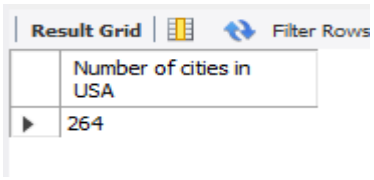
Setting up the database in MySQL

1. **Download world_db(1) here**
2. **Follow each step to create your database here**

For each question I would like to see both the syntax used and the output.

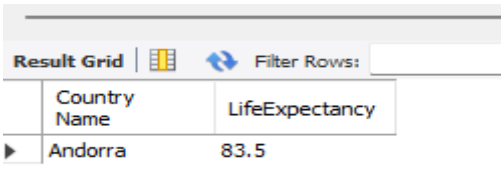
1. **Count Cities in USA:** *Scenario:* You've been tasked with conducting a demographic analysis of cities in the United States. Your first step is to determine the total number of cities within the country to provide a baseline for further analysis.

Syntax: SELECT COUNT(DISTINCT Name) AS 'Number of cities in USA'
FROM city WHERE countrycode = 'USA';



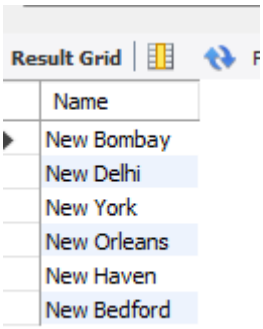
2. **Country with Highest Life Expectancy:** *Scenario:* As part of a global health initiative, you've been assigned to identify the country with the highest life expectancy. This information will be crucial for prioritising healthcare resources and interventions.

Syntax: Select name as 'Country Name', LifeExpectancy
from country
where LifeExpectancy=(select max(lifeexpectancy) from country);



3. **"New Year Promotion: Featuring Cities with 'New :** *Scenario:* In anticipation of the upcoming New Year, your travel agency is gearing up for a special promotion featuring cities with names including the word 'New'. You're tasked with swiftly compiling a list of all cities from around the world. This curated selection will be essential in creating promotional materials and enticing travellers with exciting destinations to kick off the New Year in style.

Syntax: *Select Name from city where name like 'new %' ;*

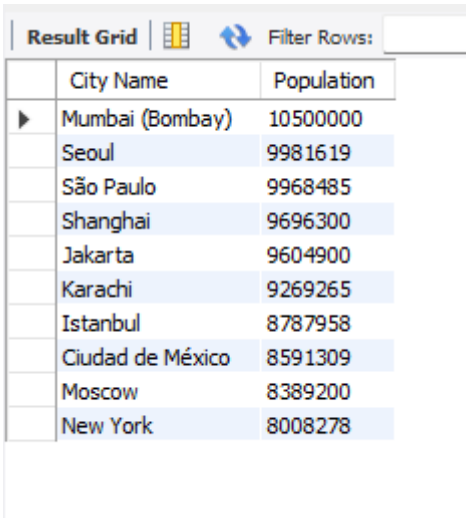


Result Grid

Name
New Bombay
New Delhi
New York
New Orleans
New Haven
New Bedford

4. **Display Columns with Limit (First 10 Rows):** *Scenario:* You're tasked with providing a brief overview of the most populous cities in the world. To keep the report concise, you're instructed to list only the first 10 cities by population from the database.

Syntax: *Select name as 'City Name', Population from city order by population Desc limit 10;*



Result Grid Filter Rows:

City 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

5. **Cities with Population Larger than 2,000,000:** *Scenario:* A real estate developer is interested in cities with substantial population sizes for potential investment opportunities. You're tasked with identifying cities from the database with populations exceeding 2 million to focus their research efforts.

Syntax: Select name as 'City Name', Population
from city where population>2000000 order by population desc ;

Result Grid | Filter Rows:

City 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
Tokyo	7980230
Peking	7472000
London	7285000
Delhi	7206704
Cairo	6789479

city 35

6. **Cities Beginning with 'Be' Prefix:** *Scenario:* A travel blogger is planning a series of articles featuring cities with unique names. You're tasked with compiling a list of cities from the database that start with the prefix 'Be' to assist in the blogger's content creation process.

Syntax: Select Name from city
where name like 'Be%' order by name Asc ;

Result Grid | Filter Rows:

Name
Beau Bassin-Rose Hill
Beaumont
Beawar
Béchar
Beerseba
Bei ´an
Beihai
Beipiao
Beira
Beirut
Béjaïa
Bekasi
Belém
Belfast
Belford Roxo

city 38

7. **Cities with Population Between 500,000-1,000,000:** *Scenario:* An urban planning committee needs to identify mid-sized cities suitable for infrastructure development projects. You're tasked with identifying cities with populations ranging between 500,000 and 1 million to inform their decision-making process.

Syntax: Select name as 'City Name', Population
from city where population between 500000 and 1000000
order by population desc ;

Result Grid | Filter Rows:

City Name	Population
Amman	1000000
Mogadishu	997000
Volgograd	993400
Sendai	989975
Peshawar	988005
Baotou	980000
Adelaide	978100
Madurai	977856
Mekka	965700
Köln	962507
Managua	959000
Detroit	951270
Shenzhen	950500
Haora (H...	950435

city 39

8. **Display Cities Sorted by Name in Ascending Order:** *Scenario:* A geography teacher is preparing a lesson on alphabetical order using city names. You're tasked with providing a sorted list of cities from the database in ascending order by name to support the lesson plan.

Syntax: `Select * from city order by name asc;`

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

ID	Name	CountryCode	District	Population
698	[San Cristóbal de] la Laguna	ESP	Canary Islands	127945
20	´s-Hertogenbosch	NLD	Noord-Brabant	129170
670	A Coruña (La Coruña)	ESP	Galicia	243402
3097	Aachen	DEU	Nordrhein-Westfalen	243825
3318	Aalborg	DNK	Nordjylland	161161
2760	Aba	NGA	Imo & Abia	298900
1404	Abadan	IRN	Khuzestan	206073
395	Abaetetuba	BRA	Pará	111258
3683	Abakan	RUS	Hakassia	169200
1849	Abbotsford	CAN	British Colombia	105403
2747	Abeokuta	NGA	Ogun	427400
478	Aberdeen	GBR	Scotland	213070
3191	Abha	SAU	Asir	112300
2812	Abidjan	CIV	Abidjan	2500000
1703	Abiko	JPN	Chiba	126670

city 40

9. **Most Populated City:** *Scenario:* A real estate investment firm is interested in cities with significant population densities for potential development projects. You're tasked with identifying the most populated city from the database to guide their investment decisions and strategic planning.

Syntax: Select name as 'City', Population from city
where population=(select max(population) from city);

Result Grid | Filter Rows:

City	Population
Mumbai (Bombay)	10500000

10. **City Name Frequency Analysis: Supporting Geography Education** *Scenario*: In a geography class, students are learning about the distribution of city names around the world. The teacher, in preparation for a lesson on city name frequencies, wants to provide students with a list of unique city names sorted alphabetically, along with their respective counts of occurrences in the database. You're tasked with this sorted list to support the geography teacher.

Syntax: SELECT name AS 'City', COUNT(*) AS 'Number_of_Times_City_Appears'
FROM city GROUP BY name ORDER BY name ASC;

Result Grid | Filter Rows: | Export: | Wra

City	Number_of_Times_City_Appears
[San Cristóbal de] la Laguna	1
´s-Hertogenbosch	1
A Coruña (La Coruña)	1
Aachen	1
Aalborg	1
Aba	1
Abadan	1
Abaetetuba	1
Abakan	1
Abbotsford	1
Abeokuta	1
Aberdeen	1
Abha	1
Abidjan	1
Abiko	1

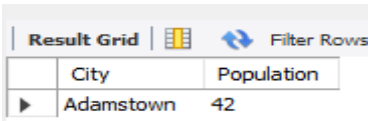
Result 45

Syntax: SELECT name AS 'City', COUNT(*) AS 'Occurences_of_Name'
FROM city GROUP BY name ORDER BY count(*) DESC;

City	Occurences_of_Name
San José	4
Córdoba	3
San Miguel	3
San Fernando	3
Hamilton	3
La Paz	3
Toledo	3
Cambridge	3
Springfield	3
Richmond	3
Valencia	3
León	3
Victoria	3
Jining	2
Kansas City	2

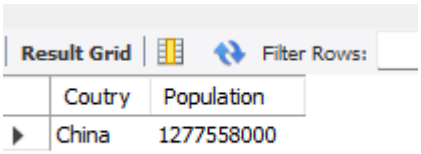
11. **City with the Lowest Population:** *Scenario:* A census bureau is conducting an analysis of urban population distribution. You're tasked with identifying the city with the lowest population from the database to provide a comprehensive overview of demographic trends.

Syntax: Select name as 'City', Population from city
where population=(select min(population) from city);



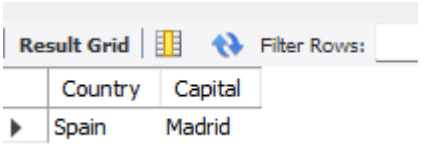
12. **Country with Largest Population:** *Scenario:* A global economic research institute requires data on countries with the largest populations for a comprehensive analysis. You're tasked with identifying the country with the highest population from the database to provide valuable insights into demographic trends.

Syntax: Select name as 'Coutry', Population from country
where population=(select max(population) from country);



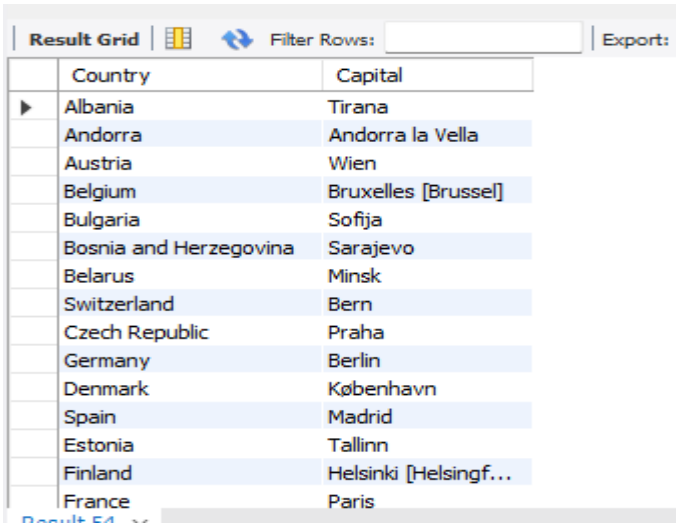
13. **Capital of Spain:** *Scenario:* A travel agency is organising tours across Europe and needs accurate information on capital cities. You're tasked with identifying the capital of Spain from the database to ensure itinerary accuracy and provide travellers with essential destination information.

Syntax: SELECT country.name AS 'Country', city.name AS 'Capital'
FROM city INNER JOIN country ON city.ID = country.capital
WHERE country.name = 'Spain';



14. **Cities in Europe:** *Scenario:* A European cultural exchange program is seeking to connect students with cities across the continent. You're tasked with compiling a list of cities located in Europe from the database to facilitate program planning and student engagement.

Syntax: SELECT country.name AS 'Country', city.name AS 'Capital'
FROM city INNER JOIN country ON city.ID = country.capital
WHERE country.Continent = 'Europe';

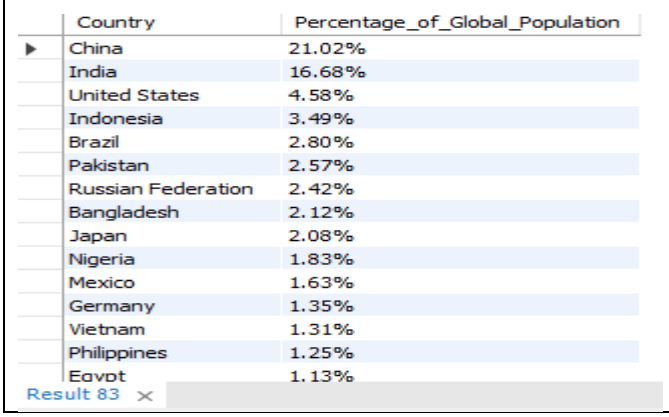


Result Grid | Filter Rows: | Export:

Country	Capital
Albania	Tirana
Andorra	Andorra la Vella
Austria	Wien
Belgium	Bruxelles [Brussel]
Bulgaria	Sofija
Bosnia and Herzegovina	Sarajevo
Belarus	Minsk
Switzerland	Bern
Czech Republic	Praha
Germany	Berlin
Denmark	København
Spain	Madrid
Estonia	Tallinn
Finland	Helsinki [Helsingf...
France	Paris

15. **Average Population by Country:** *Scenario:* A demographic research team is conducting a comparative analysis of population distributions across countries. You're tasked with calculating the average population for each country from the database to provide valuable insights into global population trends.

*Syntax: SELECT name AS Country, CONCAT(round(population * 100.0 / (SELECT SUM(population) FROM country), 2), '%') AS Percentage_of_Global_Population FROM country*
*ORDER BY (population * 100.0 / (SELECT SUM(population) FROM country)) DESC*;



Country	Percentage_of_Global_Population
China	21.02%
India	16.68%
United States	4.58%
Indonesia	3.49%
Brazil	2.80%
Pakistan	2.57%
Russian Federation	2.42%
Bangladesh	2.12%
Japan	2.08%
Nigeria	1.83%
Mexico	1.63%
Germany	1.35%
Vietnam	1.31%
Philippines	1.25%
Egypt	1.13%

Result 83

16. **Capital Cities Population Comparison:** *Scenario:* A statistical analysis firm is examining population distributions between capital cities worldwide. You're tasked with comparing the populations of capital cities from different countries to identify trends and patterns in urban demographics.

Syntax:
```
SELECT Country.Name AS Country, City.Name AS City, City.Population
FROM City INNER JOIN Country ON City.ID = Country.Capital
ORDER BY population DESC;
```

Result Grid | Filter Rows: | Export: | Wrap

Country	City	Population
South Korea	Seoul	9981619
Indonesia	Jakarta	9604900
Mexico	Ciudad de México	8591309
Russian Federation	Moscow	8389200
Japan	Tokyo	7980230
China	Peking	7472000
United Kingdom	London	7285000
Egypt	Cairo	6789479
Iran	Teheran	6758845
Peru	Lima	6464693
Thailand	Bangkok	6320174
Colombia	Santafé de Bogotá	6260862
Congo, The Demo...	Kinshasa	5064000
Chile	Santiago de Chile	4703954
Iraq	Baghdad	4336000

Result 60

17. **Countries with Low Population Density:** *Scenario:* An agricultural research institute is studying countries with low population densities for potential agricultural development projects. You're tasked with identifying countries with sparse populations from the database to support the institute's research efforts.

Syntax:
```
SELECT name AS 'Country', population AS 'Population'
FROM country where population!= 0 ORDER BY population ASC;
```

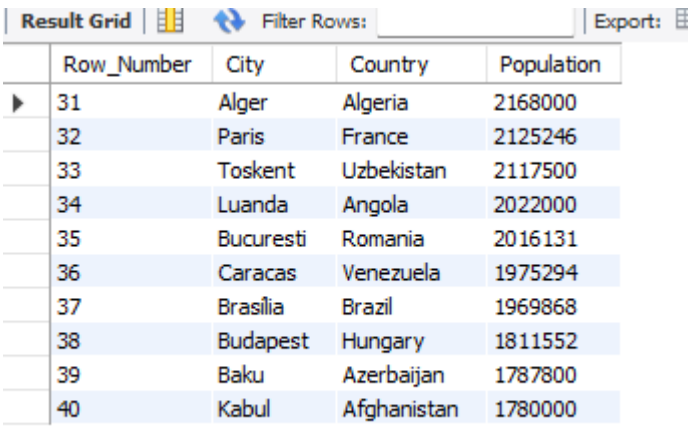
Result Grid | Filter Rows: | Export: |

Country	Population
Pitcairn	50
Cocos (Keeling) Islands	600
Holy See (Vatican City State)	1000
Falkland Islands	2000
Norfolk Island	2000
Niue	2000
Tokelau	2000
Christmas Island	2500
Svalbard and Jan Mayen	3200
Saint Helena	6000
Saint Pierre and Miquelon	7000
Anguilla	8000
Montserrat	11000
Nauru	12000
Tuvalu	12000

country 66

18. **Display Columns with Limit (Rows 31-40):** *Scenario:* A market research firm requires detailed information on cities beyond the top rankings for a comprehensive analysis. You're tasked with providing data on cities ranked between 31st and 40th by population to ensure a thorough understanding of urban demographics.

Syntax: SELECT ROW_NUMBER() OVER (ORDER BY City.Population DESC) AS 'Row_Number', City.Name AS City, Country.Name AS Country, City.Population FROM City INNER JOIN Country ON City.ID = Country.Capital ORDER BY City.Population DESC LIMIT 10 OFFSET 30;


Result Grid | Filter Rows: | Export:

Row_Number	City	Country	Population
31	Alger	Algeria	2168000
32	Paris	France	2125246
33	Toskent	Uzbekistan	2117500
34	Luanda	Angola	2022000
35	Bucuresti	Romania	2016131
36	Caracas	Venezuela	1975294
37	Brasília	Brazil	1969868
38	Budapest	Hungary	1811552
39	Baku	Azerbaijan	1787800
40	Kabul	Afghanistan	1780000