# 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 |

**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 |

## 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 "Al%"
```

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 Chine, Australia, Nigeria and France.

Respuesta:

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

# SELECT from world

**Introduction**

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

**Código:**

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

Corrección (es lo mismo):

```sql
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 |

**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:**

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

Corrección:

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

| 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 |

**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 |

**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 |

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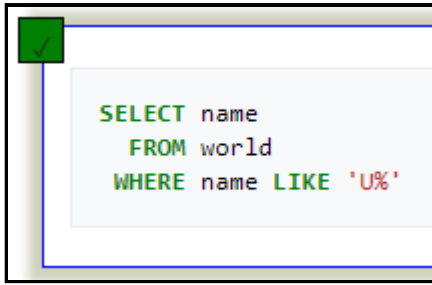
```
select name from world where name not like '% %' and name like '%a%' and name like
'%e%' and name like '%i%' and name like '%o%' and name like '%u%';
```

**Correct answer**

| name |
|------|
| Mozambique |

## SELECT from world - quiz

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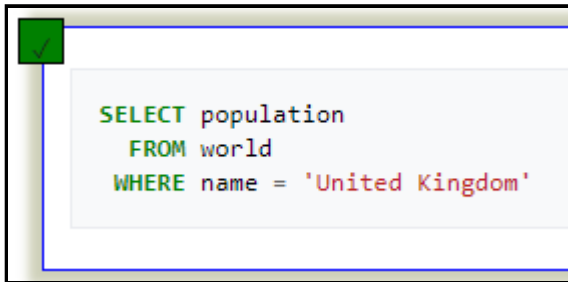
Respuesta:

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

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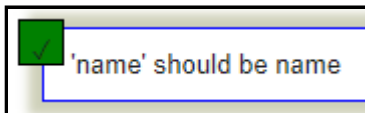
Respuesta:

```
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';
```
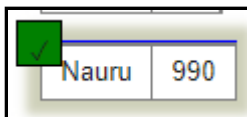
Respuesta:

'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:

```
Brazil
Colombia
```

# SELECT from nobel

## 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;
```

| 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;
```

---

**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('cookery', 'chemistry',
'literature');
```

Corrección:

```
-- El nombre completo de WoWoodrow Wilson no funciona, hay que quitar Thomas

select * from nobel where winner in('Theodore Roosevelt', 'Woodrow Wilson', 'Jimmy
Carter', 'Barack Obama');
```



---

**John**

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

Respuesta:

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



## 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:

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



## Exclude Chemists and Medics

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

Respuesta:

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

| 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';
```

---

**Apostrophe**

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

Respuesta:

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



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**Knights of the realm**

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

Respuesta:

```
select winner, yr, subject from nobel where winner like 'sir%' order by yr desc,
winner;
```



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**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.**

**Código:**

```
select winner, subject, subject in ('physics','chemistry') from nobel where
yr=1984 order by subject,winner;
```

Corrección:

```
select winner, subject from nobel where yr=1984 order by subject in('physics',
'chemistry'), subject, winner;
```

Error:

Incorrect syntax near the keyword 'in'.