In [1]:
```
##Loads the SQL magic and opens a connection to MySQL on localhost.
%load_ext sql
```

In [2]:
```
%sql mysql+mysqlconnector://root:root@localhost
```

In [3]:
```
%%sql
#Lists all databases
Show databases
```

 * mysql+mysqlconnector://root:***@localhost
17 rows affected.

Out[3]:

Database
de_project
dummy
family
g_project
hotels
information_schema
interview_questions
lyft
mysql
performance_schema
sakila
shrimali
starbucks
sys
taxi
uber
world

In [4]:
```
%%sql
#Sets the current database to 'world'
Use world
```

 * mysql+mysqlconnector://root:***@localhost
0 rows affected.

Out[4]: []

In [5]:
```
%%sql
#List all tables in the world database
```

```
show tables
```

 * mysql+mysqlconnector://root:***@localhost
3 rows affected.

Out[5]:   **Tables_in_world**

city
country
countrylanguage

In [6]:
```
%%sql
#Shows column names, types, keys, and nullability.
desc city
```

 * mysql+mysqlconnector://root:***@localhost
5 rows affected.

Out[6]:

Field	Type	Null	Key	Default	Extra
ID	int	NO	PRI	None	auto_increment
Name	char(35)	NO			
CountryCode	char(3)	NO	MUL		
District	char(20)	NO			
Population	int	NO		0	

In [7]:
```
%%sql
desc country
```

 * mysql+mysqlconnector://root:***@localhost
15 rows affected.

Out[7]:

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	decimal(10,2)	NO		0.00	
IndepYear	smallint	YES		None	
Population	int	NO		0	
LifeExpectancy	decimal(3,1)	YES		None	
GNP	decimal(10,2)	YES		None	
GNPOld	decimal(10,2)	YES		None	
LocalName	char(45)	NO			
GovernmentForm	char(45)	NO			
HeadOfState	char(60)	YES		None	
Capital	int	YES		None	
Code2	char(2)	NO			

In [16]:
```sql
%%sql
#Returns the first 5 rows (useful sanity check).
select *
from country
limit 5;
```

 * mysql+mysqlconnector://root:***@localhost
5 rows affected.

Out[16]:

Code	Name	Continent	Region	SurfaceArea	IndepYear	Population	LifeExpectanc
ABW	Aruba	North America	Caribbean	193.00	None	103000	78
AFG	Afghanistan	Asia	Southern and Central Asia	652090.00	1919	22720000	45
AGO	Angola	Africa	Central Africa	1246700.00	1975	12878000	38
AIA	Anguilla	North America	Caribbean	96.00	None	8000	76
ALB	Albania	Europe	Southern Europe	28748.00	1912	3401200	71

◀ ▬▬▬▬▬▬▬▬▬▬▬▬ ▶

In [11]:
```sql
%%sql
#Returns the population value for Germany.
Select population
from country
where name = 'Germany'
```

```
* mysql+mysqlconnector://root:***@localhost
1 rows affected.
```

Out[11]:

population
82164700

In [13]:
```sql
%%sql
#Filters by a list of country names using IN.
Select name, population
from country
where name in ('Sweden', 'Norway', 'Denmark')
```

```
* mysql+mysqlconnector://root:***@localhost
3 rows affected.
```

Out[13]:

name	population
Denmark	5330000
Norway	4478500
Sweden	8861400

In [15]:
```sql
%%sql
#Filters the'country' table to show countries whose surface area falls within the g
Select name, surfacearea
from country
where surfacearea between 200000 and 250000;
```

* mysql+mysqlconnector://root:***@localhost
8 rows affected.

Out[15]:

name	surfacearea
Belarus	207600.00
United Kingdom	242900.00
Ghana	238533.00
Guinea	245857.00
Guyana	214969.00
Laos	236800.00
Romania	238391.00
Uganda	241038.00

In [24]:
```sql
%%sql
#Selects the names of countries from the 'country' table where the population is eq
Select name
from country
where population >= 200000000;
```

* mysql+mysqlconnector://root:***@localhost
4 rows affected.

Out[24]:

name
China
Indonesia
India
United States

In [25]:
```sql
%%sql
show tables
```

* mysql+mysqlconnector://root:***@localhost
3 rows affected.

Out[25]:

Tables_in_world
city
country
countrylanguage

In [27]:
```sql
%%sql
/*
Show the name and population in millions for the countries of
the continent 'South America'
*/
```

```sql
Select name, population/ 1000000 as "population_in_millions"
from country
where Continent = 'South America';
```

```
 * mysql+mysqlconnector://root:***@localhost
14 rows affected.
```

Out[27]:

name	population_in_millions
Argentina	37.0320
Bolivia	8.3290
Brazil	170.1150
Chile	15.2110
Colombia	42.3210
Ecuador	12.6460
Falkland Islands	0.0020
French Guiana	0.1810
Guyana	0.8610
Peru	25.6620
Paraguay	5.4960
Suriname	0.4170
Uruguay	3.3370
Venezuela	24.1700

In [28]:
```sql
%%sql
#Show the name and population for France, Germany, Italy
select name, population
from country
where name in ('France','Germany', 'Italy')
```

```
 * mysql+mysqlconnector://root:***@localhost
3 rows affected.
```

Out[28]:

name	population
Germany	82164700
France	59225700
Italy	57680000

In [29]:
```sql
%%sql
#Show the countries which have a name that includes the word 'United'
Select name
from country
where name like 'United%';
```

```
                  * mysql+mysqlconnector://root:***@localhost
            4 rows affected.
```

Out[29]:

name
United Arab Emirates
United Kingdom
United States Minor Outlying Islands
United States

In [40]:
```
%%sql
/*
Show the countries that are big by area or big by population.
Show name, population and area.
*/
Select name, population, surfacearea
from country
where  surfacearea > 3000000 or population > 250000000
```

```
             * mysql+mysqlconnector://root:***@localhost
           8 rows affected.
```

Out[40]:

name	population	surfacearea
Antarctica	0	13120000.00
Australia	18886000	7741220.00
Brazil	170115000	8547403.00
Canada	31147000	9970610.00
China	1277558000	9572900.00
India	1013662000	3287263.00
Russian Federation	146934000	17075400.00
United States	278357000	9363520.00

In [42]:
```
%%sql
/*
 Show the countries that are big by area (more than 3 million) or big by population
(more than 250 million) but not both. Show name, population and area.
*/
SELECT name, population, surfacearea
FROM country
WHERE (surfacearea > 3000000) <> (population > 250000000);
```

```
             * mysql+mysqlconnector://root:***@localhost
           5 rows affected.
```

Out[42]:

name	population	surfacearea
Antarctica	0	13120000.00
Australia	18886000	7741220.00
Brazil	170115000	8547403.00
Canada	31147000	9970610.00
Russian Federation	146934000	17075400.00

In [ ]: