MANUAL LMD SQL

SELECT basics

Introducing the world table of countries

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

Modify it to show the population of Germany.

Código:

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

Corrección:

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

Correct answer

population
80716000

Scandinavia

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

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

Código:

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

Corrección:

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

Correct answer

name	population
Denmark	5634437
Norway	5124383
Sweden	9675885

Just the right size

3. Which countries are not too small and not too big? `between` allows range checking (range specified is inclusive of boundary values). The example below shows countries with an area of 250,000-300,000 sq. km.

Modify it to show the country and the area for countries with an area between 200,000 and 250,000.

Código:

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

Corrección:

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

Correct answer

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

SELECT basics - quiz

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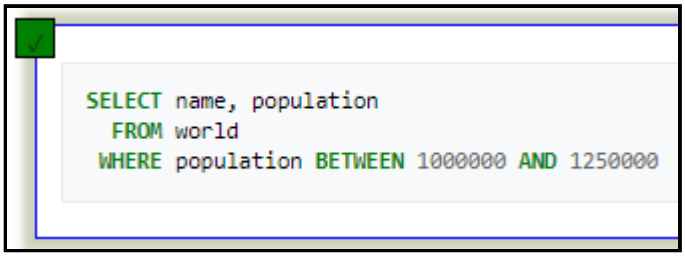
1. Select the code which produces this table:

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:

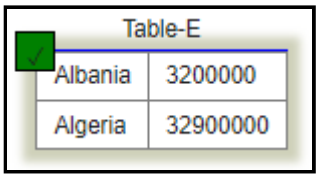
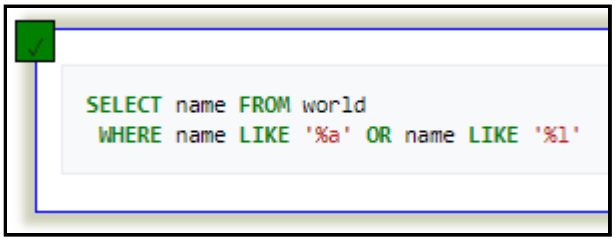


Table-E

Albania	3200000
Algeria	32900000

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

Respuesta:

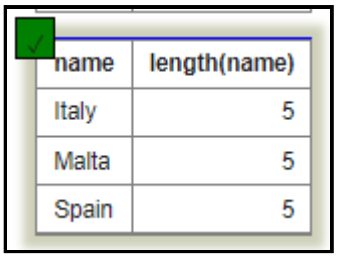


```
SELECT name FROM world
 WHERE name LIKE '%a' OR name LIKE '%l'
```

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

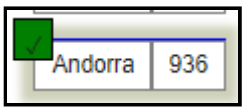
5. Here are the first few rows of the world table:

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;
```

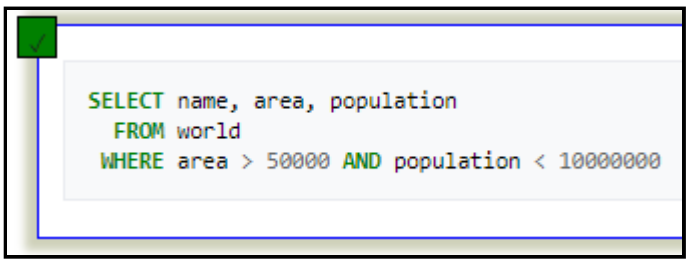
Respuesta:



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:

```
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:

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

Corrección:

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

Correct answer

name
Brazil
China
India
Indonesia
United States

Per capita GDP

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

Respuesta:

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

Correct answer

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

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

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

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

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%';
```

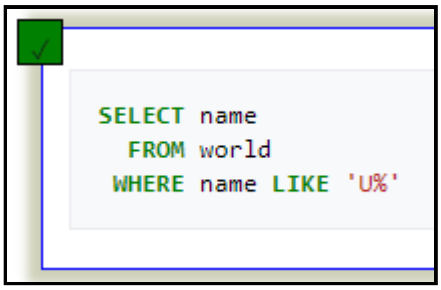
Correct answer

name
Mozambique

SELECT from world - quiz

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

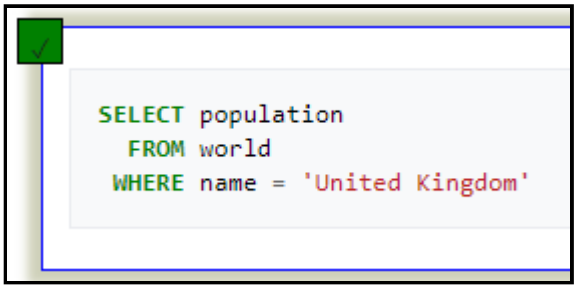
Respuesta:



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

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

Respuesta:

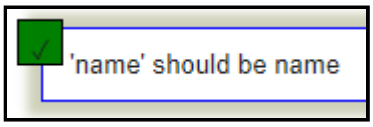


```
SELECT population
  FROM world
 WHERE name = 'United Kingdom'
```

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

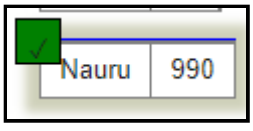
```
select continent from world where 'name'='France';
```

Respuesta:



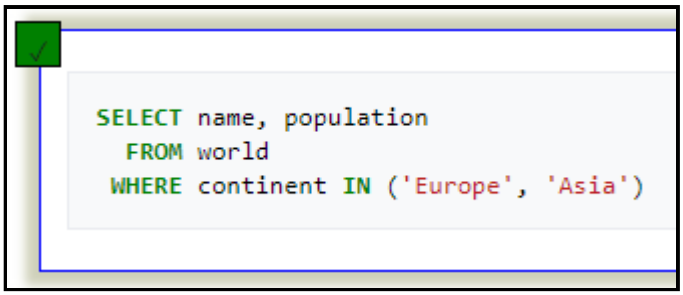
4. Select the result that would be obtained from the following code:

```
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.

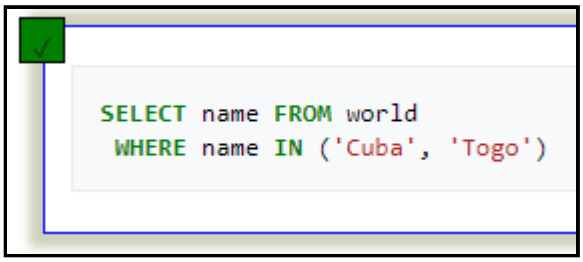
Respuesta:



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

6. Select the code which would give two rows.

Respuesta:

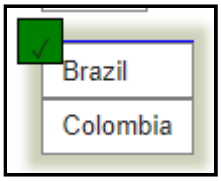


```
SELECT name FROM world
 WHERE name IN ('Cuba', 'Togo')
```

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

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

Respuesta:



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('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');
```

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;
```

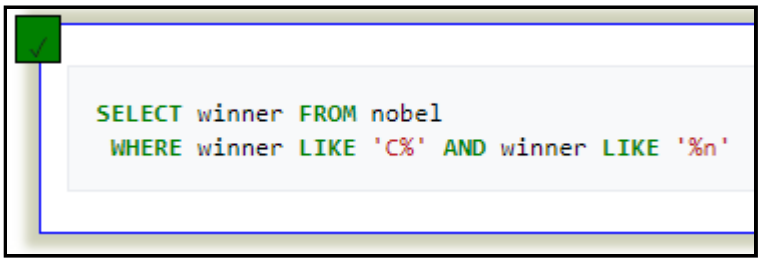
Error:

```
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.

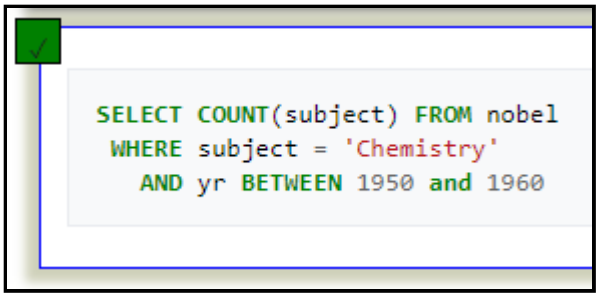
Respuesta:



```
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:



```
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:

```
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:

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.

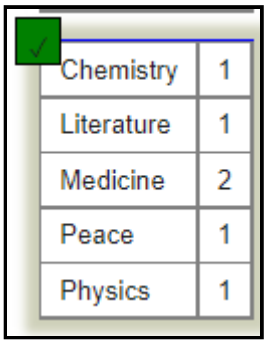
Respuesta:

```
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 <= 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:

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.

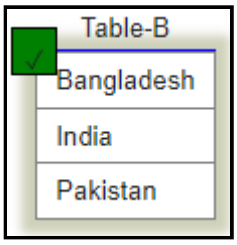
Respuesta:

```
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:



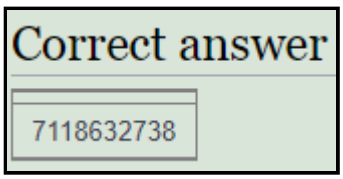
SUM and COUNT

Total world population

1. Show the total population of the world.

Respuesta:

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



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

1811788000000

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

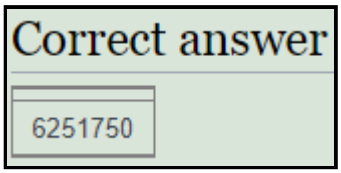
28

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

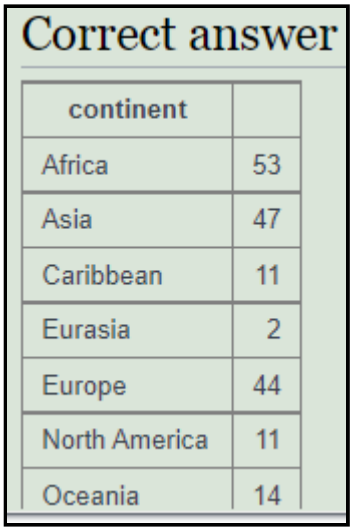
6251750

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;
```

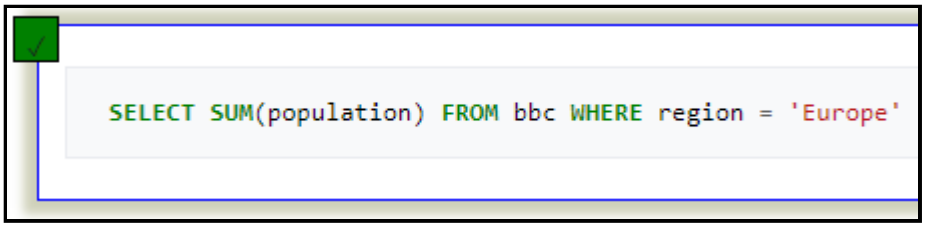
Correct answer

continent
Africa
Asia
Eurasia
Europe
North America
South America

SUM and COUNT - quiz

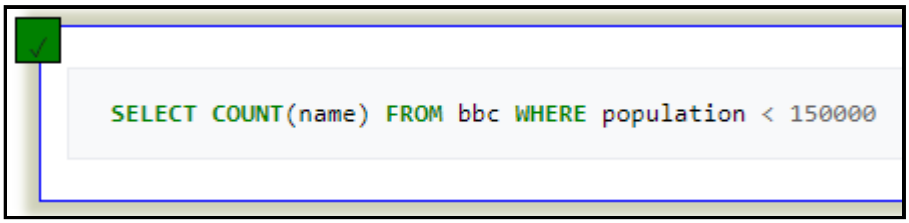
1. Select the statement that shows the sum of population of all countries in 'Europe'.

Respuesta:



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

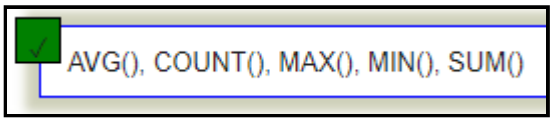
Respuesta:



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

3. Select the list of core SQL aggregate functions.

Respuesta:

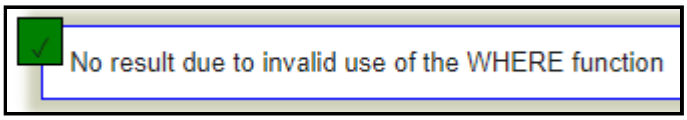


AVG(), COUNT(), MAX(), MIN(), SUM()

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;
```

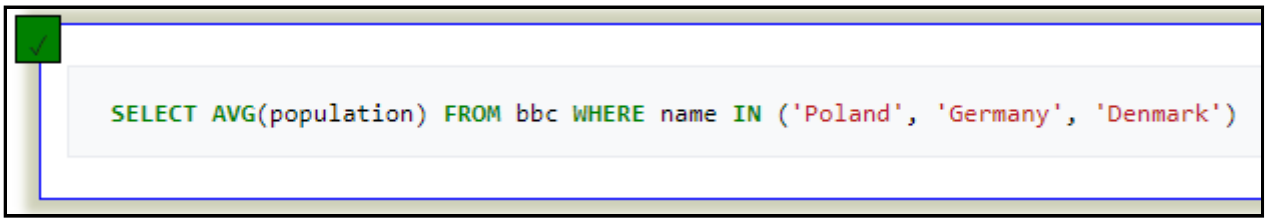
Respuesta:



No result due to invalid use of the WHERE function

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

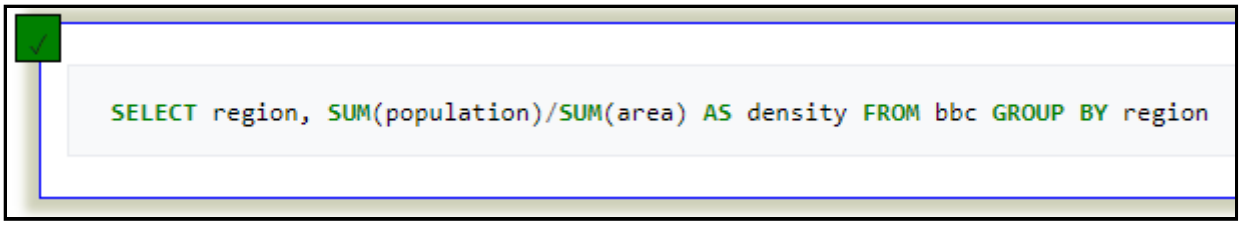
Respuesta:



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

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

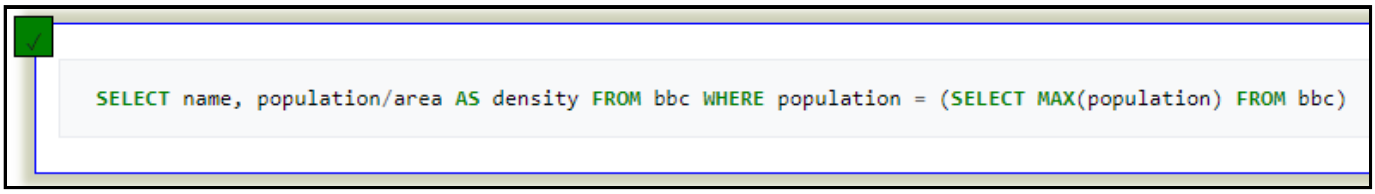
Respuesta:



```
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:

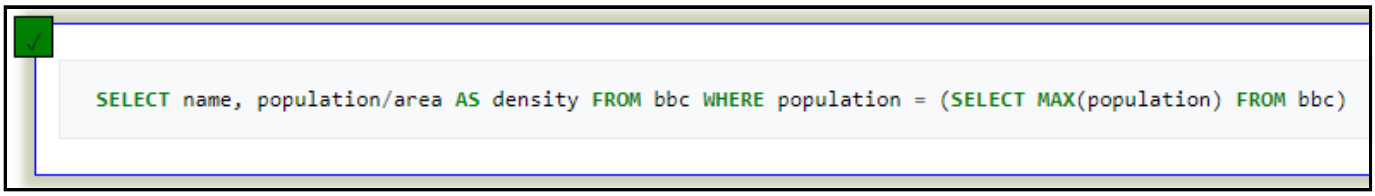


```
SELECT name, population/area AS density FROM bbc WHERE population = (SELECT MAX(population) FROM bbc)
```

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,team 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 Jirácek	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='ger') 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:

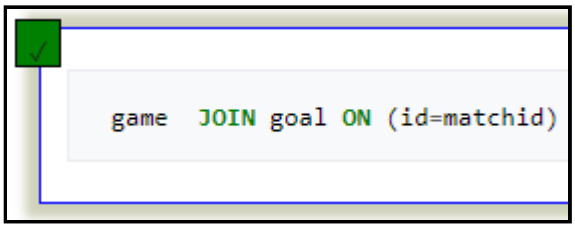
```

```

JOIN - quiz

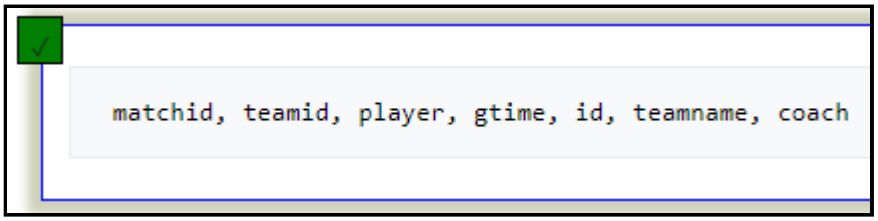
1. You want to find the stadium where player 'Dimitris Salpingidis' scored. Select the JOIN condition to use:

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:



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

Respuesta:

```sql
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:

```sql
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:

```sql
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:

```sql
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: