

# Querying world database

Querying a world database involves using SQL to retrieve and analyse data related to countries, cities, populations, geographical locations, and other global metrics to generate insights for decision-making.

## Number of cities in the USA

This query counts the number of cities in the USA by joining the city and country tables and filtering for the USA, revealing that there are 274 cities within the country.

```
2  # Task 1
3 •   SELECT COUNT(*) AS number_of_cities_in_usa -- Selects the count of cities and uses as number_of_cities
4     FROM world.city -- Specifies the city table from the world database
5       JOIN world.country ON city.CountryCode = country.Code -- Joins city table with country table based on
6         WHERE country.Code = 'USA'; -- Filters results to include only cities where the country code is 'USA'
7
8
```

0% 1:1

result Grid Filter Rows: Search Export:  

number_of_cities_in_u...
274

## Population at average life expectancy for Argentines

This query retrieves Argentina's name, population (37,032,000), and average life expectancy (75 years) from the country table, offering insights into its demographic and health statistics.

```
10 •   SELECT
11     Name AS country_name, -- Selects the name of the country
12     Population AS population, -- Selects the population
13     AVG(LifeExpectancy) AS average_life_expectancy -- Calculates the average life expectancy
14   FROM
15     world.country -- Specifies the country table from the world database
16   WHERE
```

```

17     Code = 'ARG'; -- Filters rows where the country code is ARG (Argentina)
18
19
100%  1:19

```

Result Grid Filter Rows: Search Export:

country_name	population	average_life_expectancy
Argentina	37032000	75.10000

### Country with Highest Life Expectancy

This query retrieves the country with the highest life expectancy from the country table, ordering by life expectancy in descending order and limiting the result to the top entry. Andorra is identified as having the highest life expectancy.

```

21 •  SELECT
22     name, -- Select the name of the country
23     LifeExpectancy -- Select the life expectancy of the country
24   FROM
25     world.country -- From the 'country' table in the 'world' database
26 ORDER BY
27     LifeExpectancy DESC -- Order the results by life expectancy in descending order
28 LIMIT 1; -- Limit the result to the top 1 row
100%  1:29

```

Result Grid Filter Rows: Search Export: Fetch rows:

name	LifeExpectancy
Andorra	83.5

### 25 cities that start with the letter 'F'

This query retrieves up to 25 city names from the city table where the names start with the letter 'F', helping to quickly find cities that fit this naming pattern.

```

31 •  SELECT
32     name as country_name -- Select the name of the city
33   FROM
34     world.city -- From the 'city' table in the 'world' database
35 WHERE
36     Name LIKE 'F%' -- Where the city name starts with 'F'
37 LIMIT 25; -- Limit the result to 25 cities
38
39
40
41     -- SELECT LifeExpectancy FROM world.country ORDER BY LifeExpectancy DESC;
100%  1:38

```

Result Grid Filter Rows: Search Export: Fetch rows:

country_name
Fagatogo
Florencio Varela
Formosa
Francistown
Fortaleza
Feira de Santana
Franca
Florianópolis
Foz do Iguaçu
Foxes de Velocidade

Pennaz de Vasconcelos
Francisco Morato
Franco da Rocha
Fuenlabrada
Faridabad
Firozabad
Farrukhabad-cum-Fa...
Faizabad

### Retrieve first 10 rows with columns Id, Name, and Population from the city table

This query retrieves the first 10 city records from the city table, including their ID, Name, and Population, which helps to quickly review a sample of city data.

```

40 •   SELECT
41     ID,          -- Select the ID column
42     Name,         -- Select the Name column
43     Population    -- Select the Population column
44   FROM
45     world.city    -- From the 'city' table in the 'world' database
46   LIMIT 10;      -- Limit the result to the first 10 rows
47
100%  1:38

```

Result Grid Filter Rows: Search Edit: Export/Import: Fetch rows:

ID	Name	Population
1	Kabul	1780000
2	Qandahar	237500
3	Herat	186800
4	Mazar-e-Sharif	127800
5	Amsterdam	731200
6	Rotterdam	593321

### Cities with over 2,000,000 population

This query retrieves the ID, Name, and Population of cities from the city table with a population greater than 2,000,000, helping to identify and analyze major urban centers.

```

49 •   SELECT
50     ID,          -- Select the ID column
51     Name,         -- Select the Name column
52     Population    -- Select the Population column
53   FROM
54     world.city    -- From the 'city' table in the 'world' database
55   WHERE Population > 2000000;      -- Where population is larger than 2000000
56
100%  1:47

```

Result Grid Filter Rows: Search Edit: Export/Import:

ID	Name	Population
131	Melbourne	2865329
150	Dhaka	3612850
206	São Paulo	9968485
207	Rio de Janeiro	5598953
208	Salvador	2302832
209	Belo Horizonte	2139125
210	Curitiba	2002277

## Cities names that start with 'Be'

This query retrieves city names from the city table that start with 'Be' and displays a list of cities with names matching this pattern.

```
58 •  SELECT
59      Name AS city    -- Select the Name column
60  FROM
61      world.city -- From the 'city' table in the 'world' database
62  WHERE Name LIKE 'Be%'; -- Where the city name starts with 'Be'
63
```

100% 1:56

Result Grid Filter Rows: Search Export:

city
Béjaïa
Béchar
Bengu...
Beraza...
Belize...
Belmo...

### Cities names with population between 500,000 and 1,000,000

This query retrieves all columns for cities with a population between 500,000 and 1,000,000 from the city table, allowing for analysis of mid-sized urban areas.

```
65 •  SELECT
66      *      -- Select all columns
67  FROM
68      world.city -- From the 'city' table in the 'world' database
69 WHERE Population > 500000 AND Population <1000000; -- Filter the results to only include cities with a po
70
```

100% 21:62

Result Grid Filter Rows:  Search Edit: Export/Import: Result Grid Form Editor

ID	Name	CountryCode	District	Population	
5	Amster...	NLD	Noord-Holland	731200	
6	Rotter...	NLD	Zuid-Holland	593321	
36	Oran	DZA	Oran	609823	
64	Dubai	ARE	Dubai	669181	
72	Rosario	ARG	Santa Fé	907718	
73	Lomas...	ARG	Buenos Aires	622013	

## Cities with the least population

This query retrieves all columns for the city with the smallest population from the city table. This allows for identification and analysis of the least populated city.

```
72 •  SELECT
73     *      -- Select all columns
74   FROM
75     world.city -- From the 'city' table in the 'world' database
76 WHERE
77   Population = (
78     SELECT MIN(Population) -- Find the minimum population value
79     FROM world.city -- From the 'city' table in the 'world' database
80   ); -- Filter the results to only include the city with the lowest population
81
```

Result Grid Filter Rows: Search Edit: Export/Import: Result Grid Form Editor

ID	Name	CountryCode	District	Population	
2912	Adams...	PCN	-	42	
HULL	HULL	HULL	HULL	HULL	

## Capital of Spain

This query retrieves the name of the capital city of Spain (country code 'ESP') by joining the city and country tables to identify Spain's capital city.

```
84 •   SELECT
85       city.Name AS Capital -- Selects city and uses Capital as alias
86   FROM
87       world.city AS city  -- Specifies the city table from the world database and aliases it as city
88   JOIN
89       world.country AS country -- Joins the country table from the world database and aliases it as country
90   ON
91       city.ID = country.Capital -- The join condition ensures we match the city ID with the country's capital
92   WHERE
93       country.Code = 'ESP'; -- Filters the results to include only the country with the code 'ESP' (Spain)
94
```

Result Grid Filter Rows: Search Export: Result Grid Form Editor

Capital
Madrid

## All languages spoken in the Caribbean region

This query retrieves the names of countries and their languages in the Caribbean region by joining the country and countrylanguage tables, which helps identify language distribution across Caribbean countries.

```
97 •   SELECT
98       country.name as Country, -- Selects the name column from the country table
99       countrylanguage.Language -- Selects the Language column from the countrylanguage table
100  FROM
101      world.countrylanguage AS countrylanguage -- Specifies the countrylanguage table from the world database
102  JOIN
103      world.country AS country -- Joins the country table from the world database and aliases it as country
104  ON
105      countrylanguage.CountryCode = country.Code -- The join condition ensures we match the CountryCode in
106  WHERE
107      country.Region = 'Caribbean'; -- Filters the results to include only countries in the Caribbean region
108
109  -- -----
100%  96:96
```

Result Grid Filter Rows: Search Export: Result Grid Form Editor

Country	Language
Aruba	Dutch
Aruba	English
Aruba	Spanish

Aruba	Papiamento
Aruba	Spanish
Anguilla	English
Netherlands Antilles	Dutch

Form  
Editor  
✓

### All cities in the European continent

This query retrieves the names of cities, their populations, and the corresponding countries within Europe by joining the city and country tables. This information can be used for the analysis of urban and demographic information across European countries.

```

110 *  SELECT
111      country.name as Country, -- Selects the name column from the country table
112      city.name as City, -- Selects the city column from the city table
113      city.Population as Population -- Selects the city column from the Population table
114  FROM
115      world.city AS city -- Specifies the city table from the world database and aliases it as city
116  JOIN
117      world.country AS country -- Joins the country table from the world database and aliases it as country
118  ON
119      city.CountryCode = country.Code -- The join condition ensures we match the CountryCode in city with t
120  WHERE
121      country.Continent = 'Europe'; -- Filters the results to include only cities in the European continent
122

```

Result Grid    Filter Rows:    Search    Export:

Country	City	Population
Austria	Wien	1608144
Austria	Graz	240967
Austria	Linz	188022
Austria	Salzburg	144247
Austria	Innsbruck	111752
Austria	Klagenfurt	91141

Result  
Grid  
Form  
Editor  
✓

### New Year Promotion: Featuring Cities with 'New'

This query retrieves the ID, Name, CountryCode, District, and Population of cities from the city table where the city name contains 'New', which helps identify and analyze cities with names that include this substring.

```

126 *  SELECT ID, Name, CountryCode, District, Population
127    FROM world.city
128   WHERE Name LIKE '%New%';
129

```

100%    1:123

Result Grid    Filter Rows:    Search    Edit:    Export/Import:

ID	Name	CountryCode	District	Population
137	Newca...	AUS	New South Wales	270324
482	Newca...	GBR	England	189150
502	Newport	GBR	Wales	139000
734	Newca...	ZAF	KwaZulu-Natal	222993

### Display Cities Sorted by Name in Ascending Order

This query retrieves and lists city names in alphabetical order from the city table, facilitating a sorted view of all cities by name for easier lookup or analysis.

```
138 •  SELECT name as Name  
139     FROM world.city  
140     ORDER BY Name ASC;  
141
```

100% 21:134

Result Grid		Filter Rows:	Search	Export:	Fetch rows:	Result Grid
<b>Name</b>						
[San Cristóbal de] la Laguna						
's-Hertogenbosch						
A Coruña (La Coruña)						
Aachen						

## Most Populated City

This query identifies and retrieves the name and population of the most populous city as Mumbai (Bombay).

```
143 •  SELECT Name, Population  
144     FROM world.city  
145     ORDER BY Population DESC  
146     LIMIT 1;
```

100% 13:144

Result Grid		Filter Rows:	Search	Export:	Fetch rows:	Result Grid
<b>Name</b>						
Mumbai (Bombay)	10500000					

## City Name Frequency Analysis

This query counts the number of occurrences for each city name and orders the results alphabetically by city name. This helps identify the frequency of each city name in the dataset and detect any duplicates.

```
149 •  SELECT Name, COUNT(*) AS Frequency  
150     FROM world.city  
151     GROUP BY Name  
152     ORDER BY Name ASC;  
153
```

100% 18:152

Result Grid		Filter Rows:	Search	Export:	Fetch rows:	Result Grid
<b>Name</b>						
[San Cristóbal de] la Laguna	1					
's-Hertogenbosch	1					
A Coruña (La Coruña)	1					
Aachen	1					

## City with the Lowest Population

This query identifies and retrieves the city with the smallest population which is Adamstown. It is useful for understanding the least populated urban areas and analyzing population distribution.

```
155 •  SELECT Name, Population
156   FROM world.city
157   ORDER BY Population ASC
158   LIMIT 1;
100%  ◊  15:152
```

Result Grid   Filter Rows:  Search   Export: Fetch rows:

Name	Population
Adamstown	42

Result Grid

### Country with Largest Population

This query retrieves the name of the most populous country, along with its continent, region, population, and the names of its cities. This helps to identify the country with the largest population and gain insights into its urban areas. In this database, the most populous city is Shanghai in China.

```
161 •  SELECT city.Name, country.name as Name, country.Continent, country.Region, country.Population -- Select c
162   FROM world.country AS country -- Specifies country table from the world database
163   JOIN world.city AS city ON city.CountryCode = country.Code -- Join with the 'world.city' table, alias it as city
164   ORDER BY country.Population DESC -- Order the results by country's Population in descending order
165   LIMIT 1;-- Limit the results to the top country by population
100%  ◊  17:161
```

Result Grid   Filter Rows:  Search   Export: Fetch rows:

Name	Name	Continent	Region	Population
Shanghai	China	Asia	Eastern Asia	1277558000

Result Grid

### Cities in Europe

This query selects all cities from the continent of Europe by joining the city and country tables on matching CountryCode and Code, and filtering for the continent Europe, allowing for a comprehensive view of urban areas across European countries.

```
110 •  SELECT
111      country.name as Country, -- Selects the name column from the country table
112      city.name as City, -- Selects the city column from the city table
113      city.Population as Population -- Selects the city column from the Population table
114  FROM
115      world.city AS city -- Specifies the city table from the world database and aliases it as city
116  JOIN
117      world.country AS country -- Joins the country table from the world database and aliases it as country
118  ON
119      city.CountryCode = country.Code -- The join condition ensures we match the CountryCode in city with t
120  WHERE
121      country.Continent = 'Europe'; -- Filters the results to include only cities in the European continent
122
100%  ◊  25:113
```

Result Grid   Filter Rows:  Search   Export:

A screenshot of a database interface showing a result grid for Austria's cities. The grid has three columns: Country, City, and Population. The data is as follows:

Country	City	Population
Austria	Wien	1608144
Austria	Graz	240967
Austria	Linz	188022
Austria	Salzburg	144247
Austria	Innsbruck	111752
Austria	Klagenfurt	91141

Result Grid icon is visible in the top right corner.

### Average Population by Country

This query calculates and lists the average population of cities for each country, ordered from lowest to highest, providing insights into how city populations vary across countries; for example, Singapore has the highest average population, while Pitcairn has the lowest.

A screenshot of a database interface showing a query and its results. The query is:

```

SELECT
    country.Code AS CountryCode,
    country.Name AS CountryName,
    AVG(city.Population) AS AveragePopulation
FROM
    world.country AS country
JOIN
    world.city AS city ON country.Code = city.CountryCode
GROUP BY
    country.Code, country.Name
ORDER BY
    AveragePopulation DESC;
  
```

The results show the average population for four countries:

CountryCode	CountryName	AveragePopulation
SGP	Singapore	4017733.0000
HKG	Hong Kong	1650316.5000
URY	Uruguay	1236000.0000
GIN	Guinea	1090610.0000

Result Grid icon is visible in the top right corner.

### Capital Cities Population Comparison

This query retrieves and sorts the capital cities of all countries by their population in descending order. This provides insights into which capitals are the most and least populous and helps to understand the demographic significance of each capital city.

A screenshot of a database interface showing a query and its results. The query is:

```

SELECT
    country.Name AS Country,
    city.Name AS Capital_City,
    city.Population AS Capital_Population
FROM
    world.country AS country
JOIN
    world.city AS city ON country.Capital = city.ID
ORDER BY
    Capital_Population DESC;
  
```

The results show the capital cities and their populations for four countries:

Country	Capital_City	Capital_Population
Mexico	Ciudad de México	8591309
Russian Federation	Moscow	8389200
Japan	Tokyo	7980230
China	Peking	7472000

Result Grid icon is visible in the top right corner.

## Countries with Low Population Density

This query calculates and lists countries with low population density by dividing population by surface area. It filters out those with a density below 10 people per square unit, and ordering the results to easily identify countries with the lowest population density.

```

194 •   SELECT
195     country.Name AS CountryName,country.Population,country.SurfaceArea,(country.Population / country.Surf
196   FROM
197     world.country AS country
198   WHERE
199     country.SurfaceArea > 0 -- Ensure no division by zero
200     AND (country.Population / country.SurfaceArea) < 10 -- Define the threshold for low density
201   ORDER BY
202     PopulationDensity ASC; -- Order by population density for easier analysis
203

```

Result Grid   Filter Rows: Search Export:

CountryName	Population	SurfaceArea	PopulationDensi...
Antarctica	0	13120000.00	0.0000
French Southern territories	0	7780.00	0.0000
South Georgia and the South Sandwich Islands	0	3903.00	0.0000
United States Minor Outlying Islands	0	16.00	0.0000
Bouvet Island	0	59.00	0.0000
British Indian Ocean Territory	0	78.00	0.0000

Result Grid   Form Editor  

## Cities with High GDP per Capita

This query aims to highlight economically prosperous capital cities by comparing their GDP per capita to the average across all capital cities.

```

-- Select the city name, country name, GNP of the country, population of the city, and the calculated GDP per capita (GNP / population)
SELECT city.Name AS CityName, country.Name AS Country, country.GNP,city.Population,(country.GNP / city.Population) AS GDPPerCapita
FROM world.country AS country
JOIN world.city AS city ON country.Capital = city.ID
WHERE
    (country.GNP / city.Population) > (
        SELECT AVG(country.GNP / city.Population)
        FROM world.country AS country
        JOIN world.city AS city ON country.Capital = city.ID
        WHERE
            country.GNP IS NOT NULL
            AND city.Population IS NOT NULL
            AND city.Population > 0
    )
ORDER BY
    GDPPerCapita DESC;

```

Result Grid   Filter Rows: Search Export:

CityName	Country	GNP	Population	GDPPerCapita
Washington	United States	8510700.00	572059	14.877312
Bern	Switzerland	264478.00	122700	2.155485
Hamilton	Bermuda	2328.00	1200	1.940000

Result 1   Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
✓ 1	17:09:26	SELECT city.Name AS CityName, country.Name AS Country...	36 row(s) returned	0.132 sec / 0.000018

### Display the populations of the countries ranked 31st and 40th by population

This query is useful for identifying mid-ranked cities based on population, specifically those positioned between the 31st and 40th largest in terms of population. The ROW\_NUMBER() function ensures that cities are ranked correctly even if populations are tied, and it provides a unique ranking for each city.

```

225  -- Select the city name, country code, district, and population for cities ranked between 31st and 40th by populatio
226  •  SELECT CityName,CountryCode, District, Population
227  (  FROM ( -- Subquery to calculate the ranking of each city based on population
228      SELECT city.Name AS CityName,city.CountryCode,city.District, city.Population,
229          ROW_NUMBER() OVER (ORDER BY city.Population DESC) AS CityRank
230      FROM
231          world.city AS city
232  ) AS RankedCities
233  WHERE
234      CityRank BETWEEN 31 AND 40 -- Filter the results to include only cities ranked between 31 and 40
235  ORDER BY
236      CityRank;    -- Order the result by city rank
237
1:223
Result Grid  Filter Rows: Search Export: 


| CityName   | Country       | GNP        | Population | GDPPerCapita |
|------------|---------------|------------|------------|--------------|
| Washington | United States | 8510700.00 | 572059     | 14.877312    |
| Bern       | Switzerland   | 264478.00  | 122700     | 2.155485     |
| Hamilton   | Bermuda       | 2328.00    | 1200       | 1.940000     |


Result 1  Read Only
Action Output  ◊
Time Action Response Duration / Fetch Time
(i) ✓ 1 17:09:26  SELECT city.Name AS CityName, country.Name AS Country... 36 row(s) returned 0.132 sec / 0.000018

```