MODELOS Y BASES DE DATOS SQL BÁSICO GUIA AUTOESTUDIO 1/6

INVESTIGACIÓN

A.SQL ¿QUÉ ES?

Es un tipo de lenguaje de programación que ayuda a solucionar problemas específicos o relacionados con la definición, manipulación e integridad de la información representada por los datos que se almacenan en las bases de datos.

¿PARA QUÉ SIRVE?

Para administrar datos, los cuales están organizados mediante tablas, se pueden consultar, seleccionar, borrar y actualizar los datos.

¿QUÉ ES DML, DDL, DCL, TCL?

-DML: (Data Manipulation Language) Permite recuperar, almacenar, modificar, eliminar, insertar y actualizar datos de una **base de datos**.

-DDL:(Data Definition Language) Permite crear y modificar la estructura de una **base de datos**.

-DCL: (Data Control Language) Permite crear roles, permisos e integridad referencial, así como el control al acceso a la base de datos.

-TCL: (Transactional Control Language) Permite administrar diferentes transacciones que ocurren dentro de una base de datos.

B. MOTOR DE BASES DE DATOS Y BASES DE DATOS ¿QUÉ SON?

MOTOR DE BASES DE DATOS: Es el servicio principal para almacenar, procesar y proteger los datos, proporciona acceso controlado y procesamiento de transacciones rápido para cumplir con los requisitos.

BASES DE DATOS: Se llama base de datos, a un conjunto de información perteneciente a un mismo contexto, ordenada de modo sistemático para su posterior recuperación, análisis y transmisión.

¿QUÉ MOTORES OFRECE SQLZOO.NET?

MySQL, Oracle, SQL Server.

¿QUÉ BASES DE DATOS OFRECE SQLZOO?

Module Feedback

Help Desk
Guest House
Adventure Works
University Timetables
Musicians
Dressmaker
Congestion Charging

PRÁCTICA

- A. Estudien las secciones SELECT, SELECT ... WHERE, SELECT ... GROUP BY, SELECT ... SELECT de la referencia y escriban expresiones para las consultas en cálculo y álgebra, (1,1,1,3).
- B. Estudien la section FUNCTIONS de la referencia, seleccionen 5 funciones y escriban 5 consultas que las utilicen usando la tabla covid.
 - Función concatenate:

Introducing the covid table



Funcion Extracting substrings:



Función lower case:

1.

The example uses a WHERE clause to show the cases in 'Italy' in March.

Modify the query to show data from Spain





Submit SQL

Restore default

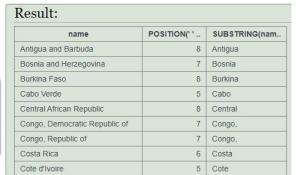
• Función Finding Substring:

1.

The example uses a WHERE clause to show the cases in 'Italy' in March.

Modify the query to show data from Spain





Función Formatting numbers

1.

The example uses a WHERE clause to show the cases in 'Italy' in March.

Modify the query to show data from Spain



Result:

name	confirmed	ROUND(confirm	ROUND(confirm
Iceland	1086	10.86	1090
India	1251	12.51	1250
Indonesia	1414	14.14	1410
Iran	41495	414.95	41500
Iraq	630	6.3	630
Ireland	2910	29.1	2910
Israel	4695	46.95	4700
Italy	101739	1017.39	101740

C. Realicen los ejercicios propuestos en los siguientes tutoriales. Utilice el motor My SQL. (3,13,14,10,8)(7,7,7,7,8)

3:

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.



New Zealand 270467 Show what the answer should be ... Belarus 207600 Ghana 238533 245857 Guinea Guyana 214969 Laos 236800 Romania 238391 Uganda 241550 United Kingdom 242900

• 7

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

13:

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.

- You can use the phrase name NOT LIKE '%a%' to exclude characters from your results.
- The query shown misses countries like Bahamas and Belarus because they contain at least one 'a'





7:



14:

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.

```
SELECT winner, subject, subject IN ('Physics','Chemistry')
FROM nobel
WHERE yr=1984
ORDER BY subject,winner
```

Submit SQL

Restore default

7:

Chemistry	1
Literature	1
Medicine	2
Peace	1
Physics	1

10:

10.

Some countries have populations more than three times that of any of their neighbours (in the same continent). Give the countries and continents.

SELECT name, continent FROM world x WHERE x. population/3 >= ALL(SELECT population FROM world y WHERE y. continent = x. continent AND x. population <> y. population)

Submit SQL

Restore default

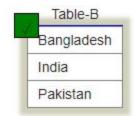
Wrong answer. Too many columns

winner	subject	subject IN ('
Bruce Merrifield	Chemistry	1
Richard Stone	Economics	0
Jaroslav Seifert	Literature	0
César Milstein	Medicine	0
Georges J.F. Köhler	Medicine	0
Niels K. Jerne	Medicine	0
Desmond Tutu	Peace	0
Carlo Rubbia	Physics	1
Simon van der Meer	Physics	1

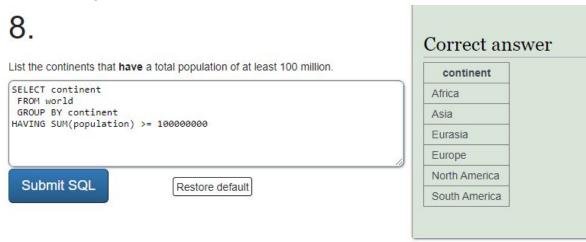
Correct answer

name	continent
Brazil	South America
Russia	Eurasia

7:



• 8:



8:

Table-	D
Americas	732240
Middle East	13403102
South America	17740392
South Asia	9437710

D. De las consultas anteriores, escriban 5 en álgebra y 5 en cálculo.

 π continent(world)

π name, area σ area > 500 (world)

 π continent, σ population > 1000000(world)

πcontinent,sum(area)(world)

{name,area|name,area world \(\) 200000<world[population] <250000}

{name,population|name, population world \land world[continent] = 'South America' \land world[population] > 40000000}

 ${\text{name,population/area|name, population/area world} \land world[name] IN ('China', 'Nigeria', 'Francia', 'Australia')}$

{subject,Count(subject)|subject nobel ∧ nobel[yr] = 1960}

E. Propongan consultas que cumplan los siguientes requerimientos. Use la tabla band de la base de datos musicians.

- SELECT m_name FROM musician WHERE died
- SELECT place_no, place_town FROM place WHERE place country IN ('England');
- SELECT instrument FROM performer WHERE perf_type IN ('classical');
- SELECT instrument FROM performer WHERE perf type IN ('jazz');
- SELECT player FROM plays_in WHERE band_id IN ('1');
- SELECT concert_venue
 FROM concert
 WHERE concert orgniser > 3