

# MANUAL LMD SQL

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## SELECT basics

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### 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 area that are data) should be in 'single quotes'.

Modify it to show the population of Germany.

Código:

```
select population from world where name = 'France';
```

Corrección:

```
select population from world where name='Germany';
```

Correct answer	
population	
80716000	

---

### Scandinavia

2. Checking a list with 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'.

Código:

```
select name, population from world where name in ('Brazil', 'Russia', 'India', 'China');
```

Corrección:

```
select name, population from world where name in('Sweden', 'Norway', 'Denmark');
```

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.

Código:

```
select name, area from world where area between 250000 and 300000;
```

Corrección:

```
select name, area from world where area between 200000 and 250000;
```

Correct answer	
name	area
Belarus	207600
Ghana	238533
Guinea	245857
Guyana	214969
Laos	236800
Romania	238391
Uganda	241550

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### SELECT basics - quiz

1. Select the code which produces this table:

name	population
Bahrain	1234571
Swaziland	1220000
Timor-Leste	1066409

Respuesta:



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

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

```
select name, population from world where name like "A1%"
```

Respuesta:



Table-E	
Albania	3200000
Algeria	32900000

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

Respuesta:




```
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';
```

Respuesta:



name	length(name)
Italy	5
Malta	5
Spain	5

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;
```

Respuesta:



Andorra	936
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6. Select the code that would show the countries with an area larger than 50000 and a population smaller than 10000000.


Respuesta:



```
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.

Respuesta:



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

---

## SELECT from world

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### Introduction

1. Observe the result of running this SQL command to show the name, continent and population of all countries.

Código:

```
select name, continent, population from world;
```

Corrección (es lo mismo):

```
select name, continent, population from world;
```

### Correct answer

name	continent	population
Afghanistan	Asia	25500100
Albania	Europe	2821977
Algeria	Africa	38700000
Andorra	Europe	76098
Angola	Africa	19183590
Antigua and Barbuda	Caribbean	86295
Argentina	South America	42669500

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### Large Countries

2. Show the name for the countries that have a population of at least 200 million. 200 million is 200000000, there are eight zeros.

Código:

```
select name from world where population=64105700;
```

Corrección:

```
select name from world where population>=200000000;
```

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.

Respuesta:

```
select name, gdp/population from world where population>=200000000;
```

Correct answer	
name	
Brazil	11115.264751422625
China	6121.710598592322
India	1504.793124478397
Indonesia	3482.020488188676
United States	51032.29454636844

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### 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.

Respuesta:

```
select name, population/1000000 from world where continent='South America';
```

## Correct answer

name	
Argentina	42.6695
Bolivia	10.027254
Brazil	202.794
Chile	17.773
Colombia	47.662
Ecuador	15.7742
Guyana	0.784894

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**France, Germany, Italy**

**5. Show the `name` and `population` for France, Germany, Italy.**

Respuesta:

```
select name, population from world where name in('France', 'Germany', 'Italy');
```

## Correct answer

name	population
France	65906000
Germany	80716000
Italy	60782668

---

**United**

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

Respuesta:

```
select name from world where name like '%United%';
```

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.**

Respuesta:

```
select name, population, area from world where area>3000000 or  
population>250000000;
```

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

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### 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.**

Respuesta:

```
select name, population, area from world where (area>3000000 and  
population<250000000) or (area<3000000 and population>250000000);
```



## 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.

Respuesta:

```
select name, round(population/1000000, 2), round(gdp/1000000000, 2) from world
where continent='South America';
```

## 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

## 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.

Respuesta:

```
select name, round(gdp/population, -3) from world where gdp>1000000000000;
```

### Correct answer

name	
Australia	66000
Brazil	11000
Canada	45000
China	6000
France	40000
Germany	42000
India	2000

### 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.

Respuesta:

```
-- La función LENGTH hay que cambiarla por LEN
```

```
select name, len(name), capital, len(capital) from world where  
len(name)=len(capital);
```

### Result:

name		capital	
Algeria	7	Algiers	7
Angola	6	Luanda	6
Armenia	7	Yerevan	7
Botswana	8	Gaborone	8
Canada	6	Ottawa	6
Djibouti	8	Djibouti	8
Egypt	5	Cairo	5

### 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.**

Respuesta:

```
select name, capital from world where left(name, 1)=left(capital, 1) and name<>capital;
```

### Correct answer

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

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### 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.**

Respuesta:

```
select name from world where name not like '% %' and name like '%a%' and name like '%e%' and name like '%i%' and name like '%o%' and name like '%u%';
```

### Correct answer

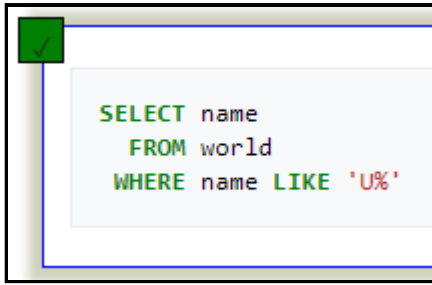
name
Mozambique

---

### SELECT from world - quiz

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

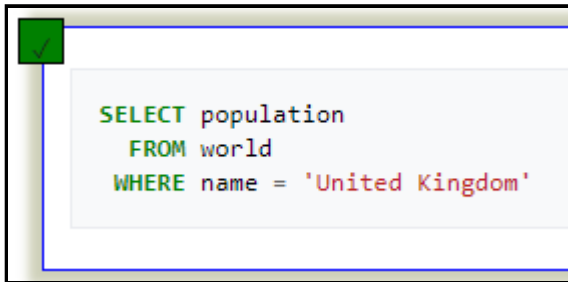
Respuesta:



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

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

Respuesta:

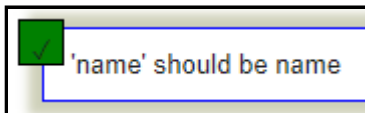


```
SELECT population
FROM world
WHERE name = 'United Kingdom'
```

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';
```

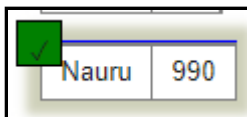
Respuesta:



```
'name' should be name
```

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

```
select name, population/10 from world where population<10000;
```



Nauru	990
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5. Select the code which would reveal the name and population of countries in Europe and Asia.

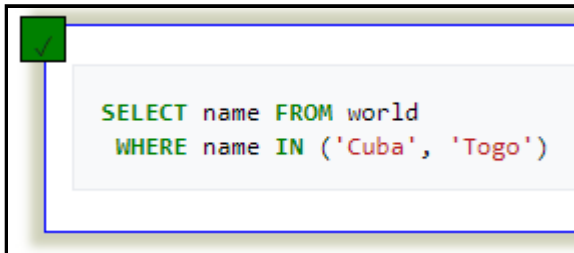
Respuesta:



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

6. Select the code which would give two rows.

Respuesta:

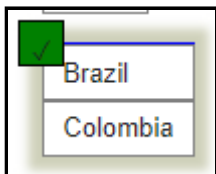


```
SELECT name FROM world
WHERE name IN ('Cuba', 'Togo')
```

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

```
select name from world where continent='South America' and population>40000000;
```

Respuesta:



Brazil
Colombia

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## SELECT from nobel

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### Winners from 1950

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

Código:

```
select yr, subject, winner from nobel where yr=1960;
```

Corrección:

```
select yr, subject, winner from nobel where yr=1950;
```

## Correct answer

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

---

## 1962 Literature

2. Show who won the 1962 prize for literature.

Código:

```
select winner from nobel where yr=1960 and subject='physics';
```

Corrección:

```
select winner from nobel where yr=1962 and subject='literature';
```

## Correct answer

winner
John Steinbeck

---

## Albert Einstein

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

Respuesta:

```
select yr, subject from nobel where winner like 'Albert Einstein';
```

## Correct answer

yr	subject
1921	Physics

---

### Recent Peace Prizes

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

Respuesta:

```
select winner from nobel where subject like 'peace' and yr>=2000;
```

## Correct answer

winner
Kim Dae-jung
Kofi Annan
United Nations
Jimmy Carter
Shirin Ebadi
Wangari Maathai
International Atomic Energy Agency

---

### Literature in the 1980's

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

Respuesta:

```
select * from nobel where subject like 'literature' and yr>=1980 and yr<=1989;
```

## Correct answer

yr	subject	winner
1980	Literature	Czeslaw Milosz
1981	Literature	Elias Canetti
1982	Literature	Gabriel García Márquez
1983	Literature	William Golding
1984	Literature	Jaroslav Seifert
1985	Literature	Claude Simon
1986	Literature	Wole Soyinka

### Only Presidents

**6. Show all details of the presidential winners: Theodore Roosevelt, Thomas Woodrow Wilson, Jimmy Carter and Barack Obama.**

**Código:**

```
select * from nobel where yr=1970 and subject in('cooking', 'chemistry', 'literature');
```

Corrección:

```
-- El nombre completo de Woodrow Wilson no funciona, hay que quitar Thomas  
select * from nobel where winner in('Theodore Roosevelt', 'Woodrow Wilson', 'Jimmy Carter', 'Barack Obama');
```

## Correct answer

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

### John

**7. Show the winners with first name John.**



Respuesta:

```
select winner from nobel where winner like 'John%';
```

### Correct answer

winner
John Macleod
John Galsworthy
John H. Northrop
John R. Mott
John Cockcroft
John F. Enders
John Bardeen

---

### 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.**

Respuesta:

```
select * from nobel where (subject like 'physics' and yr=1980) or (subject like 'chemistry' and yr=1984);
```

### Correct answer

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

---

### Exclude Chemists and Medics

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

Respuesta:

```
select * from nobel where subject not in('chemistry', 'medicine') and yr=1980;
```

## Correct answer

yr	subject	winner
1980	Economics	Lawrence R. Klein
1980	Literature	Czeslaw Milosz
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).

Respuesta:

```
select * from nobel where (subject like 'medicine' and yr<1910) or (subject like 'literature' and yr>=2004);
```

## Correct answer

yr	subject	winner
1901	Medicine	Emil von Behring
1902	Medicine	Ronald Ross
1903	Medicine	Niels Ryberg Finsen
1904	Medicine	Ivan Pavlov
1905	Medicine	Robert Koch
1906	Medicine	Camillo Golgi
1906	Medicine	Santiago Ramón y Cajal

## Umlaut

11. Find all details of the prize won by Peter Grünberg.

Respuesta:

```
select * from nobel where winner like 'Peter Grünberg';
```

## Correct answer

yr	subject	winner
2007	Physics	Peter Grünberg

---

## Apostrophe

### 12. Find all details of the prize won by Eugene O'Neill.

Respuesta:

```
select * from nobel where winner like 'Eugene O''Neill';
```

## Correct answer

yr	subject	winner
1936	Literature	Eugene O'Neill