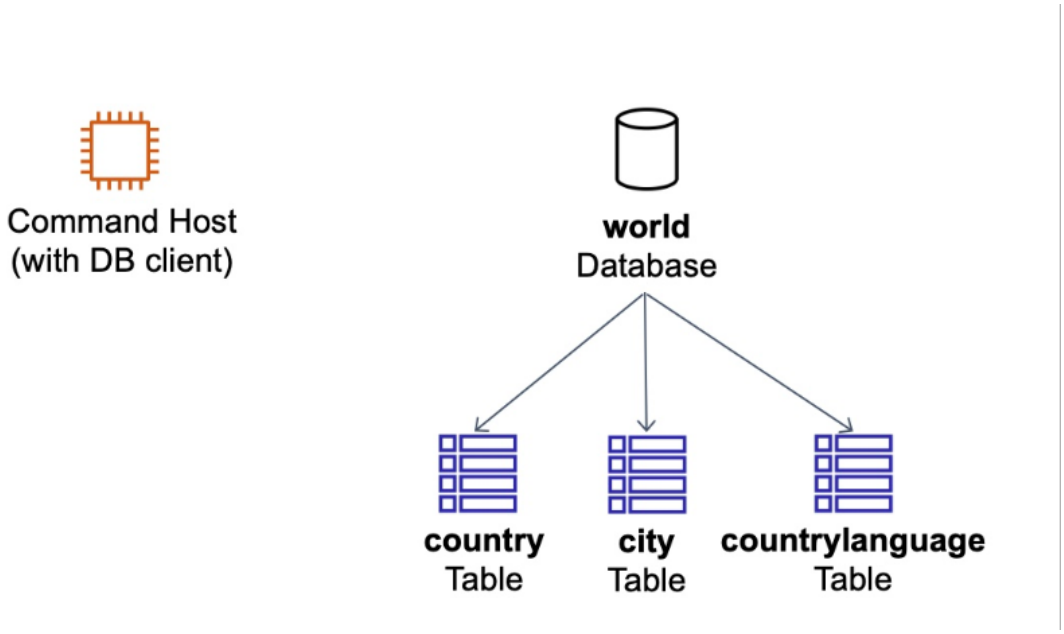
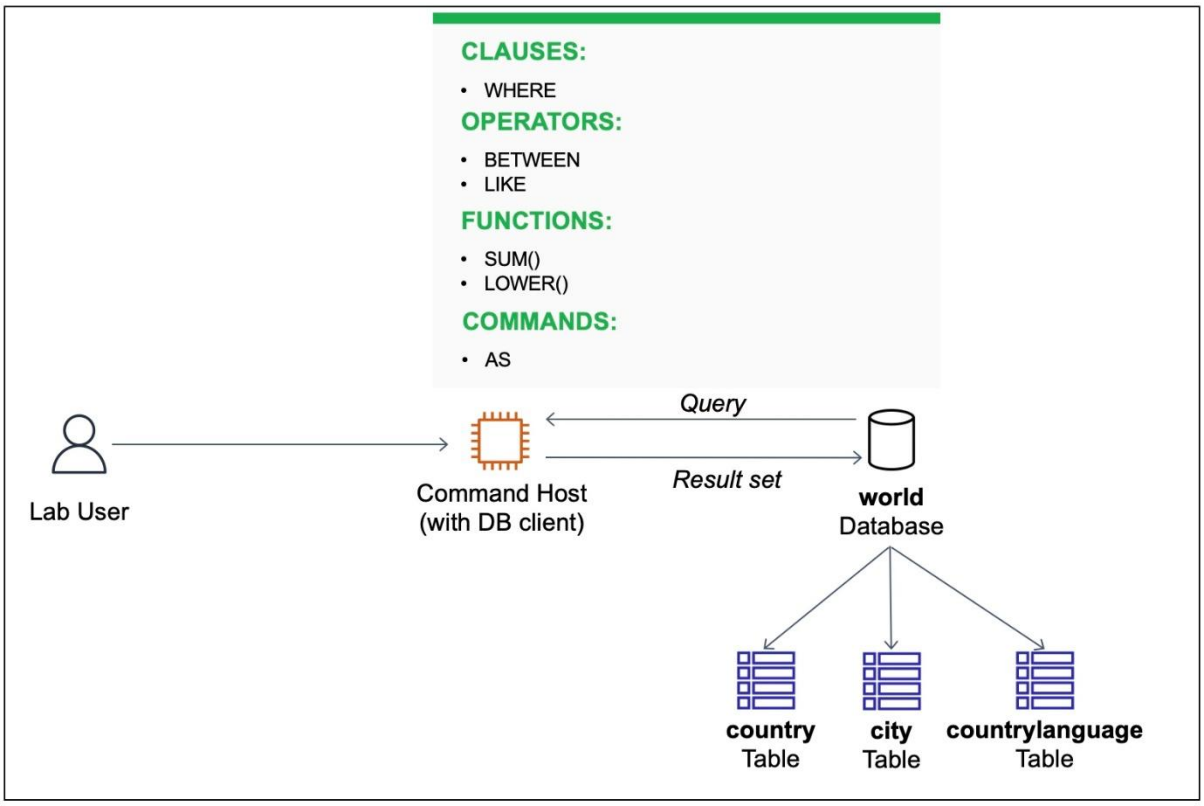
Performing a Conditional Search



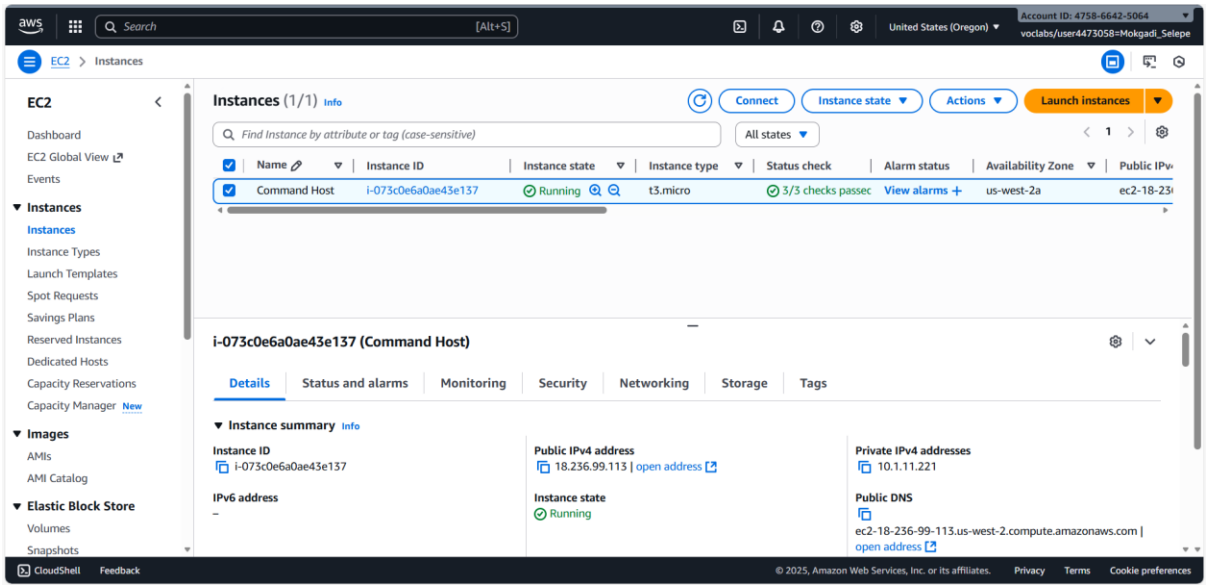
*The Command Host instance has a DB client installed. You will use the Command Host to query the **world** database, which contains three tables.*

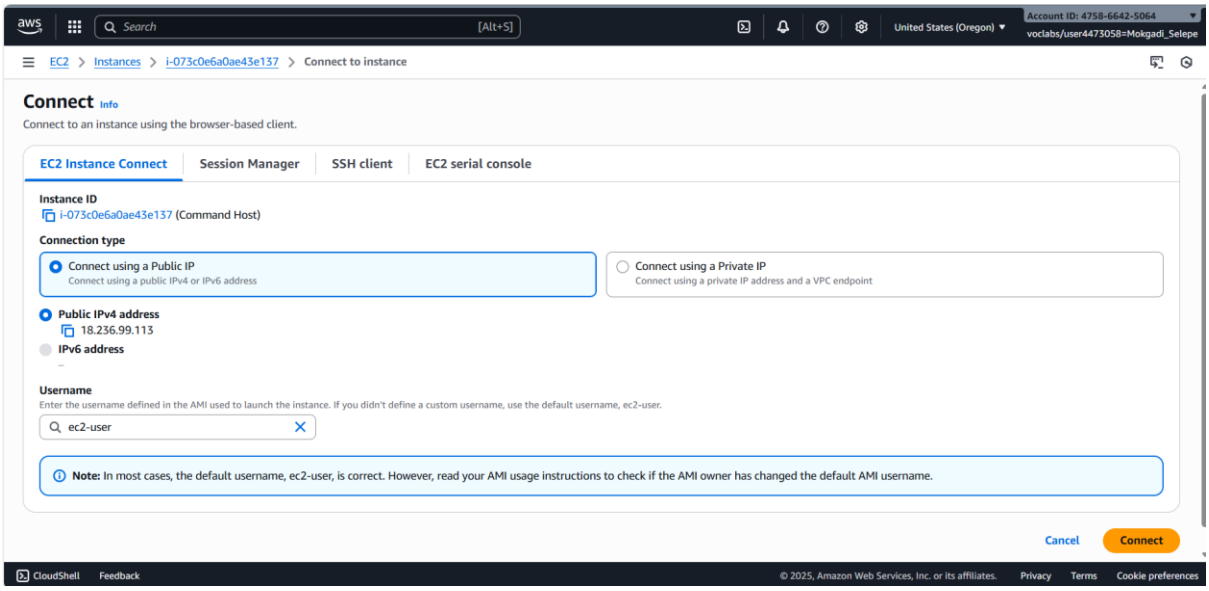
At the end of this lab, you will have learned how to use the **WHERE** clause, **BETWEEN** operator, and **LIKE** function to filter records:

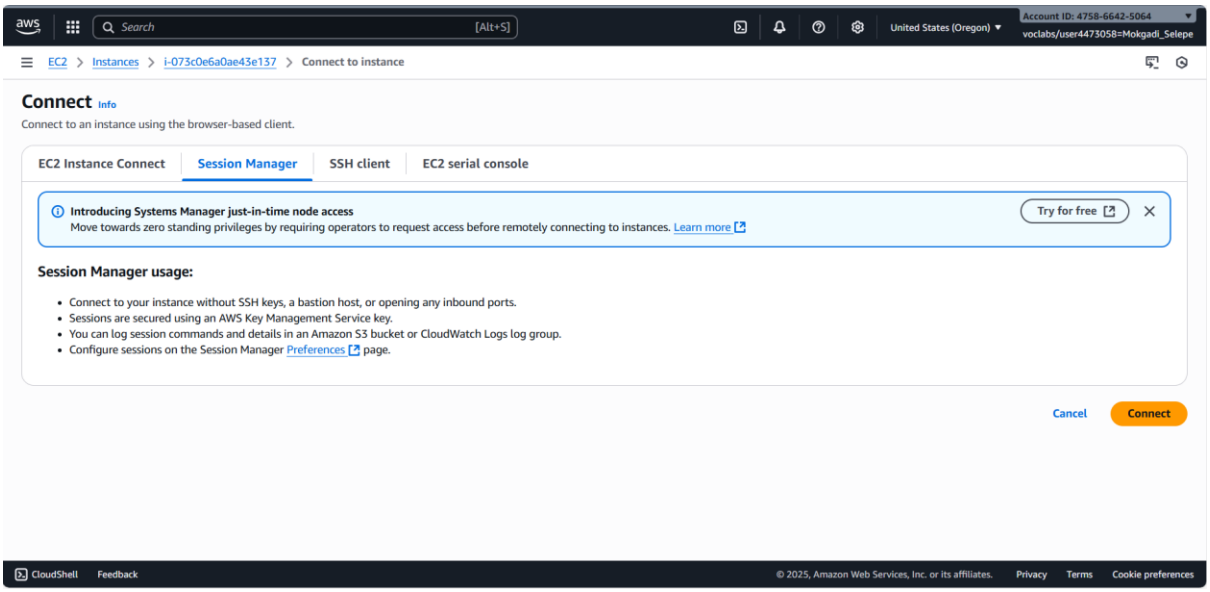


*A lab user connects to a Command Host instance to query the tables in the **world** database.*

Sample data in this course is taken from Statistics Finland, General regional statistics, February 4, 2022.


Search [Alt+S]
United States (Oregon)
Account ID: 4758-6642-5064
voclabs/user4473058=Mokgadi_Selepe
EC2 > Instances
EC2
Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Capacity Manager New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv
Command Host
i-073c0e6a0ae43e137
Running
t3.micro
3/3 checks passed
View alarms
us-west-2a
i-073c0e6a0ae43e137 (Command Host)
Details
Status and alarms
Monitoring
Security
Networking
Storage
Tags
Instance summary Info
Instance ID
i-073c0e6a0ae43e137
IPv6 address
Public IPv4 address
18.236.99.113 | open address
Instance state
Running
Private IPv4 addresses
10.1.11.221
Public DNS
ec2-18-236-99-113.us-west-2.compute.amazonaws.com | open address
CloudShell
Feedback
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


Search [Alt+S]
United States (Oregon)
Account ID: 4758-6642-5064
voclabs/user4473058=Mokgadi_Selepe
EC2 > Instances > i-073c0e6a0ae43e137 > Connect to instance
Connect Info
Connect to an instance using the browser-based client.
EC2 Instance Connect
Session Manager
SSH client
EC2 serial console
Instance ID
i-073c0e6a0ae43e137 (Command Host)
Connection type
Connect using a Public IP
Connect using a public IPv4 or IPv6 address
Connect using a Private IP
Connect using a private IP address and a VPC endpoint
Public IPv4 address
18.236.99.113
IPv6 address
Username
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ec2-user.
ec2-user
Note: In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.
Cancel
Connect
CloudShell
Feedback
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


Search [Alt+S]
United States (Oregon)
Account ID: 4758-6642-5064
voclabs/user4473058=Mokgadi_Selepe
EC2 > Instances > i-073c0e6a0ae43e137 > Connect to instance
Connect Info
Connect to an instance using the browser-based client.
EC2 Instance Connect
Session Manager
SSH client
EC2 serial console
Introducing Systems Manager just-in-time node access
Move towards zero standing privileges by requiring operators to request access before remotely connecting to instances. Learn more
Try for free
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
CloudShell
Feedback
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Privacy
Terms
Cookie preferences

1: Connect to the Command Host

```
Session ID: user4473058=Mokgadi_Selepe-lby95vdn444pjiqxokj3bjpg8a   Shortcuts   Instance ID: i-073c0e6a0ae43e137   Terminate

sh-4.2$
```

```
Session ID: user4473058=Mokgadi_Selepe-lby95vdn444pjiqxokj3bjpg8a   Shortcuts   Instance ID: i-073c0e6a0ae43e137   Terminate

sh-4.2$ sudo su
[root@ip-10-1-11-221 bin]# cd /home/ec2-user/
[root@ip-10-1-11-221 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 5
Server version: 10.5.29-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)]>
```

Connected to a special computer in the cloud!

Here's what happened:

1. Found the Command Host: Located a computer instance in the AWS cloud that has a database client installed.
2. Connected to the Command Host: Used a tool called Session Manager to open a terminal window and access the Command Host.
3. Configured the terminal: Ran a command to set up the terminal so you can use all the necessary tools.
4. Connected to the database: Used a command to connect to a database server, using a username and password.

Now I am connected to the database and can start working with it!

2: Query the world database

```
MariaDB [(none)]> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| world              |
+--------------------+
4 rows in set (0.001 sec)

MariaDB [(none)]> SELECT * FROM world.country;
+------+----------------------------------------------+---------------+---------------------------+-------------+-----------+------------+----------------+------------+---
---------+----------------------------------------------+-------------------------------------------+-------------------------------+---------+-------+
| Code | Name                                         | Continent     | Region                    | SurfaceArea | IndepYear | Population | LifeExpectancy | GNP        | GN
POld     | LocalName                                    | GovernmentForm                            | HeadOfState                   | Capital | Code2 |
+------+----------------------------------------------+---------------+---------------------------+-------------+-----------+------------+----------------+------------+---
---------+----------------------------------------------+-------------------------------------------+-------------------------------+---------+-------+
| ABW  | Aruba                                        | North America | Caribbean                 |      193.00 |      NULL |     103000 |           78.4 |     828.00 |
  793.00 | Aruba                                        | Nonmetropolitan Territory of The Netherlands | Beatrix                    |     129 | AW    |
| AFG  | Afghanistan                                  | Asia          | Southern and Central Asia |   652090.00 |      1919 |   22720000 |           45.9 |    5976.00 |
    NULL | Afganistan/Afqanestan                        | Islamic Emirate                           | Mohammad Omar                 |       1 | AF    |
| AGO  | Angola                                       | Africa        | Central Africa            |  1246700.00 |      1975 |   12878000 |           38.3 |    6648.00 |
 7984.00 | Angola                                       | Republic                                  | JosÃ© Eduardo dos Santos      |      56 | AO    |
| AIA  | Anguilla                                     | North America | Caribbean                 |       96.00 |      NULL |       8000 |           76.1 |      63.20 |
    NULL | Anguilla                                     | Dependent Territory of the UK             | Elisabeth II                  |      62 | AI    |
| ALB  | Albania                                      | Europe        | Southern Europe           |    28748.00 |      1912 |    3401200 |           71.6 |    3205.00 |
 2500.00 | ShqipÃ«ria                                   | Republic                                  | Rexhep Mejdani                |      34 | AL    |
| AND  | Andorra                                      | Europe        | Southern Europe           |      468.00 |      1278 |      78000 |           83.5 |    1630.00 |
    NULL | Andorra                                      | Parliamentary Coprincipality              |                               |      55 | AD    |
| ANT  | Netherlands Antilles                         | North America | Caribbean                 |      800.00 |      NULL |     217000 |           74.7 |    1941.00 |
    NULL | Nederlandse Antillen                         | Nonmetropolitan Territory of The Netherlands | Beatrix                    |      33 | AN    |
| ARE  | United Arab Emirates                         | Asia          | Middle East               |    83600.00 |      1971 |    2441000 |           74.1 |   37966.00 |
36846.00 | Al-Imarat al-Ã´Arabiya al-Muttahida          | Emirate Federation                        | Zayid bin Sultan al-Nahayan   |      65 | AE    |
| YUG  | Yugoslavia                                   | Europe        | Southern Europe           |   102173.00 |      1918 |   10640000 |           72.4 |   17000.00 |
    NULL | Jugoslavija                                  | Federal Republic                          | Vojislav KoÅ¡tunica           |    1792 | YU    |
| ZAF  | South Africa                                 | Africa        | Southern Africa           |  1221037.00 |      1910 |   40377000 |           51.1 |  116729.00 |  1
29092.00 | South Africa                                 | Republic                                  | Thabo Mbeki                   |     716 | ZA    |
| ZMB  | Zambia                                       | Africa        | Eastern Africa            |   752618.00 |      1964 |    9169000 |           37.2 |    3377.00 |
 3922.00 | Zambia                                       | Republic                                  | Frederick Chiluba             |    3162 | ZM    |
| ZWE  | Zimbabwe                                     | Africa        | Eastern Africa            |   390757.00 |      1980 |   11669000 |           37.8 |    5951.00 |
 8670.00 | Zimbabwe                                     | Republic                                  | Robert G. Mugabe              |    4068 | ZW    |
+------+----------------------------------------------+---------------+---------------------------+-------------+-----------+------------+----------------+------------+---
---------+----------------------------------------------+-------------------------------------------+-------------------------------+---------+-------+
239 rows in set (0.001 sec)
```

```
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)

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 |
| 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)

MariaDB [(none)]> SELECT sum(Population) from world.country WHERE Region LIKE "%Europe%";
+-----------------+
| sum(Population) |
+-----------------+
|       634947800 |
+-----------------+
1 row in set (0.000 sec)

MariaDB [(none)]> SELECT sum(population) as "Europe Population Total" from world.country WHERE region LIKE "%Europe%";
+------------------------+
| Europe Population Total |
+------------------------+
|              634947800 |
+------------------------+
1 row in set (0.000 sec)

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 |
| 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 (0.001 sec)
```

Queried the world database and got some interesting results!

Here's what happened:

1. Checked the available databases: Ran a command to see the existing databases, and verified that the "world" database is available.
2. Explored the country table: Ran queries to see all rows and columns in the country table, and got info on the number of rows and specific columns.
3. Filtered the data: Used WHERE clauses and operators like AND, >=, <=, and BETWEEN to get specific data, like countries with population between 50 million and 100 million.
4. Searched for patterns: Used the LIKE function to search for string patterns, like countries in Europe.
5. Calculated totals: Used the SUM function to calculate the total population of European countries.
6. Made the output readable: Used column aliases to make the output easier to read.

7. Handled case sensitivity: Used the LOWER function to perform case-sensitive searches.

Now I have got a better understanding of the world database and can play around with it some more!"

Challenge

```
MariaDB [(none)]> SELECT SUM(SurfaceArea) as "N. America Surface Area", SUM(Population) as "N. America Population" FROM world.country WHERE Region = "North America";
+-------------------------+-------------------------+
| N. America Surface Area | N. America Population |
+-------------------------+-------------------------+
|             21500515.00 |             309632000 |
+-------------------------+-------------------------+
1 row in set (0.000 sec)
```

I answered a question about North America!

Here's what happened:

1. Wrote a query: Created a query to get the total surface area and total population of North America.
2. Used the SUM function: Used the SUM function to add up the surface areas and populations of all countries in North America.
3. Filtered by region: Used the WHERE clause to only include countries in the "North America" region.
4. Got the results: Ran the query and got the total surface area and total population of North America.

The query said: "Hey database, give me the total surface area and total population of countries in North America."

And the database said: "Here are the totals: [surface area] km^2 and [population] people.
