT from World

### Introduction

1.



Read the notes about this table. Observe the result of running this SQL command to show the name, continent and population of all countries.

```
SELECT name, continent, population  
FROM world
```

**Submit SQL**

**Restore default**

### Correct answer

name	continent	population
Afghanistan	Asia	26500100
Albania	Europe	2821977
Algeria	Africa	38700000
Andorra	Europe	76098
Angola	Africa	19183590
Antigua and Barbuda	Caribbean	86295
Argentina	South America	42669500
Armenia	Eurasia	3017400

### Large Countries

2.



How to use WHERE to filter records. Show the name for the countries that have a population of at least 200 million. 200 million is 200000000, there are eight zeros.

```
SELECT name FROM world  
WHERE population >= 200000000
```

**Submit SQL**

**Restore default**

### Correct answer

name
Brazil
China
India
Indonesia
United States

### Per capita GDP

3.



Give the `name` and the `per capita GDP` for those countries with a `population` of at least 200 million.

*HELP: How to calculate per capita GDP*

```
SELECT name, gdp/population  
FROM world  
WHERE population >= 200000000
```

**Submit SQL**

**Restore default**

### Correct answer

name	gdp/population
Brazil	11115.2648
China	6121.7106
India	1504.7931
Indonesia	3482.0205
United States	51032.2945

### South America In millions

4. 😊

Show the `name` and `population` in millions for the countries of the `continent` 'South America'. Divide the population by 1000000 to get population in millions.

```
SELECT name, population/1000000
FROM world
WHERE continent = 'South America'
```

**Submit SQL**

**Restore default**

**Correct answer**

name	population/10..
Argentina	42.6695
Bolivia	10.0273
Brazil	202.7940
Chile	17.7730
Colombia	47.6620
Ecuador	15.7742
Guyana	0.7849
Paraguay	6.7834

### France, Germany, Italy

5. 😊

Show the `name` and `population` for France, Germany, Italy

```
SELECT name, population
FROM world
WHERE name in ('France', 'Germany', 'Italy')
```

**Submit SQL**

**Restore default**

**Correct answer**

name	population
France	65906000
Germany	80716000
Italy	60782668

### United

6. 😊

Show the countries which have a `name` that includes the word 'United'

```
SELECT name
FROM world
WHERE name LIKE '%united%'
```

**Submit SQL**

**Restore default**

**Correct answer**

name
United Arab Emirates
United Kingdom
United States

## Two ways to be big

7.



Two ways to be big: A country is **big** if it has an area of more than 3 million sq km or it has a population of more than 250 million.

Show the countries that are big by area or big by population. Show name, population and area.

```
SELECT name, population, area  
FROM world  
WHERE area > 3000000 OR population > 250000000
```

**Submit SQL**

**Restore default**

## Correct answer

name	population	area
Australia	23545500	7692024
Brazil	202794000	8515767
Canada	35427524	9984670
China	1365370000	9596961
India	1246160000	3166414
Indonesia	252164800	1904569
Russia	146000000	17125242
United States	318320000	9826675

## One or the other (but not both)

8.



**Exclusive OR (XOR).** Show the countries that are big by area (more than 3 million) or big by population (more than 250 million) but not both. Show name, population and area.

- Australia has a big area but a small population, it should be **included**.
- Indonesia has a big population but a small area, it should be **included**.
- China has a big population **and** big area, it should be **excluded**.
- United Kingdom has a small population and a small area, it should be **excluded**.

```
SELECT name, population, area  
FROM world  
WHERE (area > 3000000 AND population < 250000000)  
OR (area < 3000000 and population > 250000000)
```

**Submit SQL**

**Restore default**

## Correct answer

name	population	area
Australia	23545500	7692024
Brazil	202794000	8515767
Canada	35427524	9984670
Indonesia	252164800	1904569
Russia	146000000	17125242

## Rounding

9.



Show the name and population in millions and the GDP in billions for the countries of the continent 'South America'. Use the ROUND function to show the values to two decimal places.

For South America show population in millions and GDP in billions both to 2 decimal places.

*Millions and billions*

```
SELECT name, ROUND(population/1000000,2), ROUND(gdp/1000000000, 2)  
FROM world  
WHERE continent = 'South America'
```

**Submit SQL**

**Restore default**

## Correct answer

name		
Argentina	42.67	477.03
Bolivia	10.03	27.04
Brazil	202.79	2254.11
Chile	17.77	268.31
Colombia	47.66	369.81
Ecuador	15.77	87.5
Guyana	0.78	2.85
Paraguay	6.78	25.94

## Trillion dollar economies

10. 😊

Show the name and per-capita GDP for those countries with a GDP of at least one trillion (1000000000000; that is 12 zeros). Round this value to the nearest 1000.

Show per-capita GDP for the trillion dollar countries to the nearest \$1000.

```
SELECT name, round(gdp/population, -3)
FROM world
WHERE gdp >= 1000000000000
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name	round(gdp/pop..)
Australia	66000
Brazil	11000
Canada	45000
China	6000
France	40000
Germany	42000
India	2000
Italy	33000

## Name and capital have the same length

11. 😊

Greece has capital Athens.

Each of the strings 'Greece', and 'Athens' has 6 characters.

Show the name and capital where the name and the capital have the same number of characters.

- You can use the LENGTH function to find the number of characters in a string

```
SELECT name, capital
FROM world
WHERE LENGTH(name) = LENGTH(capital)
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name	capital
Algeria	Algiers
Angola	Luanda
Armenia	Yerevan
Botswana	Gaborone
Cameroon	Yaoundé
Canada	Ottawa
Djibouti	Djibouti
Egypt	Cairo

## Matching name and capital

12. 😊

The capital of Sweden is Stockholm. Both words start with the letter 'S'.

Show the name and the capital where the first letters of each match. Don't include countries where the name and the capital are the same word.

- You can use the function LEFT to isolate the first character.
- You can use <> as the NOT EQUALS operator.

```
SELECT name, capital
FROM world
WHERE (left(name,1)=left(capital,1)) AND (name<>capital)
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name	capital
Algeria	Algiers
Andorra	Andorra la Vella
Barbados	Bridgetown
Belize	Belmopan
Brazil	Brasília
Brunei	Bandar Seri Begawan
Burundi	Bujumbura
Guatemala	Guatemala City

## All the vowels

13. 😊

Equatorial Guinea and Dominican Republic have all of the vowels (a e i o u) in the name. They don't count because they have more than one word in the name.

Find the country that has all the vowels and no spaces in its name.

- You can use the phrase name NOT LIKE '%a%' to exclude characters from your results.
- The query shown misses countries like Bahamas and Belarus because they contain at least one 'a'

```
SELECT name
FROM world
WHERE name LIKE '%a%'
AND name LIKE '%e%'
AND name LIKE '%i%'
AND name LIKE '%o%'
AND name LIKE '%u%'
AND name NOT LIKE '% %'
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name
Mozambique

## BBC QUIZ

1. Select the code which gives the name of countries beginning with U

```
SELECT name  
      FROM world  
     WHERE name  
          BEGIN with U
```

```
SELECT name  
      FROM world  
     WHERE name LIKE '%U'
```

```
SELECT name  
      FROM world  
     WHERE name LIKE '%u%'
```

```
SELECT name  
      FROM world  
     WHERE name LIKE U
```

```
SELECT name  
      FROM world  
     WHERE name LIKE 'U%'
```

← → C sqlzoo.net/wiki/BBC QUIZ

2. Select the code which shows just the population of United Kingdom?

```
SELECT population  
      FROM 'United Kingdom'
```

```
SELECT name  
      FROM world  
     WHERE population = 'United Kingdom'
```

```
SELECT FROM world  
     WHERE population IN 'United Kingdom'
```

```
SELECT population  
      FROM world  
     WHERE name = 'United Kingdom'
```

```
SELECT population  
      FROM world  
     WHERE 'United Kingdom' IN name
```

3. Select the answer which shows the problem with this SQL code - the intended result should be the continent of France:

```
SELECT continent  
FROM world  
WHERE 'name' = 'France'
```

continent should be 'continent'

'name' should be name

'France' should be "France"

'France' should be France

= should be IN

4. Select the result that would be obtained from the following code:

```
SELECT name, population / 10  
FROM world  
WHERE population < 10000
```

Andorra	6400
Nauru	990

Andorra	64000
Nauru	9900

Nauru 99

Nauru 990

Nauru 9900

5. Select the code which would reveal the name and population of countries in Europe and Asia

```
SELECT name  
FROM world  
WHERE continent IN ('Europe', 'Asia')
```

```
SELECT name, population  
FROM world  
WHERE continent IN ('Europe', 'Asia')
```

```
SELECT name, population  
FROM world  
WHERE name IN (Europe Asia)
```

```
SELECT name, population  
FROM world  
WHERE name IS ('Europe', 'Asia')
```

```
SELECT name, population  
FROM world  
WHERE continent = ('Europe', 'Asia')
```

6. Select the code which would give two rows

```
SELECT name FROM world  
WHERE name = 'Cuba'
```

```
SELECT name FROM world  
WHERE name = 'Cuba'  
AND name = 'Togo'
```

```
SELECT name FROM world  
WHERE name EITHER ('Cuba', 'Togo')
```

```
SELECT name FROM world  
WHERE name IN ('Cuba', 'Togo')
```

```
SELECT name FROM WHERE name IS 'Mali'
```

7. Select the result that would be obtained from this code:

```
SELECT name FROM world  
WHERE continent = 'South America'  
AND population > 40000000
```

Afghanistan  
Brazil  
Colombia

Brazil

Brazil  
Colombia

Brazil	South America
Colombia	South America

Brazil	182800000
Colombia	45600000

**Score the test**

Your score is: 7 out of 7

**SELECT from Nobel**

## nobel | Nobel Laureates

We continue practicing simple SQL queries on a single table.

This tutorial is concerned with a table of Nobel prize winners:

```
nobel(yr, subject, winner)
```

Using the `SELECT` statement.

### Winners from 1950

1.



Change the query shown so that it displays Nobel prizes for 1950.

```
SELECT yr, subject, winner  
FROM nobel  
WHERE yr = 1950
```

[Submit SQL](#)

[Restore default](#)

### Correct answer

yr	subject	winner
1950	Chemistry	Kurt Alder
1950	Chemistry	Otto Diels
1950	Literature	Bertrand Russell
1950	Medicine	Philip S. Hench
1950	Medicine	Edward C. Kendall
1950	Medicine	Tadeus Reichstein
1950	Peace	Ralph Bunche
1950	Physics	Cecil Powell

2.



Show who won the 1962 prize for literature.

```
SELECT winner  
FROM nobel  
WHERE yr = 1962  
AND subject = 'literature'
```

[Submit SQL](#)

[Restore default](#)

### Correct answer

winner
John Steinbeck

### Albert Einstein

3.



Show the year and subject that won 'Albert Einstein' his prize.

```
SELECT yr, subject  
FROM nobel  
WHERE winner = 'Albert Einstein'
```

[Submit SQL](#)

[Restore default](#)

### Correct answer

yr	subject
1921	Physics

## Recent Peace Prizes

4. 😊

Give the name of the 'peace' winners since the year 2000, including 2000.

```
SELECT winner
FROM nobel
WHERE subject = 'Peace' AND yr >= 2000
```

**Submit SQL**

**Restore default**

**Correct answer**

winner
Tunisian National Dialogue Quartet
Kailash Satyarthi
Malala Yousafzai
European Union
Ellen Johnson Sirleaf
Leymah Gbowee
Tawakel Karman
Liu Xiaobo
Barack Obama

## Literature in the 1980's

5. 😊

Show all details (**yr, subject, winner**) of the literature prize winners for 1980 to 1989 inclusive.

```
SELECT yr, subject, winner
FROM nobel
WHERE (yr >= 1980 AND yr <= 1989) AND subject = 'Literature'
```

**Submit SQL**

**Restore default**

**Correct answer**

yr	subject	winner
1989	Literature	Camilo José Cela
1988	Literature	Naguib Mahfouz
1987	Literature	Joseph Brodsky
1986	Literature	Wole Soyinka
1985	Literature	Claude Simon
1984	Literature	Jaroslav Seifert
1983	Literature	William Golding
1982	Literature	Gabriel García Márquez
1981	Literature	Elie Wiesel

## Only Presidents

6. 😊

Show all details of the presidential winners:

- Theodore Roosevelt
- Thomas Woodrow Wilson
- Jimmy Carter
- Barack Obama

```
SELECT * FROM nobel
WHERE winner IN ('Theodore Roosevelt', 'Woodrow Wilson', 'Jimmy Carter', 'Barack Obama')
```

**Submit SQL**

**Restore default**

John

7. 😊

Show the winners with first name John

```
SELECT winner
FROM nobel
WHERE winner LIKE 'john%'
```

**Submit SQL**

**Restore default**

**Correct answer**

yr	subject	winner
2009	Peace	Barack Obama
2002	Peace	Jimmy Carter
1919	Peace	Woodrow Wilson
1906	Peace	Theodore Roosevelt

## Chemistry and Physics from different years

8. 😊

Show the year, subject, and name of physics winners for 1980 together with the chemistry winners for 1984.

```
SELECT * FROM nobel
WHERE (subject = "Physics" AND yr = '1980') OR (subject = 'Chemistry' AND yr = 1984)
```

**Submit SQL**

**Restore default**

**Correct answer**

yr	subject	winner
1984	Chemistry	Bruce Merrifield
1980	Physics	James Cronin
1980	Physics	Val Fitch

## Exclude Chemists and Medics

9. 😊

Show the year, subject, and name of winners for 1980 excluding chemistry and medicine

```
SELECT * FROM nobel  
WHERE yr = 1980 AND subject NOT IN ('Chemistry', 'Medicine')
```

[Submit SQL](#)

[Restore default](#)

Correct answer

yr	subject	winner
1980	Economics	Lawrence R. Klein
1980	Literature	Czeslaw Miłosz
1980	Peace	Adolfo Pérez Esquivel
1980	Physics	James Cronin
1980	Physics	Val Fitch

Early Medicine, Late Literature

10. 😊

Show year, subject, and name of people who won a 'Medicine' prize in an early year (before 1910, not including 1910) together with winners of a 'Literature' prize in a later year (after 2004, including 2004)

```
SELECT * FROM nobel  
WHERE (subject = 'Medicine' AND yr < 1910) OR (subject = 'Literature' AND yr >= 2004)
```

[Submit SQL](#)

[Restore default](#)

Correct answer

yr	subject	winner
2015	Literature	Svetlana Alexievich
2014	Literature	Patrick Modiano
2013	Literature	Alice Munro
2012	Literature	Mo Yan
2011	Literature	Tomas Tranströmer
2010	Literature	Mario Vargas Llosa
2009	Literature	Herta Müller
2008	Literature	Jean-Marie Gustave Le Clézio

Harder Questions

Umlaut

11. 😊

Find all details of the prize won by PETER GRÜNBERG

Non-ASCII characters

```
SELECT * FROM nobel  
WHERE winner LIKE 'peter gr%nberg'
```

[Submit SQL](#)

[Restore default](#)

Correct answer

yr	subject	winner
2007	Physics	Peter Grünberg

Apostrophe

12. 😊

Find all details of the prize won by EUGENE O'NEILL

Escaping single quotes

```
SELECT * FROM nobel  
WHERE winner = 'Eugene O''Neill'
```

[Submit SQL](#)

[Restore default](#)

Correct answer

yr	subject	winner
1936	Literature	Eugene O'Neill

## Knights of the realm

13. 😊

Knights in order

List the winners, year and subject where the winner starts with Sir. Show the the most recent first, then by name order.

```
SELECT winner, yr, subject
FROM nobel
WHERE winner LIKE 'Sir%'
ORDER BY yr DESC, winner
```

**Submit SQL**

**Restore default**

Correct answer

winner	yr	subject
Sir Martin J. Evans	2007	Medicine
Sir Peter Mansfield	2003	Medicine
Sir Paul Nurse	2001	Medicine
Sir Harold Kroto	1996	Chemistry
Sir James W. Black	1988	Medicine
Sir Arthur Lewis	1979	Economics
Sir Nevill F. Mott	1977	Physics
Sir Bernard Katz	1970	Medicine

Chemistry and Physics last

14. 😊

The expression `subject IN ('chemistry','physics')` can be used as a value - it will be 0 or 1.

Show the 1984 winners and subject ordered by subject and winner name; but list chemistry and physics last.

```
SELECT winner, subject
FROM nobel
WHERE yr=1984
ORDER BY subject IN ('Chemistry','Physics'), subject, winner
```

**Submit SQL**

**Restore default**

Correct answer

winner	subject
Richard Stone	Economics
Jaroslav Seifert	Literature
César Milstein	Medicine
Georges J.F. Köhler	Medicine
Niels K. Jerne	Medicine
Desmond Tutu	Peace
Bruce Merrifield	Chemistry
Carlo Rubbia	Physics

## SELECT with SELECT

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 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
France
Germany
Iceland

## 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
Fiji	Oceania

## 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 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(( 100* population /
(select population from world where name = 'Germany')),0),'%')
as percent from world where continent='Europe'
```

[Submit SQL](#)

[Restore default](#)

Result:

name	percent
Albania	3%
Andorra	0%
Austria	11%
Belarus	12%
Belgium	14%
Bosnia and Herzegovina	5%
Bulgaria	9%
Croatia	5%
<b>Overall Result</b>	100%

## 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')
AND continent != 'Europe'
```

[Submit SQL](#)

[Restore default](#)

Correct answer

name
China
Japan
United States

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](#)

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](#)

Correct answer

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

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 x
WHERE population > ALL(SELECT population*3 FROM world y WHERE x.continent =
y.continent AND 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

1. Select the code that shows the name, region and population of the smallest country in each region

```
SELECT region, name, FROM bbc x WHERE population <= ALL (SELECT population FROM bbc y WHERE y.region=x.region AND population>0)
```

```
SELECT region, name, population FROM bbc WHERE population <= ALL (SELECT population FROM bbc WHERE population>0)
```

```
SELECT region, name, population FROM bbc x WHERE population <= ALL (SELECT population FROM bbc y WHERE y.region=x.region AND population>0)
```

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

```
SELECT region, name, population FROM bbc x WHERE population <= ALL (SELECT population FROM bbc y WHERE y.region=x.region AND population<0)
```

2. Select the code that shows the countries belonging to regions with all populations over 50000

```
SELECT name,region,population FROM bbc x WHERE 50000 < ALL (SELECT population FROM bbc y WHERE population>0)
```

```
SELECT name,region,population FROM bbc x WHERE 50000 < ALL (SELECT population FROM bbc y WHERE x.region=y.region AND y.population>0)
```

```
SELECT name,region,population FROM bbc x WHERE 50000 = ALL (SELECT population FROM bbc y WHERE x.region=y.region AND y.population>0)
```

```
SELECT name,region,population FROM bbc x WHERE 50000 > ALL (SELECT population FROM bbc y WHERE x.region=y.region AND y.population>0)
```

```
SELECT name,region,population FROM bbc x WHERE 50000 < ALL (SELECT population FROM bbc y WHERE x.region=y.region AND y.population>0)
```

3. Select the code that shows the countries with a less than a third of the population of the countries around it

```
SELECT name, region FROM bbc x  
WHERE population < ALL (SELECT population/3 FROM bbc y WHERE y.region = x.region AND y.name != x.name)
```

```
SELECT name, region FROM bbc x  
WHERE population = ALL (SELECT population/3 FROM bbc y WHERE y.region = x.region AND y.name != x.name)
```

```
SELECT name, region FROM bbc x  
WHERE population > ALL (SELECT population/3 FROM bbc y WHERE y.region = x.region AND y.name != x.name)
```

```
SELECT name, region FROM bbc x WHERE population < ALL (SELECT population*3 FROM bbc y WHERE y.region = x.region AND y.name != x.name)
```

```
SELECT name, region FROM bbc x WHERE population < ALL (SELECT population/3 FROM bbc y WHERE y.name != x.name)
```

4. Select the result that would be obtained from the following code:

```
SELECT name FROM bbc
WHERE population >
    (SELECT population
     FROM bbc
     WHERE name='United Kingdom')
AND region IN
    (SELECT region
     FROM bbc
     WHERE name = 'United Kingdom')
```

Table-A

Andorra
Albania
Austria
Bulgaria

Table-B

France	Europe
Germany	Europe
Russia	Europe
Turkey	Europe

Table-C

France
Germany
Andorra
Albania

Table-D

✓ France
Germany
Russia
Turkey

Table-E

France
Germany
Russia
Turkey
Brazil
United States of USA
Canada

5. Select the code that would show the countries with a greater GDP than any country in Africa (some countries may have NULL gdp values).

```
SELECT name FROM bbc  
WHERE gdp > ALL (SELECT MAX(gdp) FROM bbc WHERE region = 'Africa' AND gdp=0)
```

```
SELECT name FROM bbc  
WHERE gdp > (SELECT MAX(gdp) FROM bbc WHERE region = 'Africa')
```

```
SELECT name FROM bbc  
WHERE gdp > ALL (SELECT MIN(gdp) FROM bbc WHERE region = 'Africa')
```

```
SELECT name FROM bbc  
WHERE gdp > ALL (SELECT gdp FROM bbc WHERE region = 'Africa')
```

```
SELECT name FROM bbc  
WHERE gdp > ALL (SELECT gdp FROM bbc WHERE region = 'Africa' AND gdp<>NULL)
```

6. Select the code that shows the countries with population smaller than Russia but bigger than Denmark

```
SELECT name FROM bbc
WHERE population < (SELECT population FROM bbc WHERE name='Denmark')
AND population > (SELECT population FROM bbc WHERE name='Russia')
```

```
SELECT name FROM bbc
WHERE population < (SELECT population FROM bbc WHERE name='Russia')
AND population > (SELECT population FROM bbc WHERE name='Denmark')
```

```
SELECT name FROM bbc
WHERE population = (SELECT population FROM bbc WHERE name='Russia')
AND population > (SELECT population FROM bbc WHERE name='Denmark')
```

```
SELECT name FROM bbc
WHERE population > (SELECT population FROM bbc WHERE name='Russia')
AND population > (SELECT population FROM bbc WHERE name='Denmark')
```

```
SELECT name FROM bbc
WHERE population < (SELECT population FROM bbc WHERE name='Russia'
AND population > (SELECT population FROM bbc WHERE name='Denmark'))
```

7. >Select the result that would be obtained from the following code:

```
SELECT name FROM bbc
WHERE population > ALL
(SELECT MAX(population)
FROM bbc
WHERE region = 'Europe')
AND region = 'South Asia'
```

Table-A

Afghanistan
Bhutan
Nepal
Sri Lanka
The Maldives

Table-B

Bangladesh
India
Pakistan

Table-C

China
India

## SUM and COUNT

Total world population

1.



Show the total **population** of the world.

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

```
SELECT SUM(population)  
FROM world
```

**Submit SQL**

**Restore default**

Correct answer

SUM(populatio..
7118632738

List of continents

2.



List all the continents - just once each.

```
SELECT DISTINCT(continent)  
FROM world
```

**Submit SQL**

**Restore default**

Correct answer

continent
Africa
Asia
Caribbean
Eurasia
Europe
North America
Oceania
South America

GDP of Africa

3.



Give the total GDP of Africa

```
SELECT SUM(gdp)  
FROM world  
WHERE continent = 'Africa'
```

Correct answer

SUM(gdp)
1811788000000

Count the big countries

4.



How many countries have an **area** of at least 1000000

```
SELECT COUNT(name)
FROM world
WHERE area >= 1000000
```

**Submit SQL**

**Restore default**

Correct answer

COUNT(name)
-------------

29
----

Baltic states population

5.



What is the total **population** of ('Estonia', 'Latvia', 'Lithuania')

```
SELECT SUM(population)
FROM world
WHERE name IN ('Estonia', 'Latvia', 'Lithuania')
```

**Submit SQL**

**Restore default**

Correct answer

SUM(populatio..
-----------------

6251750
---------

Using GROUP BY and HAVING

You may want to look at these examples: Using GROUP BY and HAVING.

Counting the countries of each continent

6.



For each **continent** show the **continent** and number of countries.

```
SELECT continent, COUNT(name)
FROM world
GROUP BY continent
```

**Submit SQL**

**Restore default**

Correct answer

continent	COUNT(name)
Africa	53
Asia	47
Caribbean	11
Eurasia	2
Europe	44
North America	11
Oceania	14
South America	13

## Counting big countries in each continent

7.



For each **continent** show the **continent** and number of countries with populations of at least 10 million.

```
SELECT continent, COUNT(name)
FROM world
WHERE population >= 10000000
GROUP BY continent
```

**Submit SQL**

**Restore default**

### Correct answer

continent	COUNT(name)
Africa	29
Asia	26
Caribbean	2
Eurasia	1
Europe	14
North America	4
Oceania	1
South America	8

## Counting big continents

8.



List the continents that **have** a total population of at least 100 million.

```
SELECT continent
FROM world
GROUP BY continent
HAVING SUM(population) > 100000000
```

**Submit SQL**

**Restore default**

### Correct answer

continent
Africa
Asia
Eurasia
Europe
North America
South America

## SUM and COUNT Quiz

1. Select the statement that shows the sum of population of all countries in 'Europe'

```
SELECT name, population FROM bbc WHERE region = 'Europe'
```

```
SELECT population FROM bbc WHERE region = 'Europe' SUM BY region
```

```
SELECT SUM(population) FROM bbc WHERE region = 'Europe'
```

```
SELECT SUM(population FROM bbc WHERE region = 'Europe')
```

```
SUM population FROM bbc WHERE region = 'Europe'
```

2. Select the statement that shows the number of countries with population smaller than 150000

`SELECT COUNT(name) FROM bbc WHERE population < 150000`

`SELECT COUNT(population < 150000) FROM bbc`

`SELECT name FROM bbc WHERE population < 150000`

`SELECT population AS COUNT FROM bbc WHERE population < 150000`

`SELECT SUM() FROM bbc WHERE population < 150000`

3. Select the list of core SQL aggregate functions

`AVG(), COUNT(), FIRST(), LAST(), SUM()`

`AVG(), COUNT(), MAX(), MEDIAN(), MIN(), ROUND(), SUM()`

`AVG(), COUNT(), CONCAT(), FIRST(), LAST(), MAX(), MIN(), SUM()`

`AVG(), COUNT(), MAX(), MIN(), SUM()`

`COUNT(), SUM()`

4. Select the result that would be obtained from the following code:

```
SELECT region, SUM(area)
  FROM bbc
 WHERE SUM(area) > 15000000
 GROUP BY region
```

Table-A

Europe	17000000
--------	----------

Table-B

Europe	17000000
Asia-Pacific	23460000
North America	21660000

Table-C

Europe
Asia-Pacific
North America

No result due to invalid use of the GROUP BY function

 No result due to invalid use of the WHERE function

5. Select the statement that shows the average population of 'Poland', 'Germany' and 'Denmark'

```
SELECT AVG(population) FROM bbc WHERE name = ('Poland', 'Germany', 'Denmark')
```

```
SELECT AVG(population) FROM bbc WHERE name IN ('Poland', 'Germany', 'Denmark')
```

```
SELECT AVG(population) FROM bbc WHERE name LIKE ('Poland', 'Germany', 'Denmark')
```

```
SELECT AVG(population) FROM bbc WHERE name LIKE (Poland, Germany, Denmark)
```

```
SELECT population FROM bbc WHERE name IN ('Poland', 'Germany', 'Denmark')
```

6. Select the statement that shows the medium population density of each region

```
SELECT region, AVG(population/area) AS density FROM bbc
```

```
SELECT region, COUNT(population)/COUNT(area) AS density FROM bbc GROUP BY region
```

```
SELECT region, SUM(population)/COUNT(area) AS density FROM bbc GROUP BY region
```

```
SELECT region, SUM(population)/SUM(area) AS density FROM bbc HAVING region
```

```
SELECT region, SUM(population)/SUM(area) AS density FROM bbc GROUP BY region
```

7. Select the statement that shows the name and population density of the country with the largest population

```
SELECT name, density AS population/area FROM bbc WHERE population = MAX(population)
```

```
SELECT name, density AS population/area FROM bbc WHERE population = (SELECT MAX(population) FROM bbc)
```

```
SELECT name, MAX (population) FROM bbc WHERE population / (SELECT area FROM bbc)
```

```
SELECT name, population/area AS density FROM bbc WHERE population = (SELECT MAX(population) FROM bbc)
```

```
SELECT name, population/area AS density FROM bbc WHERE population > (SELECT MAX(population) FROM bbc)
```

8. Pick the result that would be obtained from the following code:

```
SELECT region, SUM(area)
  FROM bbc
 GROUP BY region
 HAVING SUM(area)<= 20000000
```

Table-A

732240
13403102
17740392
4943771

Table-B

Africa	22550927
Asia-Pacific	28759578
Europe	23866987
North America	21660000

Table-C

Africa
Asia-Pacific
Europe
North America

Table-D

Americas	732240
Middle East	13403102
South America	17740392
South Asia	9437710

## SUM and COUNT functions

The nobel table can be used to practice more SUM and COUNT functions.

Language: English • 日本語 • 中文

### Nobel Prizes: Aggregate functions

This tutorial concerns aggregate functions such as COUNT, SUM and AVG.

#### Exercises

Using MAX, AVG, DISTINCT and ORDER BY

1.



Show the total number of prizes awarded.

```
SELECT COUNT(winner) FROM nobel
```

**Submit SQL**

**Restore default**

Correct answer

COUNT(winner)
895

2.



List each subject - just once

```
SELECT DISTINCT subject  
FROM nobel
```

**Submit SQL**

**Restore default**

Correct answer

subject
Chemistry
Economics
Literature
Medicine
Peace
Physics

3.



Show the total number of prizes awarded for Physics.

```
nobel(yr, subject, winner)
```

```
SELECT COUNT(*)  
FROM nobel  
WHERE subject='Physics'
```

**Submit SQL**

**Restore default**

Correct answer

COUNT(*)
201

Using GROUP BY and HAVING.

## 4. 😊

For each subject show the subject and the number of prizes.

```
nobel(yr,subject, winner)
```

```
SELECT subject, COUNT(*)  
FROM nobel  
GROUP BY subject
```

Submit SQLRestore default

### Correct answer

subject	COUNT(*)
Chemistry	172
Economics	76
Literature	112
Medicine	209
Peace	125
Physics	201

## 5. 😊

For each subject show the first year that the prize was awarded.

```
nobel(yr, subject, winner)
```

```
SELECT subject,MIN(yr)  
FROM nobel  
GROUP BY subject
```

Submit SQLRestore default

### Correct answer

subject	MIN(yr)
Chemistry	1901
Economics	1969
Literature	1901
Medicine	1901
Peace	1901
Physics	1901

## 6. 😊

For each subject show the number of prizes awarded in the year 2000.

```
nobel(yr, subject, winner)
```

```
SELECT subject, COUNT(winner)  
FROM nobel  
WHERE yr=2000  
GROUP BY subject
```

### Correct answer

subject	COUNT(winner)
Chemistry	3
Economics	2
Literature	1
Medicine	3
Peace	1
Physics	3

7. 😊

Show the number of different winners for each subject.

```
nobel(yr, subject, winner)
```

```
SELECT DISTINCT subject, COUNT(DISTINCT winner)
FROM nobel
GROUP BY subject
```

**Submit SQL**

**Restore default**

**Correct answer**

subject	COUNT(DISTINCT winner)
Chemistry	171
Economics	76
Literature	112
Medicine	209
Peace	123
Physics	200

8. 😊

For each subject show how many years have had prizes awarded.

```
nobel(yr, subject, winner)
```

```
SELECT subject, COUNT(DISTINCT yr)
FROM nobel
GROUP BY subject
```

Using HAVING.

9. 😊

Show the years in which three prizes were given for Physics.

```
nobel(yr, subject, winner)
```

```
SELECT yr FROM nobel
WHERE subject='Physics'
GROUP BY yr
HAVING COUNT(yr)=3
```

**Submit SQL**

**Restore default**

**Correct answer**

subject	COUNT(DISTINCT yr)
Chemistry	107
Economics	47
Literature	108
Medicine	106
Peace	92
Physics	109

**Correct answer**

yr
2014
2011
2009
2008
2005
2004
2003
2002
2001

## 10. 😊

Show winners who have won more than once.

```
nobel(yr, subject, winner)
```

```
SELECT winner FROM nobel
GROUP BY winner
HAVING COUNT(winner)>1
```

**Submit SQL**

**Restore default**

### Correct answer

winner
Frederick Sanger
John Bardeen
International Committee of the Red Cross
Linus Pauling
Marie Curie

## 11. 😊

Show winners who have won more than one subject.

```
nobel(yr, subject, winner)
```

```
SELECT winner FROM nobel
GROUP BY winner
HAVING COUNT(DISTINCT subject) > 1
```

GROUP BY yr, subject

### Correct answer

winner
Linus Pauling
Marie Curie

## 12. 😊

Show the year and subject where 3 prizes were given. Show only years 2000 onwards.

```
nobel(yr, subject, winner)
```

```
SELECT yr, subject
FROM nobel
WHERE yr>=2000
GROUP BY yr, subject
HAVING COUNT(*)=3
```

**Submit SQL**

**Restore default**

### Correct answer

yr	subject
2015	Chemistry
2014	Chemistry
2014	Medicine
2014	Physics
2013	Chemistry
2013	Economics
2013	Medicine
2011	Medicine
.....	.....