

# 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:

```
-- muestra la población en francia  
  
select population from world where name='France';
```

Corrección:

```
-- muestra la población en alemania  
  
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:

```
-- muestra el nombre del país y la población del campo "name" donde coincida con  
"brasil", "rusia", "india" y "china"  
  
select name, population from world where name in('Brazil', 'Russia', 'India',  
'China');
```

Corrección:

```
-- muestra el nombre del país y la población del campo "name" donde coincida con  
"suecia", "noruega" y "dinamarca"
```

```
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:

```
-- muestra el nombre de los países cuyo área esté entre 250000 y 300000
```

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

Corrección:

```
-- muestra el nombre de los países cuyo área esté entre 200000 y 250000
```

```
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
```

Muestra el nombre y la población de aquellos países cuya población esté entre 1000000 y 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 |

Muestra el nombre y la población de aquellos países cuyo nombre empiece por "A".

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'
```

Muestra el nombre de los países cuyo nombre termina por "a" o por "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            |

Muestra el nombre y la longitud del nombre para aquellos países cuyo nombre tenga una longitud de 5 caracteres y correspondan a la región de "Europa".

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 |
|---------|-----|

Muestra el nombre y el area (multiplicada por 2) de aquellos países cuya población sea igual a 64000.

**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
```

Muestra el nombre, el área y la población de aquellos países cuyo área sea mayor que 50000 y su población sea menor que 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')
```

Muestra el nombre y la densidad de población (población/área) de aquellos países cuyo nombre coincida con "China", "Nigeria", "Francia" o "Australia" en el campo "name".

---

## SELECT from world

---

### Introduction

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

**Código:**

```
-- muestra el nombre, el continente y la población de todos los países de la tabla

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   |

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:

```
-- muestra el nombre de aquellos países cuya población sea igual a 64105700

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

Corrección:

```
-- muestra el nombre de aquellos países cuya población sea mayor o igual a
200000000

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:

```
-- muestra el nombre y el per capita de aquellos países cuya población sea mayor o  
igual a 200000000
```

```
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:

```
-- muestra el nombre y la población (en millones) para cada país perteneciente al  
continente "sudamérica"
```

```
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:

```
-- muestra el nombre y la población de cada país que coincide en nombre con
"francia", "alemania" o "italia" en el campo "name"

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:

```
-- muestra el nombre de todos los países cuyo nombre contenga "united" en alguna
parte de su nombre

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:

```
-- muestra el nombre, la población y el área de los países con un área mayor que 3000000 o una población mayor que 250000000
```

```
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 |

**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:

```
/*  
muestra el nombre, la población y el área de los países que cumplan una de estas dos condiciones:  
- que su area sea mayor que 3000000 y su población menor que 250000000  
- que su area sea menor que 3000000 y su población mayor que 250000000  
*/
```

```
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:

```
-- muestra el nombre, la población (en millones y redondeada a 2 decimales) y el  
gdp (en billones y con 2 decimales) para los países que tengan como continente  
"sudamérica"
```

```
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:

```
-- muestra el nombre y el per capita (el gdp entre la población, redondeado a los miles) de los países con un gdp más cercano a 1000000000000
```

```
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 si se utiliza Microsoft SQL (arriba a la derecha en la tuerca)
```

```
-- muestra el nombre, la longitud del nombre, la capital y la longitud de la capital de los países cuyo nombre y capital sean iguales en longitud
```

```
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:

```
-- muestra el nombre y la capital de los países cuyo nombre y capital empiezan por la misma letra, y que además el nombre y la capital no son la misma palabra
```

```
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

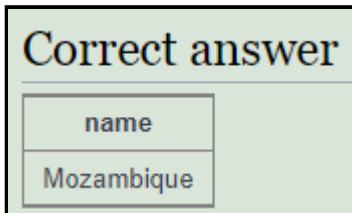
13. Equatorial Guinea and Dominican Republic have all of the vowels (a e i o u) in the name. They don't count because they have more than one word in the name.

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

Respuesta:

```
-- muestra el nombre de los países cuyo nombre solo tiene una palabra, es decir,  
no tiene espacios, y además contiene todas las vocales individualmente
```

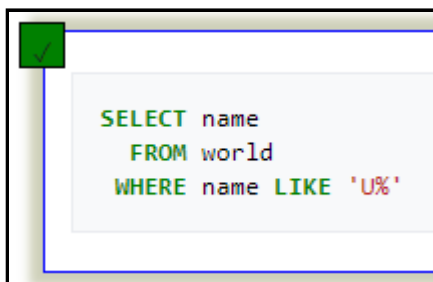
```
select name from world where name not like '% %' and name like '%a%' and name like  
'%e%' and name like '%i%' and name like '%o%' and name like '%u%';
```



## SELECT from world - quiz

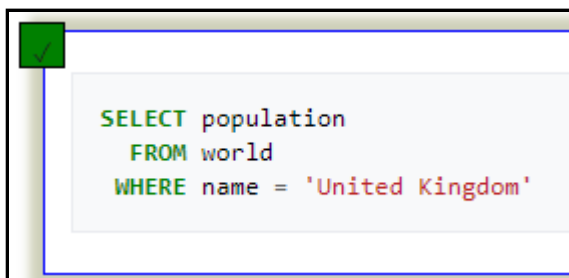
**1. Select the code which gives the name of countries beginning with U.**

Respuesta:



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

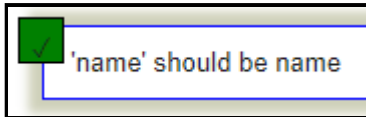
Respuesta:



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

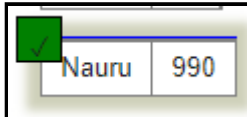
```
select continent from world where 'name'='France';
```

Respuesta:



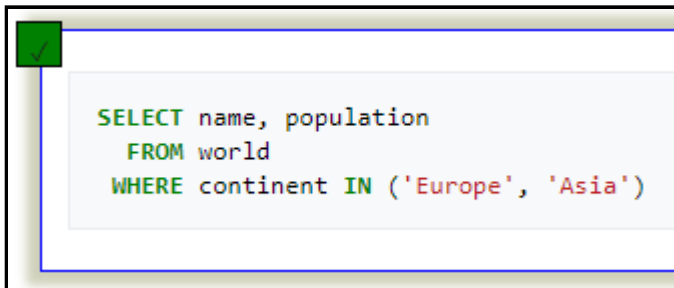
4. Select the result that would be obtained from the following code:

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



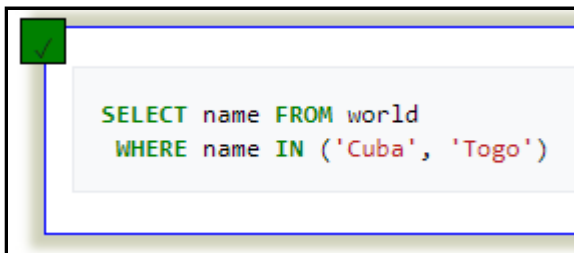
5. Select the code which would reveal the name and population of countries in Europe and Asia.

Respuesta:



6. Select the code which would give two rows.

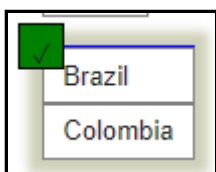
Respuesta:



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

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

Respuesta:



## 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;
```

### 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 |

## 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;
```

### 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   |

---

### 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:

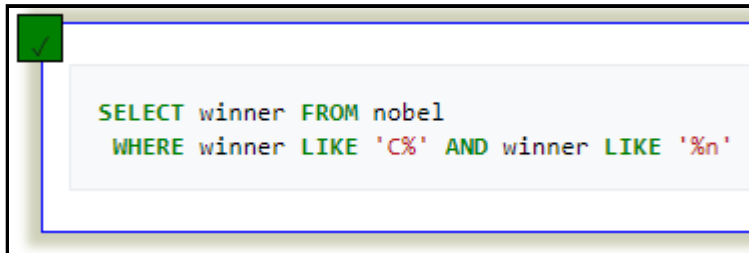
Incorrect syntax near the keyword 'in'.

## SELECT from nobel - quiz

---

1. Pick the code which shows the name of winner's names beginning with C and ending in n.

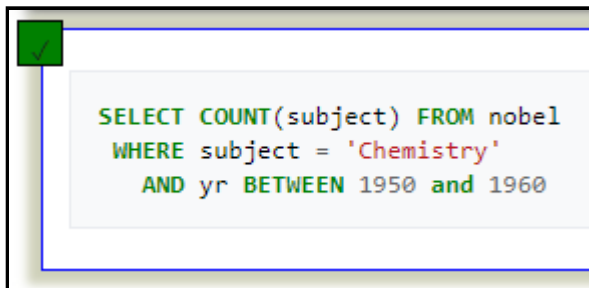
Respuesta:

A screenshot of a code editor with a green checkmark icon in the top left corner. The editor contains the following SQL query:

```
SELECT winner FROM nobel
WHERE winner LIKE 'C%' AND winner LIKE '%n'
```

2. Select the code that shows how many Chemistry awards were given between 1950 and 1960.

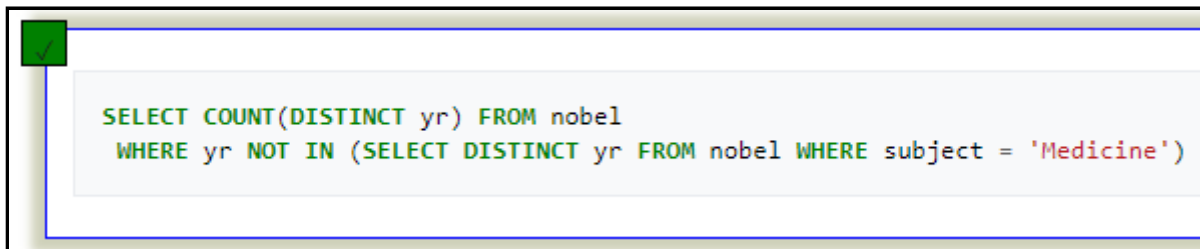
Respuesta:

A screenshot of a code editor with a green checkmark icon in the top left corner. The editor contains the following SQL query:

```
SELECT COUNT(subject) FROM nobel
WHERE subject = 'Chemistry'
AND yr BETWEEN 1950 and 1960
```

3. Pick the code that shows the amount of years where no Medicine awards were given.

Respuesta:

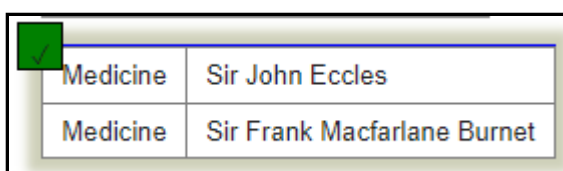
A screenshot of a code editor with a green checkmark icon in the top left corner. The editor contains the following SQL query:

```
SELECT COUNT(DISTINCT yr) FROM nobel
WHERE yr NOT IN (SELECT DISTINCT yr FROM nobel WHERE subject = 'Medicine')
```

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

```
select subject, winner from nobel where winner like 'sir%' and yr like '196%';
```

Respuesta:

A screenshot of a table with two rows and two columns. The first row contains 'Medicine' and 'Sir John Eccles'. The second row contains 'Medicine' and 'Sir Frank Macfarlane Burnet'. There is a green checkmark icon in the top left corner of the table.

|          |                             |
|----------|-----------------------------|
| Medicine | Sir John Eccles             |
| Medicine | Sir Frank Macfarlane Burnet |

5. Select the code which would show the year when neither a Physics or Chemistry award was given.

Respuesta:

```
SELECT yr FROM nobel
WHERE yr NOT IN(SELECT yr
                  FROM nobel
                  WHERE subject IN ('Chemistry','Physics'))
```

6. Select the code which shows the years when a Medicine award was given but no Peace or Literature award was.

Respuesta:

```
SELECT DISTINCT yr
FROM nobel
WHERE subject='Medicine'
AND yr NOT IN(SELECT yr FROM nobel
               WHERE subject='Literature')
AND yr NOT IN (SELECT yr FROM nobel
                WHERE subject='Peace')
```

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

```
select subject, count(subject) from nobel where yr = '1960' group by subject;
```

Respuesta:

|            |   |
|------------|---|
| Chemistry  | 1 |
| Literature | 1 |
| Medicine   | 2 |
| Peace      | 1 |
| Physics    | 1 |

---

## SELECT in SELECT

---

### Bigger than Russia

1. List each country name where the population is larger than that of 'Russia'.

**Código:**

```
select name from world where population > (select population from world where name='romania');
```

Corrección:

```
select name from world where population > (select population from world where name='russia');
```

| Correct answer |  |
|----------------|--|
| name           |  |
| Bangladesh     |  |
| Brazil         |  |
| China          |  |
| India          |  |
| Indonesia      |  |
| Nigeria        |  |
| Pakistan       |  |

---

**Richer than UK****2. Show the countries in Europe with a per capita GDP greater than 'United Kingdom'.**

Respuesta:

```
select name from world where gdp/population > (select gdp/population from world where name='united kingdom') and continent='europe';
```



## Correct answer

| name    |
|---------|
| Andorra |
| Austria |
| Belgium |
| Denmark |
| Finland |
| France  |
| Germany |

---

## 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.**

Respuesta:

```
select name, continent from world where continent in(select continent from world
where name in('argentina', 'australia')) order by name;
```

## Correct answer

| name      | continent     |
|-----------|---------------|
| Argentina | South America |
| Australia | Oceania       |
| Bolivia   | South America |
| Brazil    | South America |
| Chile     | South America |
| Colombia  | South America |
| Ecuador   | South America |

---

## 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.**

Respuesta:

```
select name, population from world where population > (select population from world
where name = 'united kingdom') and population < (select population from world where
name = 'germany');
```

### 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.

Respuesta:



---

### 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).

Respuesta:

```
select name from world where gdp >= all(select gdp from world where gdp >= 0 and
continent = 'europe') and continent != 'europe';
```

| 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:

Código:

```
select continent, name, population from world x where population >= all(select
population from world y where y.continent=x.continent and population>0);
```

Corrección:

```
select continent, name, area from world x where area >= all(select area from world
y where y.continent=x.continent and area>0);
```

| 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 |

---

### First country of each continent (alphabetically)

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

Respuesta:

```
select continent, name from world x where name <= all(select name from world y
where y.continent = x.continent);
```

## Correct answer

| continent     | name                |
|---------------|---------------------|
| Africa        | Algeria             |
| Asia          | Afghanistan         |
| Caribbean     | Antigua and Barbuda |
| Eurasia       | Armenia             |
| Europe        | Albania             |
| North America | Belize              |
| Oceania       | Australia           |

### Difficult Questions That Utilize Techniques Not Covered In Prior Sections

**9. Find the continents where all countries have a population  $\leq 25000000$ . then find the names of countries associated with these continents. show name, continent and population.< b>**

Respuesta:

```
select name, continent, population from world x where 25000000 > all(select  
population from world y where x.continent = y.continent and y.population > 0);
```

## 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    |

### 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.**

Respuesta:

```
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);
```

### Correct answer

| name      | continent     |
|-----------|---------------|
| Russia    | Eurasia       |
| Australia | Oceania       |
| Brazil    | South America |

## SELECT in SELECT - quiz

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

Respuesta:

```
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.

Respuesta:

```
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.

Respuesta:

```
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)
```

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');
```

Respuesta:

| Table-D                             |         |
|-------------------------------------|---------|
| <input checked="" type="checkbox"/> | France  |
| <input type="checkbox"/>            | Germany |
| <input type="checkbox"/>            | Russia  |
| <input type="checkbox"/>            | Turkey  |

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).

Respuesta:

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

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

Respuesta:

```
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';
```

Respuesta:

| Table-B                             |            |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Bangladesh |
| <input type="checkbox"/>            | India      |
| <input type="checkbox"/>            | Pakistan   |

---

## SUM and COUNT

---

### Total world population

#### 1. Show the total population of the world.

Respuesta:

```
select sum(population) from world;
```

#### Correct answer

|            |
|------------|
| 7118632738 |
|------------|

---

### List of continents

#### 2. List all the continents - just once each.

Respuesta:

```
select distinct(continent) from world;
```

#### Correct answer

| continent     |
|---------------|
| Africa        |
| Asia          |
| Caribbean     |
| Eurasia       |
| Europe        |
| North America |
| Oceania       |

---

### GDP of Africa

#### 3. Give the total GDP of Africa.

Respuesta:

```
select sum(gdp) from world where continent='africa';
```

**Correct answer**

---

### Count the big countries

#### 4. How many countries have an area of at least 1000000?

Respuesta:

```
select count(name) from world where area>=1000000;
```

**Correct answer**

---

### Baltic states population

#### 5. What is the total population of ('Estonia', 'Latvia', 'Lithuania')?

Respuesta:

```
select sum(population) from world where name in('estonia', 'latvia', 'lithuania');
```

**Correct answer**

---

### Counting the countries of each continent

#### 6. For each continent, show the continent and number of countries.

Respuesta:

```
select continent, count(name) from world group by continent;
```



## Correct answer

| continent     |    |
|---------------|----|
| Africa        | 53 |
| Asia          | 47 |
| Caribbean     | 11 |
| Eurasia       | 2  |
| Europe        | 44 |
| North America | 11 |
| Oceania       | 14 |

---

### Counting big countries in each continent

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

Respuesta:

```
select continent, count(name) from world where population>=10000000 group by continent;
```

## Correct answer

| continent     |    |
|---------------|----|
| Africa        | 29 |
| Asia          | 26 |
| Caribbean     | 2  |
| Eurasia       | 1  |
| Europe        | 14 |
| North America | 4  |
| Oceania       | 1  |

---

### Counting big continents

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

Respuesta:

```
select continent from world group by continent having sum(population)>100000000;
```

| 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'.


Respuesta:



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

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


Respuesta:



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

3. Select the list of core SQL aggregate functions.

Respuesta:



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

Respuesta:



No result due to invalid use of the WHERE function

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

Respuesta:



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

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

Respuesta:



```
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.

Respuesta:



```
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;
```

Respuesta:



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

---

## JOIN

---

1. The first example shows the goal scored by a player with the last name 'Bender'. The `*` says to list all the columns in the table - a shorter way of saying `matchid, teamid, player, gtime`.

Código:

```
select * from goal where player like '%bender';
```

Corrección:

```
select matchid, player from goal where teamid='ger';
```

### Correct answer

| matchid | player         |
|---------|----------------|
| 1008    | Mario Gómez    |
| 1010    | Mario Gómez    |
| 1010    | Mario Gómez    |
| 1012    | Lukas Podolski |
| 1012    | Lars Bender    |
| 1026    | Philipp Lahm   |
| 1026    | Sami Khedira   |

2. From the previous query you can see that Lars Bender's scored a goal in game 1012. Now we want to know what teams were playing in that match.

Notice in the that the column `matchid` in the `goal` table corresponds to the `id` column in the `game` table. We can look up information about game 1012 by finding that row in the game table.

Código:

```
select id, stadium, team1, team2 from game;
```

Corrección:

```
select id, stadium, team1, team2 from game where id=1012;
```

## Correct answer

| id   | stadium    | team1 | team2 |
|------|------------|-------|-------|
| 1012 | Arena Lviv | DEN   | GER   |

3. You can combine the two steps into a single query with a **JOIN**.

The **FROM** clause says to merge data from the goal table with that from the game table. The **ON** says how to figure out which rows in game go with which rows in goal - the matchid from goal must match id from game. (If we wanted to be more clear/specific we could say **ON (game.id=goal.matchid)**).

The code below shows the player (from the goal) and stadium name (from the game table) for every goal scored.

Modify it to show the player, teamid, stadium and mdate for every German goal.

Código:

```
select player, stadium from game join goal on(id=matchid);
```

Corrección:

```
select player, teamid, stadium, mdate from game join goal on(game.id =
goal.matchid and goal.teamid='ger');
```

## Correct answer

| player         | teamid | stadium          | mdate               |
|----------------|--------|------------------|---------------------|
| Mario Gómez    | GER    | Arena Lviv       | 2012-06-09T00:00:00 |
| Mario Gómez    | GER    | Metalist Stadium | 2012-06-13T00:00:00 |
| Mario Gómez    | GER    | Metalist Stadium | 2012-06-13T00:00:00 |
| Lukas Podolski | GER    | Arena Lviv       | 2012-06-17T00:00:00 |
| Lars Bender    | GER    | Arena Lviv       | 2012-06-17T00:00:00 |
| Philipp Lahm   | GER    | PGE Arena Gdansk | 2012-06-22T00:00:00 |
| Sami Khedira   | GER    | PGE Arena Gdansk | 2012-06-22T00:00:00 |

4. Show the team1, team2 and player for every goal scored by a player called Mario **player LIKE 'Mario%'**.

Respuesta:

```
select team1, team2, player from game join goal on(id=matchid and player like 'mario%');
```

### Correct answer

| team1 | team2 | player          |
|-------|-------|-----------------|
| GER   | POR   | Mario Gómez     |
| NED   | GER   | Mario Gómez     |
| NED   | GER   | Mario Gómez     |
| IRL   | CRO   | Mario Mandžukic |
| IRL   | CRO   | Mario Mandžukic |
| ITA   | CRO   | Mario Mandžukic |
| ITA   | IRL   | Mario Balotelli |

5. The table `eteam` gives details of every national team including the coach. You can `JOIN goal` to `eteam` using the phrase `goal JOIN eteam on teamid=id`.

Show `player`, `teamid`, `coach`, `gtime` for all goals scored in the first 10 minutes `gtime<=10< code>`.

Código:

```
select player, teamid, gtime from goal where gtime<=10;
```

Corrección:

```
select player, teamid, coach, gtime from goal join eteam on(teamid=id and gtime<=10);
```

### Correct answer

| player          | teamid | coach              | gtime |
|-----------------|--------|--------------------|-------|
| Petr Jiráček    | CZE    | Michal Bílek       | 3     |
| Václav Pilar    | CZE    | Michal Bílek       | 6     |
| Mario Mandžukic | CRO    | Slaven Bilic       | 3     |
| Fernando Torres | ESP    | Vicente del Bosque | 4     |

6. To `JOIN game` with `eteam` you could use either `game JOIN eteam ON (team1=eteam.id)` or `game JOIN eteam ON (team2=eteam.id)`.

Notice that because `id` is a column name in both `game` and `eteam` you must specify `eteam.id` instead of just `id`.

List the dates of the matches and the name of the team in which 'Fernando Santos' was the team1 coach.

Respuesta:

```
select mdate, teamname from game join eteam on (team1=eteam.id and coach like '%santos');
```

| Correct answer      |          |
|---------------------|----------|
| mdate               | teamname |
| 2012-06-12T00:00:00 | Greece   |
| 2012-06-16T00:00:00 | Greece   |

7. List the player for every goal scored in a game where the stadium was 'National Stadium, Warsaw'.

Respuesta:

```
select player from goal join game on (id=matchid and stadium='national stadium, warsaw');
```

| Correct answer       |  |
|----------------------|--|
| player               |  |
| Dimitris Salpingidis |  |
| Robert Lewandowski   |  |
| Jakub Blaszczykowski |  |
| Alan Dzagoev         |  |
| Giorgos Karagounis   |  |
| Cristiano Ronaldo    |  |
| Mesut Özil           |  |

8. The example query shows all goals scored in the Germany-Greece quarterfinal.

Instead show the name of all players who scored a goal against Germany.

Código:

```
select player, gtime from game join goal on matchid=id where(team1='ger' and team2='gre');
```

Corrección:

```
select distinct(player) from game join goal on matchid=id where((team1='ger' or team2='gre') and teamid!='ger');
```

### Correct answer

| player               |
|----------------------|
| Dimitris Salpingidis |
| Georgios Samaras     |
| Mario Balotelli      |
| Michael Krohn-Dehli  |
| Robin van Persie     |

---

## 9. Show teamname and the total number of goals scored.

Código:

```
select teamname, player from eteam join goal on id=teamid order by teamname;
```

Corrección:

```
select teamname, count(player) from eteam join goal on id=teamid group by teamname;
```

### Correct answer

| teamname       |    |
|----------------|----|
| Croatia        | 4  |
| Czech Republic | 4  |
| Denmark        | 4  |
| England        | 5  |
| France         | 3  |
| Germany        | 10 |
| Greece         | 5  |



---

**10. Show the stadium and the number of goals scored in each stadium.**

Respuesta:

```
select stadium, count(player) as goals from game join goal on (id=matchid) group by stadium;
```

**Correct answer**

| stadium                             | goals |
|-------------------------------------|-------|
| Arena Lviv                          | 9     |
| Donbass Arena                       | 7     |
| Metalist Stadium                    | 7     |
| National Stadium, Warsaw            | 9     |
| Olimpiyskiy National Sports Complex | 14    |
| PGE Arena Gdansk                    | 13    |
| Stadion Miejski (Poznan)            | 8     |

---

**11. For every match involving 'POL', show the matchid, date and the number of goals scored.****Código:**

```
select matchid, mdate, team1, team2, teamid from game join goal on matchid=id where (team1='pol' or team2='pol');
```

Corrección:

```
select matchid, mdate, count(player) as goals from game join goal on (matchid=id and (team1='pol' or team2='pol')) group by matchid, mdate;
```

**Correct answer**

| matchid | mdate               | goals |
|---------|---------------------|-------|
| 1001    | 2012-06-08T00:00:00 | 2     |
| 1004    | 2012-06-12T00:00:00 | 2     |
| 1005    | 2012-06-16T00:00:00 | 1     |

---

**12. For every match where 'GER' scored, show matchid, match date and the number of goals scored by 'GER'.**

Respuesta:

```
select id, mdate, count(player) from game join goal on (id=matchid and (team1 = 'ger' or team2 = 'ger')) and teamid='ger') group by id, mdate;
```

| Correct answer |                     |   |
|----------------|---------------------|---|
| id             | mdate               |   |
| 1008           | 2012-06-09T00:00:00 | 1 |
| 1010           | 2012-06-13T00:00:00 | 2 |
| 1012           | 2012-06-17T00:00:00 | 2 |
| 1026           | 2012-06-22T00:00:00 | 4 |
| 1030           | 2012-06-28T00:00:00 | 1 |

13. List every match with the goals scored by each team as shown. This will use "CASE WHEN" which has not been explained in any previous exercises.

Código:

```
select mdate, team1, case when teamid=team1 then 1 else 0 end score1 from game join goal on matchid=id;
```

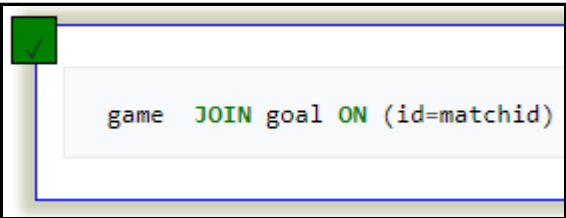
Respuesta:



### JOIN - quiz

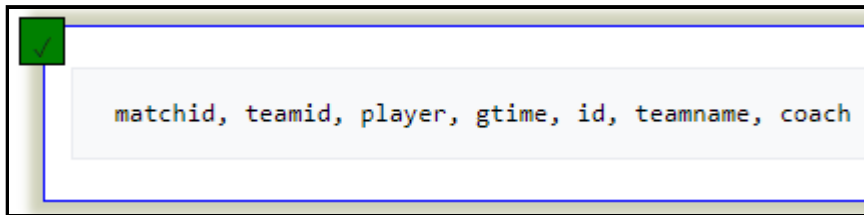
1. You want to find the stadium where player 'Dimitris Salpingidis' scored. Select the JOIN condition to use:

Respuesta:



2. You JOIN the tables goal and eteam in an SQL statement. Indicate the list of column names that may be used in the SELECT line:

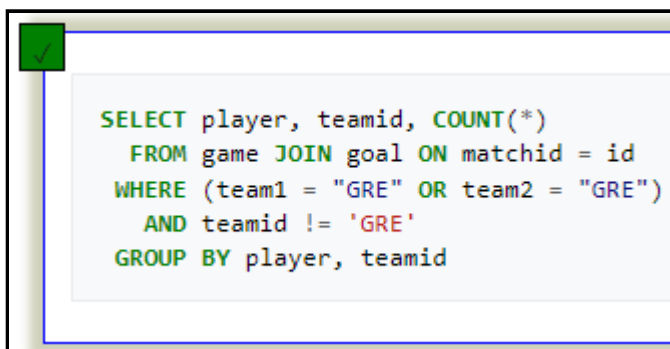
Respuesta:



```
matchid, teamid, player, gtime, id, teamname, coach
```

3. Select the code which shows players, their team and the amount of goals they scored against Greece(GRE).

Respuesta:

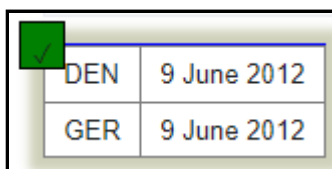


```
SELECT player, teamid, COUNT(*)  
FROM game JOIN goal ON matchid = id  
WHERE (team1 = "GRE" OR team2 = "GRE")  
AND teamid != 'GRE'  
GROUP BY player, teamid
```

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

```
select distinct teamid, mdate from goal join game on (matchid=id) where mdate = '9  
june 2012';
```

Respuesta:



|     |             |
|-----|-------------|
| DEN | 9 June 2012 |
| GER | 9 June 2012 |

5. Select the code which would show the player and their team for those who have scored against Poland(POL) in National Stadium, Warsaw.

Respuesta:

```
SELECT DISTINCT player, teamid
FROM game JOIN goal ON matchid = id
WHERE stadium = 'National Stadium, Warsaw'
AND (team1 = 'POL' OR team2 = 'POL')
AND teamid != 'POL'
```

6. Select the code which shows the player, their team and the time they scored, for players who have played in Stadion Miejski (Wroclaw) but not against Italy(ITA).

Respuesta:

```
SELECT DISTINCT player, teamid, gtime
FROM game JOIN goal ON matchid = id
WHERE stadium = 'Stadion Miejski (Wroclaw)'
AND (( teamid = team2 AND team1 != 'ITA') OR ( teamid = team1 AND team2 != 'ITA'))
```

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

```
select teamname, count(*) from eteam join goal on teamid=id group by teamname
having count(*)<3;
```

Respuesta:

|                     |   |
|---------------------|---|
| Netherlands         | 2 |
| Poland              | 2 |
| Republic of Ireland | 1 |
| Ukraine             | 2 |

---

## More JOIN

### 1962 movies

1. List the films where the yr is 1962 [Show id, title].

Respuesta:

```
select id, title from movie where yr=1962;
```

## Correct answer

| id   | title                            |
|------|----------------------------------|
| 121  | To Kill a Mockingbird            |
| 479  | Dr. No                           |
| 1082 | Music Man, The                   |
| 1496 | What Ever Happened to Baby Jane? |
| 1751 | Cape Fear                        |

### When was Citizen Kane released?

#### 2. Give year of 'Citizen Kane'.

Respuesta:

```
select yr from movie where title='citizen kane';
```

## Correct answer

| yr   |
|------|
| 1941 |

### Star Trek movies

#### 3. List all of the Star Trek movies, include the id, title and yr (all of these movies include the words Star Trek in the title). Order results by year.

Respuesta:

```
select id, title, yr from movie where title like '%star trek%' order by yr;
```

| Correct answer |  |      |
|----------------|--|------|
| id             | title                                  | yr   |
| 402            | Star Trek: The Motion Picture          | 1979 |
| 209            | Star Trek: The Wrath of Khan           | 1982 |
| 438            | Star Trek III: The Search for Spock    | 1984 |
| 349            | Star Trek IV: The Voyage Home          | 1986 |
| 472            | Star Trek V: The Final Frontier        | 1989 |
| 410            | Star Trek VI: The Undiscovered Country | 1991 |
| 280            | Star Trek: Generations                 | 1994 |

id for actor Glenn Close

4. What id number does the actor 'Glenn Close' have?

Respuesta:

```
select id from actor where name like 'Glenn Close';
```

| Correct answer |  |
|----------------|--|
| id             |  |
| 104            |  |

id for Casablanca

5. What is the id of the film 'Casablanca'.

Respuesta:

```
select id from movie where title='casablanca';
```

| Correct answer |  |
|----------------|--|
| id             |  |
| 27             |  |

Cast list for Casablanca

6. Obtain the cast list for 'Casablanca'. Use movieid=11768, (or whatever value you got from the previous question).

Respuesta:

```
select name from actor, casting where id=actorid and movieid=(select id from movie where title='casablanca');
```

| Correct answer  |  |
|-----------------|--|
| name            |  |
| Humphrey Bogart |  |
| Ingrid Bergman  |  |
| Claude Rains    |  |
| Peter Lorre     |  |
| Paul Henreid    |  |
| John Qualen     |  |
| Curt Bois       |  |

Alien cast list

7. Obtain the cast list for the film 'Alien'.

Respuesta:

```
select name from actor join casting on(id=actorid and movieid=(select id from movie where title='alien'));
```

| Correct answer      |  |
|---------------------|--|
| name                |  |
| Sigourney Weaver    |  |
| Ian Holm            |  |
| Harry Dean Stanton  |  |
| Tom Skerritt        |  |
| John Hurt           |  |
| Veronica Cartwright |  |
| Yaphet Kotto        |  |

Harrison Ford movies

8. List the films in which 'Harrison Ford' has appeared.

Respuesta:

```
select title from movie join casting on(id=movieid and actorid=(select id from actor where name='harrison ford'));
```

| Correct answer                                 |  |
|--|--|
| title  |  |
| Star Wars                                      |  |
| Star Wars: Episode V - The Empire Strikes Back |  |
| Raiders of the Lost Ark                        |  |
| Star Wars: Episode VI - Return of the Jedi     |  |
| Blade Runner                                   |  |
| Indiana Jones and the Last Crusade             |  |
| Fugitive, The                                  |  |

Harrison Ford as a supporting actor

9. List the films where 'Harrison Ford' has appeared - but not in the starring role. [Note: the ord field of casting gives the position of the actor. If ord=1 then this actor is in the starring role].

Respuesta:

```
select title from movie join casting on(id=movieid and actorid=(select id from actor where name='harrison ford') and ord!=1);
```

| Correct answer                                 |  |
|--|--|
| title  |  |
| Star Wars                                      |  |
| Star Wars: Episode V - The Empire Strikes Back |  |
| Star Wars: Episode VI - Return of the Jedi     |  |
| Apocalypse Now                                 |  |
| American Graffiti                              |  |
| Conversation, The                              |  |

Lead actors in 1962 movies



**10. List the films together with the leading star for all 1962 films.**

Respuesta:

```
select title, name from movie join casting on (id=movieid) join actor on  
(actor.id=actorid) where ord=1 and yr=1962;
```

**Correct answer**

| title                            | name               |
|----------------------------------|--------------------|
| To Kill a Mockingbird            | Gregory Peck       |
| Dr. No                           | Sean Connery       |
| Music Man, The                   | Robert Preston (I) |
| What Ever Happened to Baby Jane? | Bette Davis        |
| Cape Fear                        | Gregory Peck       |

**Busy years for Rock Hudson**

**11. Which were the busiest years for 'Rock Hudson', show the year and the number of movies he made each year for any year in which he made more than 2 movies.**

Código:

```
select yr,count(title) from movie join casting on movie.id=movieid join actor on  
actorid=actor.id where name='doris day' group by yr having count(title)>1;
```

Respuesta:

**Lead actor in Julie Andrews movies**

**12. List the film title and the leading actor for all of the films 'Julie Andrews' played in.**

Código:

```
select movieid from casting where actorid in (select id from actor where  
name='julie andrews');
```

Respuesta:

```
select title, name from movie join casting x on movie.id=movieid join actor on actor.id=actorid where ord=1 and movieid in(select movieid from casting y join actor on actor.id=actorid where name='julie andrews');
```

| Correct answer      |               |
|---------------------|---------------|
| title               | name          |
| Sound of Music, The | Julie Andrews |
| Victor/Victoria     | Julie Andrews |
| 10                  | Dudley Moore  |

Actors with 15 leading roles

13. Obtain a list, in alphabetical order, of actors who've had at least 15 starring roles.

Respuesta:

```
select name from actor join casting on actor.id=casting.actorid where casting.ord=1 group by name having count(*)>=15 order by name asc;
```

| Correct answer        |  |
|-----------------------|--|
| name                  |  |
| Al Pacino             |  |
| Arnold Schwarzenegger |  |
| Clint Eastwood        |  |
| Harrison Ford         |  |
| Robert De Niro        |  |
| Robin Williams        |  |
| Sean Connery          |  |

released in the year 1978

14. List the films released in the year 1978 ordered by the number of actors in the cast, then by title.

Respuesta:

```
select title, count(actorid) as cast from movie join casting on id=movieid where  
yr=1978 group by title order by cast desc, title;
```

### Correct answer

| title                 | cast |
|-----------------------|------|
| Death on the Nile     | 12   |
| Capricorn One         | 11   |
| Foul Play             | 11   |
| Heaven Can Wait       | 11   |
| Animal House          | 9    |
| Boys from Brazil, The | 9    |
| Midnight Express      | 9    |

---

with 'Art Garfunkel'

15. List all the people who have worked with 'Art Garfunkel'.

Respuesta:

```
select distinct name from actor join casting on id=actorid where movieid in(select  
movieid from casting join actor on(actorid=id and name='art garfunkel')) and  
name!='art garfunkel' group by name;
```

### Correct answer


| name            |
|-----------------|
| Alan Arkin      |
| Anthony Perkins |
| Bill Paxton     |
| Bob Balaban     |
| Bob Newhart     |
| Buck Henry      |
| Jack Gilford    |

---

## More JOIN - quiz

1. Select the statement which lists the unfortunate directors of the movies which have caused financial losses (gross < budget).


Respuesta:



```
SELECT name
  FROM actor INNER JOIN movie ON actor.id = director
 WHERE gross < budget
```

2. Select the correct example of JOINing three tables.


Respuesta:



```
SELECT *
  FROM actor JOIN casting ON actor.id = actorid
 JOIN movie ON movie.id = movieid
```

3. Select the statement that shows the list of actors called 'John' by order of number of movies in which they acted.

Respuesta:




```
SELECT name, COUNT(movieid)
  FROM casting JOIN actor ON actorid=actor.id
 WHERE name LIKE 'John %'
 GROUP BY name ORDER BY 2 DESC
```

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

```
select title from movie join casting on(movieid=movie.id) join actor
on(actorid=actor.id) where name='paul hogan' and ord=1;
```


Respuesta:



|                                 |
|---------------------------------|
| "Crocodile" Dundee              |
| Crocodile Dundee in Los Angeles |
| Flipper                         |
| Lightning Jack                  |

5. Select the statement that lists all the actors that starred in movies directed by Ridley Scott who has id 351.


Respuesta:



```
SELECT name
FROM movie JOIN casting ON movie.id = movieid
JOIN actor ON actor.id = actorid
WHERE ord = 1 AND director = 351
```

6. There are two sensible ways to connect movie and actor. They are:


Respuesta:

- 
- link the director column in movies with the primary key in actor
  - connect the primary keys of movie and actor via the casting table

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

```
select title, yr from movie, casting, actor where name='robert de niro' and
movieid=movie.id and actorid=actor.id and ord=3;
```

Respuesta:



|                      |      |
|----------------------|------|
| A Bronx Tale         | 1993 |
| Bang the Drum Slowly | 1973 |
| Limitless            | 2011 |

---

## Using NULL

NULL, INNER JOIN, LEFT JOIN, RIGHT JOIN

1. List the teachers who have NULL for their department.

Respuesta:

```
select name from teacher where dept is null;
```

| Correct answer |  |
|----------------|--|
| name           |  |
| Spiregrain     |  |
| Deadyawn       |  |

**2. Note the INNER JOIN misses the teachers with no department and the departments with no teacher.**

Respuesta:

```
select teacher.name, dept.name from teacher inner join dept
on(teacher.dept=dept.id);
```

| Correct answer |           |
|----------------|-----------|
| name           | name      |
| Shrivell       | Computing |
| Throd          | Computing |
| Splint         | Computing |
| Cutflower      | Design    |

**3. Use a different JOIN so that all teachers are listed.**

Respuesta:

```
select teacher.name, dept.name from teacher left join dept
on(teacher.dept=dept.id);
```

| Correct answer |           |
|----------------|-----------|
| name           | name      |
| Shrivell       | Computing |
| Throd          | Computing |
| Splint         | Computing |
| Spiregrain     |           |
| Cutflower      | Design    |
| Deadyawn       |           |

**4. Use a different JOIN so that all departments are listed.**

Respuesta:

```
select teacher.name, dept.name from teacher right join dept
on(teacher.dept=dept.id);
```

### Correct answer

| name      | name        |
|-----------|-------------|
| Shrivell  | Computing   |
| Throd     | Computing   |
| Splint    | Computing   |
| Cutflower | Design      |
|           | Engineering |

**5. Use COALESCE to print the mobile number. Use the number '07986 444 2266' if there is no number given. Show teacher name and mobile number or '07986 444 2266'.**

Respuesta:

```
select name, coalesce(mobile, '07986 444 2266') from teacher;
```

### Correct answer

| name       |                |
|------------|----------------|
| Shrivell   | 07986 555 1234 |
| Throd      | 07122 555 1920 |
| Splint     | 07986 444 2266 |
| Spiregrain | 07986 444 2266 |
| Cutflower  | 07996 555 6574 |
| Deadyawn   | 07986 444 2266 |

**6. Use the COALESCE function and a LEFT JOIN to print the teacher name and department name. Use the string 'None' where there is no department.**

Respuesta:

```
select coalesce(teacher.name, 'none'), coalesce(dept.name, 'none') from teacher
left join dept on(teacher.dept=dept.id);
```

| Correct answer |           |
|----------------|-----------|
| Shrivell       | Computing |
| Throd          | Computing |
| Splint         | Computing |
| Spiregrain     | None      |
| Cutflower      | Design    |
| Deadyawn       | None      |

7. Use COUNT to show the number of teachers and the number of mobile phones.

Respuesta:

```
select count(name), count(mobile) from teacher;
```

| Correct answer |   |
|----------------|---|
| 6              | 3 |

8. Use COUNT and GROUP BY dept.name to show each department and the number of staff. Use a RIGHT JOIN to ensure that the Engineering department is listed.

Respuesta:

```
select dept.name, count(teacher.name) from teacher right join dept
on(teacher.dept=dept.id) group by dept.name;
```

| Correct answer |   |
|----------------|---|
| name           |   |
| Computing      | 3 |
| Design         | 1 |
| Engineering    | 0 |

9. Use CASE to show the name of each teacher followed by 'Sci' if the teacher is in dept 1 or 2 and 'Art' otherwise.

Respuesta:



```
select teacher.name, case when dept.id=1 then 'sci' when dept.id=2 then 'sci' else  
'art' end from teacher left join dept on(teacher.dept=dept.id);
```

### Correct answer

| name       |     |
|------------|-----|
| Shrivell   | Sci |
| Throd      | Sci |
| Splint     | Sci |
| Spiregrain | Art |
| Cutflower  | Sci |
| Deadyawn   | Art |

**10. Use CASE to show the name of each teacher followed by 'Sci' if the teacher is in dept 1 or 2, show 'Art' if the teacher's dept is 3 and 'None' otherwise.**

Respuesta:

```
select teacher.name, case when dept.id=1 then 'sci' when dept.id=2 then 'sci' when  
dept.id=3 then 'art' else 'none' end from teacher left join dept  
on(dept.id=teacher.dept);
```

### Correct answer

| name       |      |
|------------|------|
| Shrivell   | Sci  |
| Throd      | Sci  |
| Splint     | Sci  |
| Spiregrain | None |
| Cutflower  | Sci  |
| Deadyawn   | None |

## Using NULL - quiz

**1. Select the code which uses an outer join correctly.**

Respuesta:

```
SELECT teacher.name, dept.name FROM teacher LEFT OUTER JOIN dept ON (teacher.dept = dept.id)
```

2. Select the correct statement that shows the name of department which employs Cutflower.

Respuesta:

```
SELECT dept.name FROM teacher JOIN dept ON (dept.id = teacher.dept) WHERE teacher.name = 'Cutflower'
```

3. Select out of following the code which uses a JOIN to show a list of all the departments and number of employed teachers.

Respuesta:

```
SELECT dept.name, COUNT(teacher.name) FROM teacher RIGHT JOIN dept ON dept.id = teacher.dept GROUP BY dept.name
```

4. Using `SELECT name, dept, COALESCE(dept, 0) AS result FROM teacher` on `teacher` table will:

Respuesta:

display 0 in result column for all teachers without department

5. Query:

```
select name, case when phone=2752 then 'two' when phone=2753 then 'three' when  
phone=2754 then 'four' end as digit from teacher;
```

Respuesta:

'four' for Throd

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

```
select name, case when dept in(1) then 'computing' else 'other' end from teacher;
```

Respuesta:

| Table-A    |           |
|------------|-----------|
| Shrivell   | Computing |
| Throd      | Computing |
| Splint     | Computing |
| Spiregrain | Other     |
| Cutflower  | Other     |
| Deadyawn   | Other     |

## Self JOIN

### 1. How many stops are in the database.

Respuesta:

```
select count(*) from stops;
```

Correct answer

246

### 2. Find the id value for the stop 'Craiglockhart'.

Respuesta:

```
select id from stops where name='craiglockhart';
```

Correct answer

id

53

### 3. Give the id and the name for the stops on the '4' 'LRT' service.

Respuesta:

```
-- este apartado no me funcionaba correctamente. las consultas no se ejecutaban
```



4. The query shown gives the number of routes that visit either London Road (149) or Craiglockhart (53). Run the query and notice the two services that link these stops have a count of 2. Add a HAVING clause to restrict the output to these two routes.

Código:

```
select company, num, count(*) from route where stop=149 or stop=53 group by
company, num;
```

Corrección:



5. Execute the self join shown and observe that b.stop gives all the places you can get to from Craiglockhart, without changing routes. Change the query so that it shows the services from Craiglockhart to London Road.

Código:

```
select a.company, a.num, a.stop, b.stop from route a join route b
on(a.company=b.company and a.num=b.num) where a.stop=53;
```

Corrección:

```
select a.company, a.num, a.stop, b.stop from route a join route b
on(a.company=b.company and a.num=b.num) where a.stop=53 and b.stop=149;
```

### Correct answer

| company | num | stop | stop |
|---------|-----|------|------|
| LRT     | 4   | 53   | 149  |
| LRT     | 45  | 53   | 149  |

6. The query shown is similar to the previous one, however by joining two copies of the stops table we can refer to stops by name rather than by number. Change the query so that the services between 'Craiglockhart' and 'London Road' are shown. If you are tired of these places try 'Fairmilehead' against 'Tollcross'.

Código:

```
select a.company, a.num, stopa.name, stopb.name from route a join route b
on(a.company=b.company and a.num=b.num) join stops stopa on (a.stop=stopa.id) join
stops stopb on(b.stop=stopb.id) where stopa.name='craiglockhart';
```

Corrección:

```
select a.company, a.num, stopa.name, stopb.name from route a join route b
on(a.company=b.company and a.num=b.num) join stops stopa on(a.stop=stopa.id) join
stops stopb on(b.stop=stopb.id) where stopa.name='craiglockhart'and stopb.name =
'London road';
```

| Correct answer |     |               |             |
|----------------|-----|---------------|-------------|
| company        | num | name          | name        |
| LRT            | 4   | Craiglockhart | London Road |
| LRT            | 45  | Craiglockhart | London Road |

7. Give a list of all the services which connect stops 115 and 137 ('Haymarket' and 'Leith').

Respuesta:

```
select distinct a.company, a.num from route a join route b on(a.company =b.company
and a.num=b.num) join stops stopa on (a.stop=stopa.id) join stops stopb
on(b.stop=stopb.id) where stopa.name='haymarket' and stopb.name='leith';
```

| Correct answer |     |
|----------------|-----|
| company        | num |
| LRT            | 12  |
| LRT            | 2   |
| LRT            | 22  |
| LRT            | 25  |
| LRT            | 2A  |
| SMT            | C5  |

8. Give a list of the services which connect the stops 'Craiglockhart' and 'Tollcross'.

Respuesta:

```
select distinct a.company, a.num from route a join route b on(a.num=b.num and
a.company=b.company) join stops stopa on(a.stop=stopa.id) join stops stopb
on(b.stop=stopb.id) where stopa.name='craiglockhart' and stopb.name='tollcross';
```

### Correct answer

| company | num |
|---------|-----|
| LRT     | 10  |
| LRT     | 27  |
| LRT     | 45  |
| LRT     | 47  |

**9. Give a distinct list of the stops which may be reached from 'Craiglockhart' by taking one bus, including 'Craiglockhart' itself, offered by the LRT company. Include the company and bus no. of the relevant services.**

Respuesta:

```
select stopa.name, a.company, a.num from route a join route b on(a.num=b.num and
a.company=b.company) join stops stopa on(a.stop=stopa.id) join stops stopb
on(b.stop=stopb.id) where stopb.name='craiglockhart';
```

### Correct answer

| name           | company | num |
|----------------|---------|-----|
| Silverknowes   | LRT     | 10  |
| Muirhouse      | LRT     | 10  |
| Newhaven       | LRT     | 10  |
| Leith          | LRT     | 10  |
| Leith Walk     | LRT     | 10  |
| Princes Street | LRT     | 10  |
| Tollcross      | LRT     | 10  |

**10. Find the routes involving two buses that can go from Craiglockhart to Lochend. Show the bus no. and company for the first bus, the name of the stop for the transfer, and the bus no. and company for the second bus.**

Respuesta:



## Self JOIN - quiz

1. Select the code that would show it is possible to get from Craiglockhart to Haymarket.

Respuesta:

```
SELECT DISTINCT a.name, b.name
  FROM stops a JOIN route z ON a.id=z.stop
  JOIN route y ON y.num = z.num
  JOIN stops b ON y.stop=b.id
 WHERE a.name='Craiglockhart' AND b.name ='Haymarket'
```

2. Select the code that shows the stops that are on route.num '2A' which can be reached with one bus from Haymarket?

Respuesta:

```
SELECT S2.id, S2.name, R2.company, R2.num
  FROM stops S1, stops S2, route R1, route R2
 WHERE S1.name='Haymarket' AND S1.id=R1.stop
   AND R1.company=R2.company AND R1.num=R2.num
   AND R2.stop=S2.id AND R2.num='2A'
```

3. Select the code that shows the services available from Tollcross?

Respuesta:

```
SELECT a.company, a.num, stopa.name, stopb.name
  FROM route a JOIN route b ON (a.company=b.company AND a.num=b.num)
  JOIN stops stopa ON (a.stop=stopa.id)
  JOIN stops stopb ON (b.stop=stopb.id)
 WHERE stopa.name='Tollcross'
```