

MySQL exercises

1. How many cities in the City table?

Enter this query:

```
SELECT COUNT(Id) AS 'Number of Cities' FROM City;
```

So, for each question you need to record the query you used and the answer.

Here is another example

2. What is the most populated city? (Display only the Name and Population fields)

Query to try: First the maximum population

```
SELECT max(`Population`) FROM `City`;
```

Now, how do we get the Name of the city as well?

Try,

```
SELECT max(`Population`) as "Maximum Population", Name FROM `City`;
```

Screenshot below

The screenshot shows a MySQL query editor with the following SQL query:

```
SELECT MAX(`Population`) AS "Maximum Population", Name  
FROM `City`
```

Below the query, there are input fields for "Show : Start row: 0", "Number of rows: 30", and "Headers every 100 rows".

Below the input fields, there is a "+ Options" button and a table showing the result:

Maximum Population	Name
10500000	Kabul

We need to check this result. Run this query:

```
SELECT Population, Name FROM `City`
```

```
WHERE `Population` >= 10500000;
```

This gives

The screenshot shows a MySQL query editor with the following SQL query:

```
SELECT Population, Name FROM `City`  
WHERE `Population` >= 10500000;
```

Below the query, there is a "+ Options" button and a table showing the result:

Population	Name
10500000	Mumbai (Bombay)

Your turn

3. Find the least populated city.

- **Query:** [SELECT Name, Population FROM city WHERE Population = \(SELECT MIN\(Population\) FROM city\);](#)

```
+-----+-----+  
| Name      | Population |  
+-----+-----+  
| Adamstown |         42 |  
+-----+-----+  
1 row in set (0.005 sec)
```

4. Find all cities with a population above one million people.

Query: SELECT city.Name AS City, country.Name AS Country, city.Population
FROM city
JOIN country ON city.CountryCode = country.Code
WHERE city.Population > 1000000
ORDER BY city.Population DESC;

note// Included the country name

City	Country	Population
Mumbai (Bombay)	India	10500000
Seoul	South Korea	9981619
São Paulo	Brazil	9968485
Shanghai	China	9696300
Jakarta	Indonesia	9604900
Karachi	Pakistan	9269265
Istanbul	Turkey	8787958
Ciudad de México	Mexico	8591309
Moscow	Russian Federation	8389200
New York	United States	8008278
Tokyo	Japan	7980230
Peking	China	7472000
London	United Kingdom	7285000
Delhi	India	7206704
Cairo	Egypt	6789479
Teheran	Iran	6758845
Lima	Peru	6464693
Chongqing	China	6351600
Bangkok	Thailand	6320174
Santafé de Bogotá	Colombia	6260862
Rio de Janeiro	Brazil	5598953
Tianjin	China	5286800
Kinshasa	Congo, The Democratic Republic of the	5064000
Lahore	Pakistan	5063499
Santiago de Chile	Chile	4703954
St Petersburg	Russian Federation	4694000
Calcutta [Kolkata]	India	4399819
Wuhan	China	4344600
Baghdad	Iraq	4336000
Harbin	China	4289800
Shenyang	China	4265200
Kanton [Guangzhou]	China	4256300
Singapore	Singapore	4017733
Ho Chi Minh City	Vietnam	3980000
Chennai (Madras)	India	3841396
Pusan	South Korea	3804522
Los Angeles	United States	3694820
Dhaka	Bangladesh	3612850
Berlin	Germany	3386667
Rangoon (Yangon)	Myanmar	3361700
Chengdu	China	3361500
Jokohama [Yokohama]	Japan	3339594
Alexandria	Egypt	3328196
Riyadh	Saudi Arabia	3324000
Sydney	Australia	3276207
Ankara	Turkey	3038159

There's more... (237 all together)

5. Find all cities that begin with Kal.

[SELECT Name, Population FROM city WHERE Name LIKE 'Kal%' ORDER BY Name;](#)

+-----+-----+	
Name	Population
+-----+-----+	
Kalemie	101309
Kaliningrad	424400
Kalisz	106641
Kallithea	114233
Kalookan	1177604
Kaluga	339300
Kalyan	1014557
+-----+-----+	
7 rows in set (0.007 sec)	

6. Find all cities with a population in the range 670,000 to 700,000

[SELECT Name, Population](#)
[FROM city](#)
[WHERE Population BETWEEN 670000 AND 700000;](#)

+-----+-----+	
Name	Population
+-----+-----+	
Teresina	691942
Natal	688955
Bandar Lampung	680332
Gwalior	690765
Kermanshah	692986
Palermo	683794
Toronto	688275
Huainan	700000
Jixi	683885
Antananarivo	675669
Chihuahua	670208
Kano	674100
Tunis	690600
+-----+-----+	
13 rows in set (0.005 sec)	

7. Find the 10 most populated cities. Order the data by population from the most populated to the least populated city (descending order). Hint: limit the output with the LIMIT clause.

```
SELECT Name, Population  
FROM city  
ORDER BY Population DESC  
LIMIT 10;
```

Name	Population
Mumbai (Bombay)	10500000
Seoul	9981619
São Paulo	9968485
Shanghai	9696300
Jakarta	9604900
Karachi	9269265
Istanbul	8787958
Ciudad de México	8591309
Moscow	8389200
New York	8008278

10 rows in set (0.004 sec)

8. Find the 10 least populated cities. Order the data by population from the most populated to the least populated city (ascending order).

```
SELECT Name, Population  
FROM city  
ORDER BY Population ASC  
LIMIT 10;
```

```
mysql> SELECT Name, Population  
-> FROM city  
-> ORDER BY Population ASC  
[ -> LIMIT 10;
```

Name	Population
Adamstown	42
West Island	167
Fakaofo	300
Città del Vaticano	455
Bantam	503
Yaren	559
The Valley	595
Alofi	682
Flying Fish Cove	700
Kingston	800

9. Find all Cities that belong to the New York District. Display the Name, District and Population fields.

SELECT Name, District, Population
FROM city
WHERE District = 'New York';

```
mysql> SELECT Name, District, Population
-> FROM city
[ -> WHERE District = 'New York';
```

Name	District	Population
New York	New York	8008278
Buffalo	New York	292648
Rochester	New York	219773
Yonkers	New York	196086
Syracuse	New York	147306
Albany	New York	93994

6 rows in set (0.005 sec)

10. Find the population of each district in the USA.

Choose the country table

SELECT District, SUM(Population) AS Total_Population
FROM city
WHERE CountryCode = 'USA'
GROUP BY District;

```
mysql> SELECT District, SUM(Population) AS T
-> FROM city
-> WHERE CountryCode = 'USA'
[ -> GROUP BY District;
```

District	Total_Population
New York	8958085
California	16716706
Illinois	3737498
Texas	9208281
Pennsylvania	2062462
Arizona	3178903
Michigan	1870428
Indiana	1329770
Florida	3151408
Ohio	2218030
Maryland	651154
Tennessee	1658222
Wisconsin	996788
Massachusetts	1399381
District of Columbia	572059
Washington	1205688
Colorado	1851149
North Carolina	1625851
Oregon	803938
Oklahoma	993374
Louisiana	1172322
Nevada	1169827
New Mexico	448607
Missouri	1054602
Virginia	1880264
Georgia	1148875
Nebraska	615588
Minnesota	669769
Hawaii	371657
Kansas	762607
New Jersey	783391
Kentucky	516743
Alaska	260283
Alabama	801519
Iowa	417696
Idaho	185787
Mississippi	184256
Arkansas	183133
Utah	497658
Rhode Island	173618
Connecticut	609087
South Dakota	123975
South Carolina	205341
New Hampshire	107006
Montana	92988

45 rows in set (0.007 sec)

11. How many countries are in this table?

[SELECT COUNT\(*\) AS Country_Count](#)
[FROM country;](#)

```
mysql> SELECT COUNT(*) AS Country_Count
[    -> FROM country;
+-----+
| Country_Count |
+-----+
|           239 |
+-----+
1 row in set (0.006 sec)
```

12. Which country has the largest population?

[SELECT Name, Population](#)
[FROM country](#)
[ORDER BY Population DESC](#)
[LIMIT 1;](#)

```
mysql> SELECT Name, Population
      -> FROM country
      -> ORDER BY Population DESC
[    -> LIMIT 1;
+-----+-----+
| Name   | Population |
+-----+-----+
| China  | 1277558000 |
+-----+-----+
1 row in set (0.001 sec)
```

13. Which country has the smallest population?

[SELECT Name, Population](#)
[FROM country](#)
[WHERE Population > 0](#)
[ORDER BY Population ASC](#)
[LIMIT 1;](#)

```
mysql> SELECT Name, Population
      -> FROM country
      -> WHERE Population > 0
      -> ORDER BY Population ASC
[    -> LIMIT 1;
+-----+-----+
| Name      | Population |
+-----+-----+
| Pitcairn  |          50 |
+-----+-----+
1 row in set (0.005 sec)
```

14. Find all countries with a population above five million people.

SELECT Name, Population
FROM country
WHERE Population > 5000000;

```
mysql> SELECT Name, Population  
      -> FROM country  
[      -> WHERE Population > 5000000;
```

Name	Population
Afghanistan	22720000
Angola	12878000
Argentina	37032000
Australia	18886000
Austria	8091800
Azerbaijan	7734000
Burundi	6695000
Belgium	10239000
Benin	6097000
Burkina Faso	11937000
Bangladesh	129155000
Bulgaria	8190900
Belarus	10236000
Bolivia	8329000
Brazil	170115000
Canada	31147000
Switzerland	7160400
Chile	15211000
China	1277558000
Côte d'Ivoire	14786000
Cameroon	15085000
Congo, The Democratic Republic of the	51654000
Colombia	42321000
Cuba	11201000
Czech Republic	10278100
Germany	82164700
Denmark	5330000
Dominican Republic	8495000
Algeria	31471000
Ecuador	12646000
Egypt	68470000
Spain	39441700
Ethiopia	62565000
Finland	5171300
France	59225700
United Kingdom	59623400
Ghana	20212000

There's more... (108 all together)

15. Display the countries grouped by region. (limit to show only the first 40 records).

SELECT Region, Name
FROM country
GROUP BY Region, Name
LIMIT 40;

```
mysql> SELECT Region, Name
-> FROM country
-> GROUP BY Region, Name
-> LIMIT 40;
```

Region	Name
Caribbean	Aruba
Southern and Central Asia	Afghanistan
Central Africa	Angola
Caribbean	Anguilla
Southern Europe	Albania
Southern Europe	Andorra
Caribbean	Netherlands Antilles
Middle East	United Arab Emirates
South America	Argentina
Middle East	Armenia
Polynesia	American Samoa
Antarctica	Antarctica
Antarctica	French Southern territories
Caribbean	Antigua and Barbuda
Australia and New Zealand	Australia
Western Europe	Austria
Middle East	Azerbaijan
Eastern Africa	Burundi
Western Europe	Belgium
Western Africa	Benin
Western Africa	Burkina Faso
Southern and Central Asia	Bangladesh
Eastern Europe	Bulgaria
Middle East	Bahrain
Caribbean	Bahamas
Southern Europe	Bosnia and Herzegovina
Eastern Europe	Belarus
Central America	Belize
North America	Bermuda
South America	Bolivia
South America	Brazil
Caribbean	Barbados
Southeast Asia	Brunei
Southern and Central Asia	Bhutan
Antarctica	Bouvet Island
Southern Africa	Botswana
Central Africa	Central African Republic
North America	Canada
Australia and New Zealand	Cocos (Keeling) Islands
Western Europe	Switzerland

40 rows in set (0.003 sec)

16. Display the countries grouped by continents. (limit to 40 records).

SELECT Continent, Name
FROM country
GROUP BY Continent, Name
LIMIT 40;

```
mysql> SELECT Continent, Name
-> FROM country
-> GROUP BY Continent, Name
-> LIMIT 40;
```

Continent	Name
North America	Aruba
Asia	Afghanistan
Africa	Angola
North America	Anguilla
Europe	Albania
Europe	Andorra
North America	Netherlands Antilles
Asia	United Arab Emirates
South America	Argentina
Asia	Armenia
Oceania	American Samoa
Antarctica	Antarctica
Antarctica	French Southern territories
North America	Antigua and Barbuda
Oceania	Australia
Europe	Austria
Asia	Azerbaijan
Africa	Burundi
Europe	Belgium
Africa	Benin
Africa	Burkina Faso
Asia	Bangladesh
Europe	Bulgaria
Asia	Bahrain
North America	Bahamas
Europe	Bosnia and Herzegovina
Europe	Belarus
North America	Belize
North America	Bermuda
South America	Bolivia
South America	Brazil
North America	Barbados
Asia	Brunei
Asia	Bhutan
Antarctica	Bouvet Island
Africa	Botswana
Africa	Central African Republic
North America	Canada
Oceania	Cocos (Keeling) Islands
Europe	Switzerland

40 rows in set (0.002 sec)

17. What is the average life expectancy of each of the continents?

SELECT Continent, AVG(LifeExpectancy) AS Avg_Life_Expectancy
FROM country
GROUP BY Continent;

```
mysql> SELECT Continent, AVG(LifeExpectancy) AS Avg_Life_Expectancy
-> FROM country
-> GROUP BY Continent;
```

Continent	Avg_Life_Expectancy
North America	72.99189
Asia	67.44118
Africa	52.57193
Europe	75.14773
South America	70.94615
Oceania	69.71500
Antarctica	NULL

7 rows in set (0.003 sec)

18. Display the capital of each African country together with the countries population in ascending order.

SELECT country.Name, city.Name AS Capital, country.Population
FROM country
JOIN city ON country.Capital = city.ID
WHERE country.Continent = 'Africa'
ORDER BY country.Population ASC;

```
mysql> SELECT country.Name, city.Name AS Capital, country.Population
-> FROM country
-> JOIN city ON country.Capital = city.ID
-> WHERE country.Continent = 'Africa'
-> ORDER BY country.Population ASC;
```

Name	Capital	Population
Saint Helena	Jamestown	6000
Seychelles	Victoria	77000
Sao Tome and Principe	São Tomé	147000
Mayotte	Mamoutzou	149000
Western Sahara	El-Aaiún	293000
Cape Verde	Praia	428000
Equatorial Guinea	Malabo	453000
Comoros	Moroni	578000
Djibouti	Djibouti	638000
Réunion	Saint-Denis	699000
Swaziland	Mbabane	1008000
Mauritius	Port-Louis	1158000
Guinea-Bissau	Bissau	1213000
Gabon	Libreville	1226000
Gambia	Banjul	1305000
Botswana	Gaborone	1622000
Namibia	Windhoek	1726000
Lesotho	Maseru	2153000
Mauritania	Nouakchott	2670000
Congo	Brazzaville	2943000
Liberia	Monrovia	3154000
Central African Republic	Bangui	3615000
Eritrea	Asmara	3850000
Togo	Lomé	4629000
Sierra Leone	Freetown	4854000
Libyan Arab Jamahiriya	Tripoli	5605000
Benin	Porto-Novo	6097000
Burundi	Bujumbura	6695000
Guinea	Conakry	7430000
Chad	N'Djaména	7651000
Rwanda	Kigali	7733000
Zambia	Lusaka	9169000
Senegal	Dakar	9481000
Tunisia	Tunis	9586000
Somalia	Mogadishu	10097000
Niger	Niamey	10730000
Malawi	Lilongwe	10925000
Mali	Bamako	11234000
Zimbabwe	Harare	11669000
Burkina Faso	Ouagadougou	11937000
Angola	Luanda	12878000
Côte d'Ivoire	Yamoussoukro	14786000
Cameroon	Yaoundé	15085000
Madagascar	Antananarivo	15942000
Mozambique	Maputo	19680000
Ghana	Accra	20212000
Uganda	Kampala	21778000
Morocco	Rabat	28351000
Sudan	Khartoum	20000000

There's more... (57 rows)

19. What is the country with the largest surface area?

[SELECT Name, SurfaceArea](#)
[FROM country](#)
[ORDER BY SurfaceArea DESC](#)
[LIMIT 1;](#)

```
mysql> SELECT Name, SurfaceArea
-> FROM country
-> ORDER BY SurfaceArea DESC
[ -> LIMIT 1;
+-----+-----+
| Name          | SurfaceArea |
+-----+-----+
| Russian Federation | 17075400.00 |
+-----+-----+
1 row in set (0.003 sec)
```

20. Display the surface area of each of the continents.

[SELECT Continent, SUM\(SurfaceArea\) AS Total_Surface_Area](#)
[FROM country](#)
[GROUP BY Continent;](#)

```
mysql> SELECT Continent, SUM(SurfaceArea) AS Total_Surface_Area
-> FROM country
[ -> GROUP BY Continent;
+-----+-----+
| Continent      | Total_Surface_Area |
+-----+-----+
| North America  | 24214470.00 |
| Asia           | 31881005.00 |
| Africa         | 30250377.00 |
| Europe         | 23049133.90 |
| South America  | 17864926.00 |
| Oceania        | 8564294.00 |
| Antarctica     | 13132101.00 |
+-----+-----+
7 rows in set (0.002 sec)
```