

Exploring Weather Trends

Project

Reported by

Khadija Omran Kidwai

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In this project, I analyzed the Cairo temperature trend (where I live temporarily) compared to the global temperature trends.

First step: Extract the data from the given SQL database in the project page:

To show the content of table, I used this query:

```
SELECT * FROM city_data
```

To extract the city (Cairo) level data:

```
SELECT year,avg_temp FROM city_data WHERE city='Cairo'
```

To extract the global data:

```
SELECT * FROM global_data
```

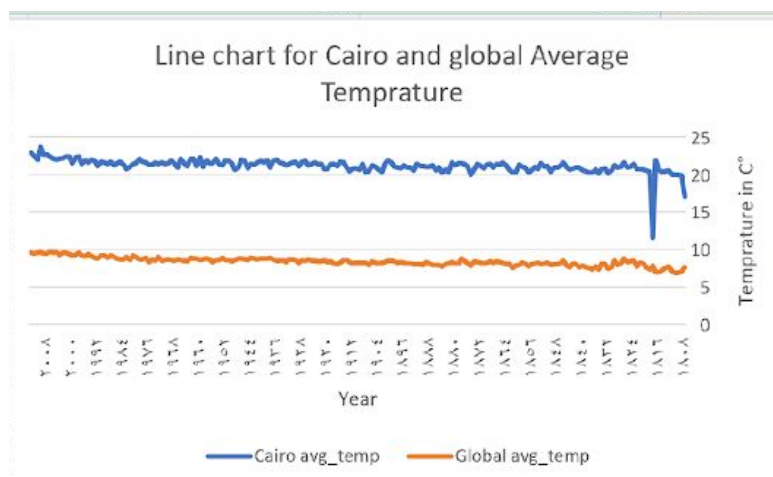
After that, download that data in csv. file .

I merge the two csv. files on year column

C	B	A	
Global avg_temp	Cairo avg_temp	year	
7.63	17.11	1808	1
7.08	19.87	1809	2
6.92	19.93	1810	3
6.86	20	1811	4
7.05	19.93	1812	5
7.74	20.51	1813	6
7.59	20.43	1814	7
7.24	20.3	1815	8
6.94	20.51	1816	9
6.98	21.88	1817	10
7.83	11.6	1818	11
7.37	20.31	1819	12
7.62	20.58	1820	13
8.09	20.63	1821	14
8.19	20.72	1822	15
7.72	20.71	1823	16
8.55	21.44	1824	17
8.39	21	1825	18
8.36	20.94	1826	19
8.81	21.63	1827	20
8.17	20.99	1828	21
7.94	20.91	1829	22
8.52	21.25	1830	23
7.64	20.52	1831	24
7.45	20.2	1832	25

Third Step: Calculate Moving Average (MA):

Before calculate the MA I will show you how the line chart look:



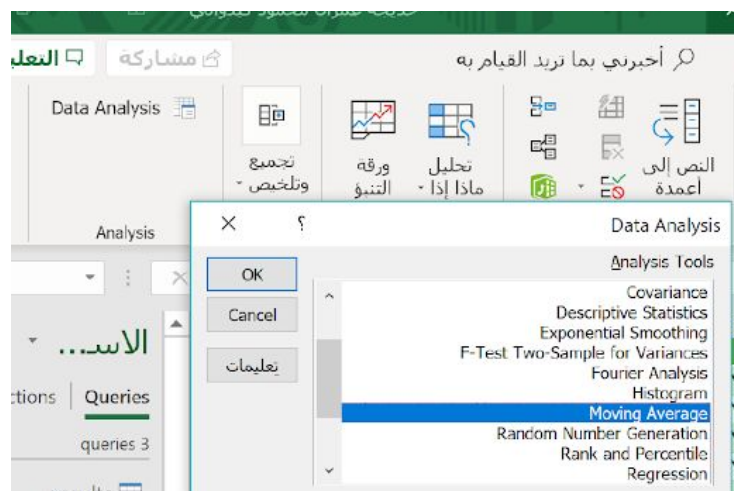
I made 10,5 years Moving Average for both Cairo and global avg temperatures and it calculated like this:

Use AVERAGE() function to calculate the average temperature for the first 5 years :

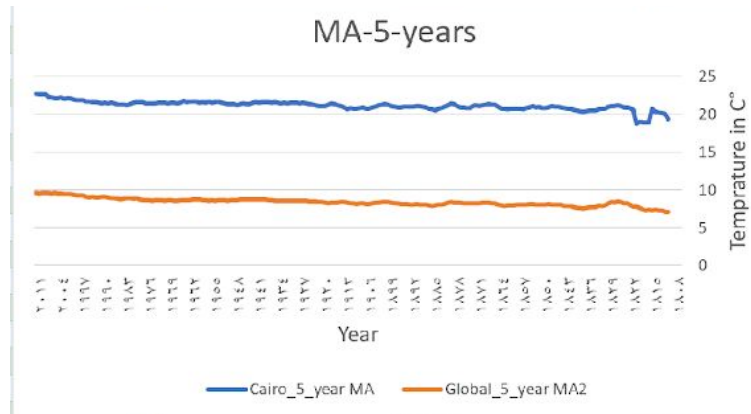
D	C	B	A
Cairo_5_year MA	Global avg_temp	Cairo avg_temp	year
	7.63	17.11	1808
	7.08	19.87	1809
	6.92	19.93	1810
	6.86	20	1811
=AVERAGE(B2:B6)	7.05	19.93	1812
	7.74	20.51	1813
	7.59	20.43	1814
	7.24	20.3	1815
	6.94	20.51	1816
	6.98	21.88	1817
	7.83	11.6	1818

E	D	C	B	A
	Cairo_5_year MA	Global avg_temp	Cairo avg_temp	year
		7.63	17.11	1808
		7.08	19.87	1809
		6.92	19.93	1810
		6.86	20	1811
	19.368	7.05	19.93	1812
		7.74	20.51	1813
		7.59	20.43	1814
		7.24	20.3	1815
		6.94	20.51	1816
		6.98	21.88	1817
		7.83	11.6	1818

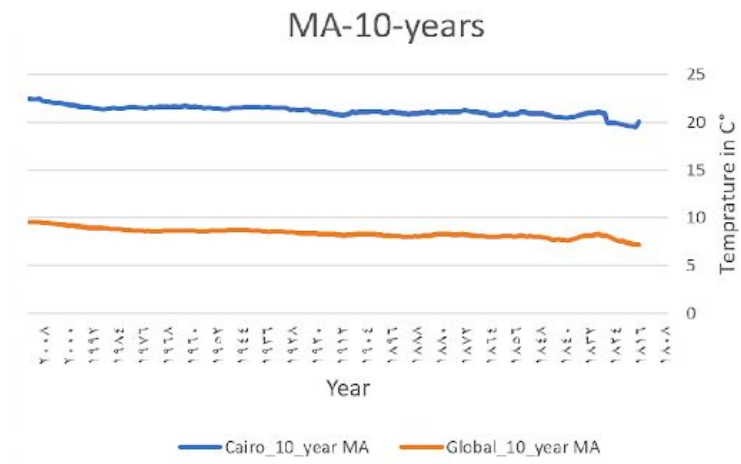
And continue for next cell by use Copy + Paste, Ctrl + D. and the same process for Global_10_year MA, but this process take long time , so I decided to use Data Analysis tools for Excel which make this process easy and fast.



This is line chart with Moving Average for 5 years:



And this is line chart with Moving Average for 10 years:



Fourth step: Observations

- There is approximately 10 degree between Cairo and global averages.
- Cairo city is hotter compared to the global average .
- The difference between Cairo city and global is consistent over time.
- The world become more hotter over the years.