PROJECT(1): EXPLORING WEATHER TRENDS

UDACITY: DATA ANALYST NANODEGREE

October 5, 2020

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Overview:

In this project, I will analyze local and global temperature data and compare the temperature trends for the closest big city from where I live which is "**Manama city**" to overall global temperature trends.

Manama City:

Is the capital and largest city of Bahrain, with an approximate population of 157,000 people. [1]

➢ What tools did you use for each step?

I used two tools:

- SQL: To extract data from the database.
- EXCEL: To calculate the moving average and create a line chart.

➢ SQL Commands for Extracting Data:

- To check the available cities for Bahrain in the database:

  SELECT *

  FROM city_list WHERE Country ='Bahrain'

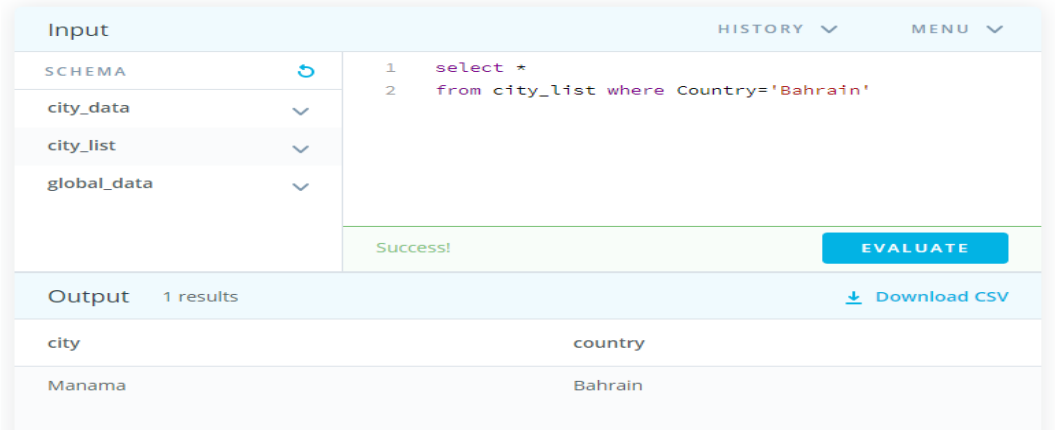


Figure 1: Check city list.

There is only one city in Bahrain available in the database.

- To select city data:

  SELECT year, city, avg_temp

  FROM city_data WHERE city ='Manama'

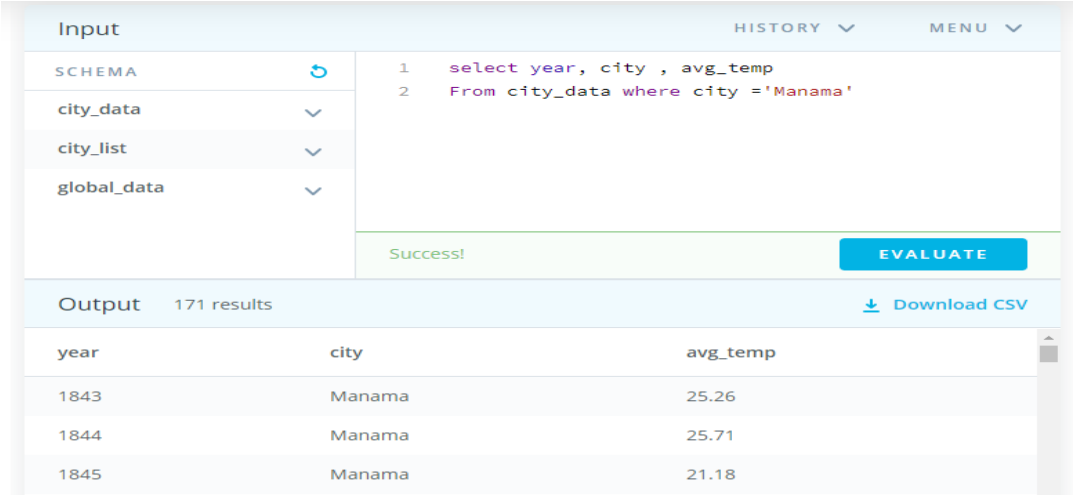


Figure 2: Select city data.

- To select all global data:

  SELECT *

  FROM global_data

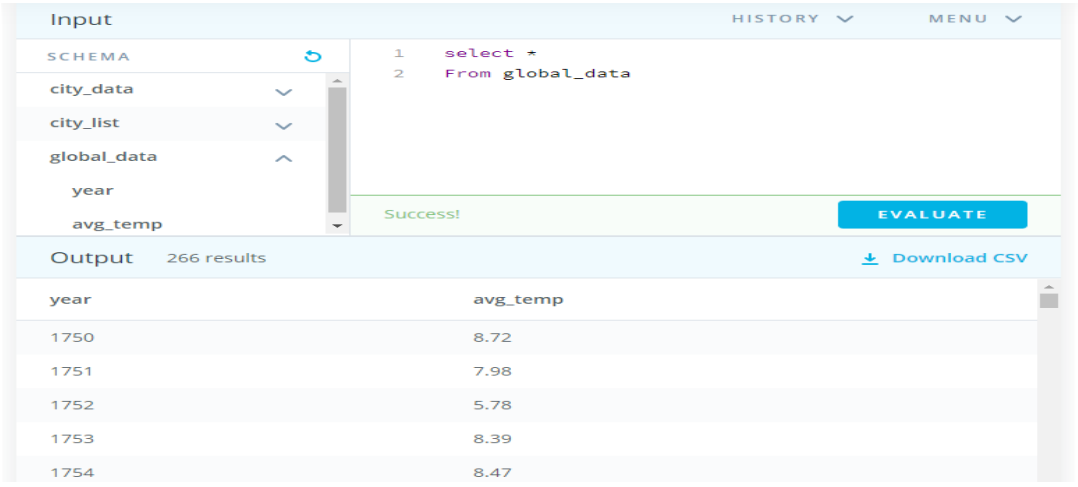
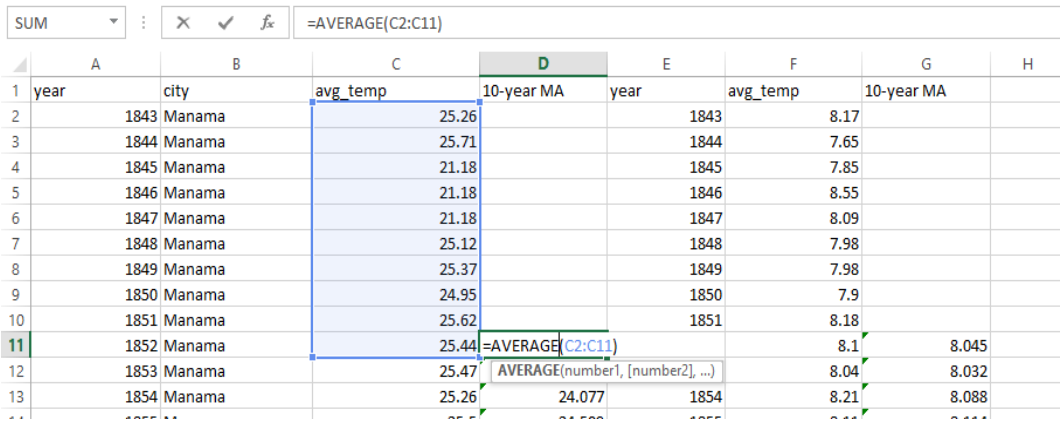


Figure 3: Select global data.

➢ How did you calculate the moving average?

For Moving Average I used excel command **"=AVERAGE(C2:C11)"** to calculate 10 years MA. As shown in Figure (4).



	A	B	C	D	E	F	G	H
1	year	city	avg_temp	10-year MA	year	avg_temp	10-year MA	
2	1843	Manama	25.26		1843	8.17		
3	1844	Manama	25.71		1844	7.65		
4	1845	Manama	21.18		1845	7.85		
5	1846	Manama	21.18		1846	8.55		
6	1847	Manama	21.18		1847	8.09		
7	1848	Manama	25.12		1848	7.98		
8	1849	Manama	25.37		1849	7.98		
9	1850	Manama	24.95		1850	7.9		
10	1851	Manama	25.62		1851	8.18		
11	1852	Manama	25.44	=AVERAGE(C2:C11)		8.1	8.045	
12	1853	Manama	25.47			8.04	8.032	
13	1854	Manama	25.26	24.077	1854	8.21	8.088	

Figure 4: Calculate 10-years Moving Average.

➢ Line chart of Manama city and Global average temperature

I created a line chart with the average temperature from 1843 to 2013.

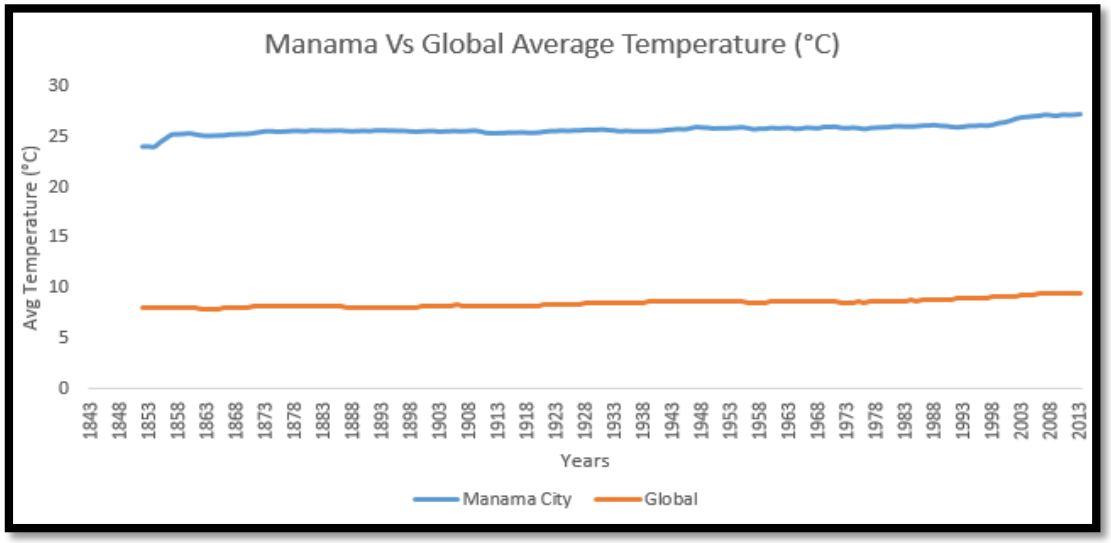


Figure 5: Manama Vs Global average temperature.

➢ Observations:

- Manama city temperature is higher than in the global average.
- Manama and Global temperature are both increasing.
- The global moving average temperature between (1843- 2013) increases by more than 1.5 degrees.
- Manama moving average temperature between (1843- 2013) increases more than 3 degrees.
- The world is getting hotter.

Reference:

- [1]: https://en.wikipedia.org/wiki/Manama