

# 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       |  |

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### 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    |

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### 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 |
|---------|-----|

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')
```

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## 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  |  |

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### 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   |

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**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        |  |

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## 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           |

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:

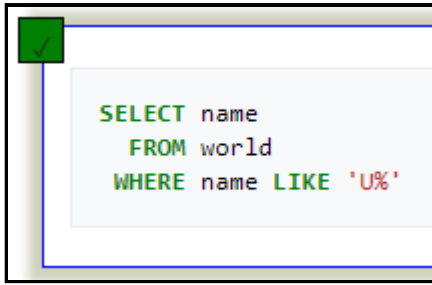
```
select name from world where name not like '% %' and name like '%a%' and name like '%e%' and name like '%i%' and name like '%o%' and name like '%u%';
```

| Correct answer |  |
|----------------|--|
| name           |  |
| Mozambique     |  |

SELECT from world - quiz

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

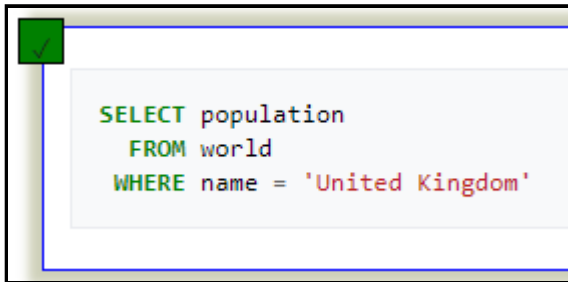
Respuesta:



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

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

Respuesta:

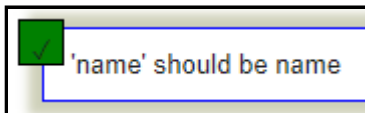


```
SELECT population
FROM world
WHERE name = 'United Kingdom'
```

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';
```

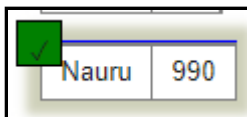
Respuesta:



'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 |
|-------|-----|

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:

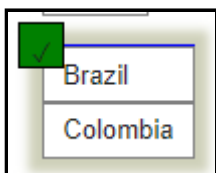


```
SELECT name FROM world
WHERE name IN ('Cuba', 'Togo')
```

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

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

Respuesta:



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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      |

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## 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 |

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### 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     |

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### 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             |

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### 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:

