



271-[DF]-Lab - Realización de una búsqueda condicional

Datos Generales:

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Este laboratorio muestra cómo usar **SELECT** y una cláusula **WHERE** para filtrar los registros con una búsqueda condicional.

Después de completar este laboratorio, podrá realizar lo siguiente:

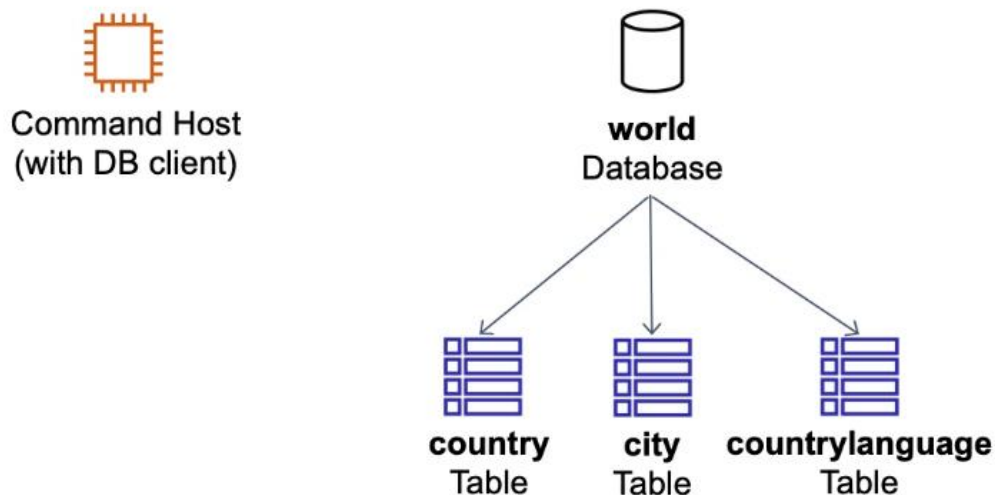
- Escribir una condición de búsqueda usando la cláusula **WHERE**
- Usar el operador **BETWEEN**
- Usar el operador **LIKE** con caracteres de comodín
- Usar el operador **AS** para crear un alias de columna
- Usar funciones en **SELECT**
- Usar funciones en una cláusula **WHERE**

Situación

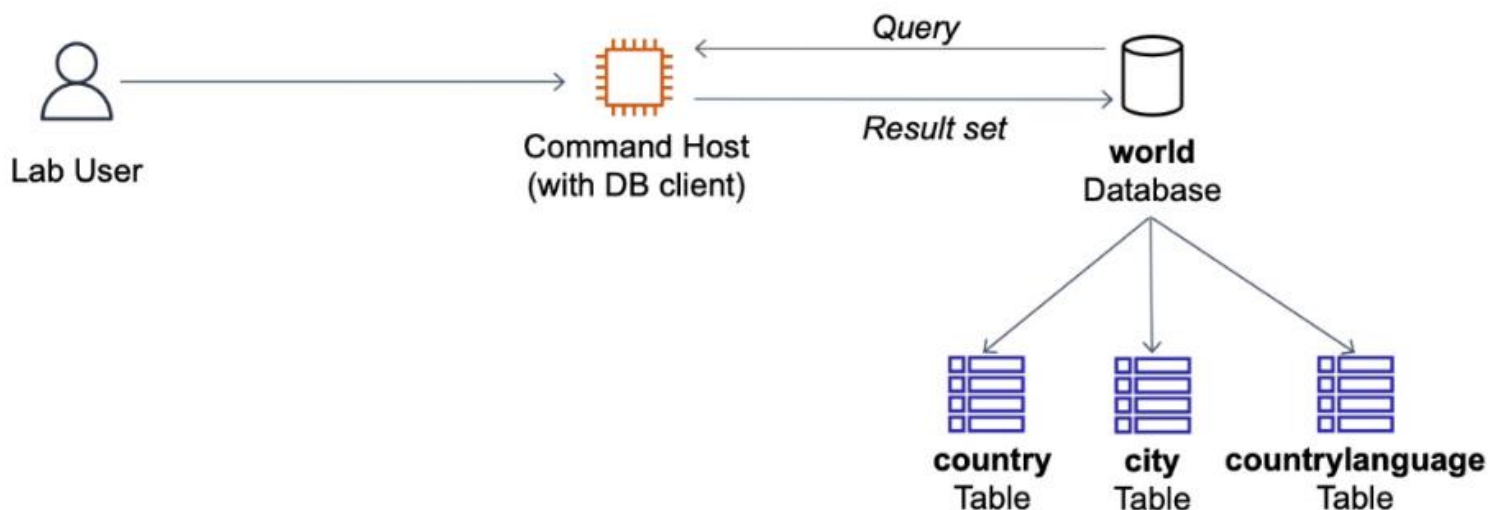
El equipo de operaciones de base de datos creó una base de datos relacional llamada **world** que contiene tres tablas: **city**, **country** y **countrylanguage**. Para ayudar al equipo, escribirá algunas consultas para buscar registros en la tabla **country** usando **SELECT** y una cláusula **WHERE**.

Entorno del laboratorio:

- Una instancia EC2 (Command Host) con un cliente de base de datos instalado.
- Una base de datos **world** que contiene 3 tablas: **city**, **country**, y **countrylanguage**.



Al final de este laboratorio habrá aprendido a usar la cláusula **WHERE**, el operador **BETWEEN** y la función **LIKE** para filtrar registros:

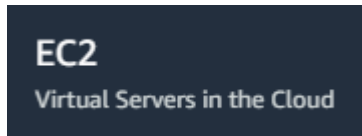


Tarea 1: Conectarse a Command Host

En esta tarea, se conectará a una instancia de EC2 configurada con un cliente de base de datos (Command Host).

El cliente se usa para ejecutar las queries de SQL contra una base de datos relacional.

Paso 1: AWS Management Console → Services → Compute → EC2



Paso 2: Instances → Command Host

<input checked="" type="checkbox"/>	Name ▾	Instance ID	Instance state ▾	Instance type ▾	Status check
<input checked="" type="checkbox"/>	Command Host	i-0524ea72e85aedde0	✓ Running 🔍	t3.micro	✓ 2/2 checks passed

Paso 3: Command Host → Connect → Session Manager

Connect to instance [Info](#)

Connect to your instance i-0524ea72e85aedde0 (Command Host) using any of these options


EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

Session Manager usage:

- Connect to your instance without SSH keys, a bastion host, or opening any inbound ports.
- Sessions are secured using an AWS Key Management Service key.
- You can log session commands and details in an Amazon S3 bucket or CloudWatch Logs log group.
- Configure sessions on the Session Manager [Preferences](#)  page.

Cancel

Connect

Paso 4: Configurar la terminal para acceder a todas las herramientas y recursos necesarios.

```
sudo su  
cd /home/ec2-user/
```

- sudo = ejecutar comandos con privilegios.
- su = cambiar a otro usuario.
- cd = cambiar de directorio.

Session ID: user2741130=Tom__sVillaseca-0ade39e12dc076495

```
sh-4.2$ sudo su  
[root@ip-10-1-11-97 bin]# cd /home/ec2-user/  
[root@ip-10-1-11-97 ec2-user]# pwd  
/home/ec2-user  
[root@ip-10-1-11-97 ec2-user]#
```

Paso 5: Conectarse a la base de datos relacional.

```
mysql -u root --password='re:St@rt!9'
```

- mysql = shell SQL para interactuar con los motores de bases de datos.
- -u = nombre de usuario de MySQL
- -p = contraseña de MySQL

Session ID: user2741130=Tom__sVillaseca-0ade39e12dc076495

Instance ID: i-0524ea72e85aedde0

```
[root@ip-10-1-11-97 ec2-user]# mysql -u root --password='re:St@rt!9'  
Welcome to the MariaDB monitor.  Commands end with ; or \g.  
Your MariaDB connection id is 13  
Server version: 10.6.15-MariaDB MariaDB Server  
  
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.  
  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
MariaDB [(none)]>
```

Tarea 2: Consulte la base de datos world

En esta tarea, consultará la base de datos **world** usando varias **SELECT** y funciones de la base de datos.

Paso 1: Mostrar las bases de datos existentes.

```
SHOW DATABASES;
```

```
MariaDB [(none)]> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
| world |
+-----+
5 rows in set (0.002 sec)
```

Paso 2: Ver el esquema, los datos y la cantidad de filas de la tabla **country**.

```
SHOW COLUMNS FROM world.country;
```

```
MariaDB [(none)]> SHOW COLUMNS FROM world.country;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| Code | char(3) | NO | PRI | | |
| Name | char(52) | NO | | | |
| Continent | enum('Asia','Europe','North America','Africa','Oceania','Antarctica','South America') | NO | | Asia | |
| Region | char(26) | NO | | | |
| SurfaceArea | float(10,2) | NO | | 0.00 | |
| IndepYear | smallint(6) | YES | | NULL | |
| Population | int(11) | NO | | 0 | |
| LifeExpectancy | float(3,1) | YES | | NULL | |
| GNP | float(10,2) | YES | | NULL | |
| GNPOld | float(10,2) | YES | | NULL | |
| LocalName | char(45) | NO | | | |
| GovernmentForm | char(45) | NO | | | |
| HeadOfState | char(60) | YES | | NULL | |
| Capital | int(11) | YES | | NULL | |
| Code2 | char(2) | NO | | | |
+-----+-----+-----+-----+-----+
15 rows in set (0.001 sec)
```

Paso 3: Realizar una consulta reduciendo la cantidad de registros usando una cláusula **WHERE** y el operador **AND**.

```
SELECT Name, Capital, Region, SurfaceArea, Population FROM world.country WHERE Population >= 50000000 AND Population <= 100000000;
```

```
MariaDB [(none)]> SELECT Name, Capital, Region, SurfaceArea, Population FROM world.country WHERE Population >= 50000000 AND Population <= 100000000;
```

Name	Capital	Region	SurfaceArea	Population
Congo, The Democratic Republic of the	2298	Central Africa	2344858.00	51654000
Germany	3068	Western Europe	357022.00	82164700
Egypt	608	Northern Africa	1001449.00	68470000
Ethiopia	756	Eastern Africa	1104300.00	62565000
France	2974	Western Europe	551500.00	59225700
United Kingdom	456	British Islands	242900.00	59623400
Iran	1380	Southern and Central Asia	1648195.00	67702000
Italy	1464	Southern Europe	301316.00	57680000
Mexico	2515	Central America	1958201.00	98881000
Philippines	766	Southeast Asia	300000.00	75967000
Thailand	3320	Southeast Asia	513115.00	61399000
Turkey	3358	Middle East	774815.00	66591000
Ukraine	3426	Eastern Europe	603700.00	50456000
Vietnam	3770	Southeast Asia	331689.00	79832000

```
14 rows in set (0.001 sec)
```

Paso 4: Realizar una consulta que arroje los mismos registros anteriores pero utilizando el operador **BETWEEN**

```
SELECT Name, Capital, Region, SurfaceArea, Population FROM world.country WHERE Population BETWEEN 50000000 AND 100000000;
```

```
MariaDB [(none)]> SELECT Name, Capital, Region, SurfaceArea, Population FROM world.country WHERE Population BETWEEN 50000000 AND 100000000;
```

Name	Capital	Region	SurfaceArea	Population
Congo, The Democratic Republic of the	2298	Central Africa	2344858.00	51654000
Germany	3068	Western Europe	357022.00	82164700
Egypt	608	Northern Africa	1001449.00	68470000
Ethiopia	756	Eastern Africa	1104300.00	62565000
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Turkey	3358	Middle East	774815.00	66591000
Ukraine	3426	Eastern Europe	603700.00	50456000
Vietnam	3770	Southeast Asia	331689.00	79832000

```
14 rows in set (0.000 sec)
```

Paso 5: Realizar una consulta que arroje la población de todos los países europeos usando la función **LIKE** y la función **SUM**

```
SELECT sum(Population) from world.country WHERE Region LIKE "%Europe%";
```

```
MariaDB [(none)]> SELECT sum(Population) from world.country WHERE Region LIKE "%Europe%";
```

sum(Population)
634947800

```
1 row in set (0.000 sec)
```


Paso 6: Realizar una consulta que arroje la misma información anterior con un **alias** de columna.

```
SELECT sum(population) as "Europe Population Total" from world.country WHERE region LIKE "%Europe%";
```

```
MariaDB [(none)]> SELECT sum(population) as "Europe Population Total" from world.country WHERE region LIKE "%Europe%";
+-----+
| Europe Population Total |
+-----+
|          634947800 |
+-----+
1 row in set (0.001 sec)
```

Paso 7: Realizar una consulta que distinga entre mayúsculas y minúsculas usando la función **LOWER**

```
SELECT Name, Capital, Region, SurfaceArea, Population from world.country WHERE LOWER(Region) LIKE "%central%";
```

```
MariaDB [(none)]> SELECT Name, Capital, Region, SurfaceArea, Population from world.country WHERE LOWER(Region) LIKE "%central%";
+-----+-----+-----+-----+-----+
| Name | Capital | Region | SurfaceArea | Population |
+-----+-----+-----+-----+-----+
| Afghanistan | 1 | Southern and Central Asia | 652090.00 | 22720000 |
| Angola | 56 | Central Africa | 1246700.00 | 12878000 |
| Bangladesh | 150 | Southern and Central Asia | 143998.00 | 129155000 |
| Belize | 185 | Central America | 22696.00 | 241000 |
| Bhutan | 192 | Southern and Central Asia | 47000.00 | 2124000 |
| Central African Republic | 1889 | Central Africa | 622984.00 | 3615000 |
| Cameroon | 1804 | Central Africa | 475442.00 | 15085000 |
| Congo, The Democratic Republic of the | 2298 | Central Africa | 2344858.00 | 51654000 |
| Congo | 2296 | Central Africa | 342000.00 | 2943000 |
| Costa Rica | 584 | Central America | 51100.00 | 4023000 |
| Gabon | 902 | Central Africa | 267668.00 | 1226000 |
| Equatorial Guinea | 2972 | Central Africa | 28051.00 | 453000 |
| Guatemala | 922 | Central America | 108889.00 | 11385000 |
| Honduras | 933 | Central America | 112088.00 | 6485000 |
| India | 1109 | Southern and Central Asia | 3287263.00 | 1013662000 |
| Iran | 1380 | Southern and Central Asia | 1648195.00 | 67702000 |
| Kazakstan | 1864 | Southern and Central Asia | 2724900.00 | 16223000 |
| Kyrgyzstan | 2253 | Southern and Central Asia | 199900.00 | 4699000 |
| Sri Lanka | 3217 | Southern and Central Asia | 65610.00 | 18827000 |
| Maldives | 2463 | Southern and Central Asia | 298.00 | 286000 |
| Mexico | 2515 | Central America | 1958201.00 | 98881000 |
| Nicaragua | 2734 | Central America | 130000.00 | 5074000 |
| Nepal | 2729 | Southern and Central Asia | 147181.00 | 23930000 |
| Pakistan | 2831 | Southern and Central Asia | 796095.00 | 156483000 |
| Panama | 2882 | Central America | 75517.00 | 2856000 |
| El Salvador | 645 | Central America | 21041.00 | 6276000 |
| Sao Tome and Principe | 3172 | Central Africa | 964.00 | 147000 |
| Chad | 3337 | Central Africa | 1284000.00 | 7651000 |
| Tajikistan | 3261 | Southern and Central Asia | 143100.00 | 6188000 |
| Turkmenistan | 3419 | Southern and Central Asia | 488100.00 | 4459000 |
| Uzbekistan | 3503 | Southern and Central Asia | 447400.00 | 24318000 |
+-----+-----+-----+-----+-----+
31 rows in set (0.000 sec)
```

Desafió

Escriba una consulta para arrojar la suma del área de superficie y de la población de Norteamérica.

```
SELECT SUM(SurfaceArea) as "N. America Surface Area", SUM(Population) as "N. America Population" FROM world.country WHERE Region = "North America";
```

```
MariaDB [(none)]> SELECT SUM(SurfaceArea) as "N. America  
+-----+-----+  
| N. America Surface Area | N. America Population |  
+-----+-----+  
|          21500515.00 |          309632000 |  
+-----+-----+  
1 row in set (0.000 sec)
```

Laboratorio Completado

