

Goal of this project:

I will analyze local(Riyadh) and global temperature data and compare the temperature trends where I live to overall global temperature trends.

For this project I used Excel.

Steps:

1. Extracted the data by using SQL query.
2. I change column name(avg_temp in global_data to avg_temp_global) to grantee the process this working , then join 2 datasets (city_data and global_data) by year.

The screenshot shows a SQL editor interface. At the top, there's a navigation bar with 'رسال تعليق' (Comment Message), 'Accessing Data With SQL', and a menu icon. Below the bar, there are two tabs: 'Input' and 'Output'. The 'Input' tab contains a schema browser with three entries: 'city_data' (selected), 'city_list', and 'global_data'. To the right of the schema browser is a code editor with the following SQL query:

```
1 /* RIYADH exist so keep working*/
2 ALTER table global_data RENAME avg_temp TO avg_temp_global;
3 select city_data.*, global_data.avg_temp_global
4 from city_data Inner join global_data on city_data.year =
5 global_data.year
6 where city_data.city='Riyadh' and city_data.country='Saudi Arabia';
7
```

The code editor shows a 'Success!' message and a blue 'EVALUATE' button. The 'Output' tab shows a table with 171 results, containing columns: year, city, country, avg_temp, and avg_temp_global. The data includes rows for Riyadh in Saudi Arabia from 1843 to 1847. There are also footer statistics at the bottom of the table.

3. When I extract data, I delete missing values (2 observations) in column (avg_temp). after that I did a summary for the variables:

variable	max	min
year	2013	1843
Avg_temp	28.78	15.45
Avg_temp_global	9.73	7.56
Moving Average local	26.63	23.60
Moving Average global	9.55	7.98

4. Calculate the Moving Average by taking the avg_temp for 12 years, for local and global temperature.

AVERAGE fx =AVERAGE(D2:D13)

	A	B	C	D	E	F	G	H
1	year	city	country	avg temp	avg_temp_g	MA_12Years	MA_12Years	
2	1843	Riyadh	Saudi Arabia	24.74	8.17			
3	1844	Riyadh	Saudi Arabia	15.45	7.65			
4	1845	Riyadh	Saudi Arabia	20.82	7.85			
5	1848	Riyadh	Saudi Arabia	24.56	7.98			
6	1849	Riyadh	Saudi Arabia	24.8	7.98			
7	1850	Riyadh	Saudi Arabia	24.34	7.9			
8	1851	Riyadh	Saudi Arabia	25.03	8.18			
9	1852	Riyadh	Saudi Arabia	24.85	8.1			
10	1853	Riyadh	Saudi Arabia	24.93	8.04			
11	1854	Riyadh	Saudi Arabia	24.72	8.21			
12	1855	Riyadh	Saudi Arabia	24.92	8.11			
13	1856	Riyadh	Saudi Arabia	24.57	8=AVERAGE(D2:D13)			
14	1857	Riyadh	Saudi Arabia	24.26	7.76	AVERAGE(number1, [number2], ...)		

G15 fx

	A	B	C	D	E	F	G	H
1	year	city	country	avg_temp	avg_temp_g	MA_12Years	MA_12Years	
2	1843	Riyadh	Saudi Arabia	24.74	8.17			
3	1844	Riyadh	Saudi Arabia	15.45	7.65			
4	1845	Riyadh	Saudi Arabia	20.82	7.85			
5	1848	Riyadh	Saudi Arabia	24.56	7.98			
6	1849	Riyadh	Saudi Arabia	24.8	7.98			
7	1850	Riyadh	Saudi Arabia	24.34	7.9			
8	1851	Riyadh	Saudi Arabia	25.03	8.18			
9	1852	Riyadh	Saudi Arabia	24.85	8.1			
10	1853	Riyadh	Saudi Arabia	24.93	8.04			
11	1854	Riyadh	Saudi Arabia	24.72	8.21			
12	1855	Riyadh	Saudi Arabia	24.92	8.11			
13	1856	Riyadh	Saudi Arabia	24.57	8=AVERAGE(D2:D13)			
14	1857	Riyadh	Saudi Arabia	24.26	7.76	AVERAGE(number1, [number2], ...)		
15	1858	Riyadh	Saudi Arabia	25.01	8.1	23.6441667		
16	1859	Riyadh	Saudi Arabia	24.95	8.25	24.745		
17	1860	Riyadh	Saudi Arabia	24.94	7.96	24.7766667		
18	1861	Riyadh	Saudi Arabia	24.13	7.85	24.7208333		
19	1862	Riyadh	Saudi Arabia	23.77	7.56	24.6733333		
20	1863	Riyadh	Saudi Arabia	24.28	8.11	24.6108333		
21	1864	Riyadh	Saudi Arabia	25.03	7.98	24.6258333		
22	1865	Riyadh	Saudi Arabia	25.23	8.18	24.6508333		
23	1866	Riyadh	Saudi Arabia	24.92	8.29	24.6675		
24	1867	Riyadh	Saudi Arabia	25.22	8.44	24.6925		
25	1868	Riyadh	Saudi Arabia	25	8.25	24.7283333		
26	1869	Riyadh	Saudi Arabia	25.3	8.43	24.815		
27	1870	Riyadh	Saudi Arabia	25.02	8.2	24.8158333		
28	1871	Riyadh	Saudi Arabia	24.73	8.12	24.7975		
29	1872	Riyadh	Saudi Arabia	24.87	8.19	24.7916667		
30	1873	Riyadh	Saudi Arabia	25.24	8.35	24.8841667		
31	1874	Riyadh	Saudi Arabia	24.98	8.43	24.985		
32	1875	Riyadh	Saudi Arabia	24.43	7.86	24.9975		

	A	B	C	D	E	F	G
1	year	city	country	avg_temp	avg_temp_gl	MA_12Years	MA_12Years_global
2	1843	Riyadh	Saudi Arabia	24.74	8.17		
3	1844	Riyadh	Saudi Arabia	15.45	7.65		
4	1845	Riyadh	Saudi Arabia	20.82	7.85		
5	1848	Riyadh	Saudi Arabia	24.56	7.98		
6	1849	Riyadh	Saudi Arabia	24.8	7.98		
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8	1851	Riyadh	Saudi Arabia	25.03	8.18		
9	1852	Riyadh	Saudi Arabia	24.85	8.1		
10	1853	Riyadh	Saudi Arabia	24.93	8.04		
11	1854	Riyadh	Saudi Arabia	24.72	8.21		
12	1855	Riyadh	Saudi Arabia	24.92	8.11		
13	1856	Riyadh	Saudi Arabia	24.57	8	23.64416667=AVERAGE(E2:E13)	
14	1857	Riyadh	Saudi Arabia	24.26	7.76	12R x 1C 7=AVERAGE(number1, [
15	1858	Riyadh	Saudi Arabia	25.01	8.1	24.4000000000000003	
16	1859	Riyadh	Saudi Arabia	24.95	8.25	24.745	
17	1860	Riyadh	Saudi Arabia	24.94	7.96	24.77666667	
18	1861	Riyadh	Saudi Arabia	24.13	7.85	24.72083333	
19	1862	Riyadh	Saudi Arabia	23.77	7.56	24.67333333	
20	1863	Riyadh	Saudi Arabia	24.28	8.11	24.61083333	
21	1864	Riyadh	Saudi Arabia	25.03	7.98	24.62583333	
22	1865	Riyadh	Saudi Arabia	25.23	8.18	24.65083333	
23	1866	Riyadh	Saudi Arabia	24.92	8.29	24.6675	
24	1867	Riyadh	Saudi Arabia	25.22	8.44	24.6925	
25	1868	Riyadh	Saudi Arabia	25	8.25	24.72833333	
26	1869	Riyadh	Saudi Arabia	25.3	8.43	24.815	
27	1870	Riyadh	Saudi Arabia	25.02	8.2	24.8158333	
28	1871	Riyadh	Saudi Arabia	24.73	8.12	24.7975	
29	1872	Riyadh	Saudi Arabia	24.87	8.19	24.79166667	
30	1873	Riyadh	Saudi Arabia	25.24	8.35	24.88416667	
31	1874	Riyadh	Saudi Arabia	24.98	8.43	24.985	
32	1875	Riyadh	Saudi Arabia	24.43	7.86	24.9975	

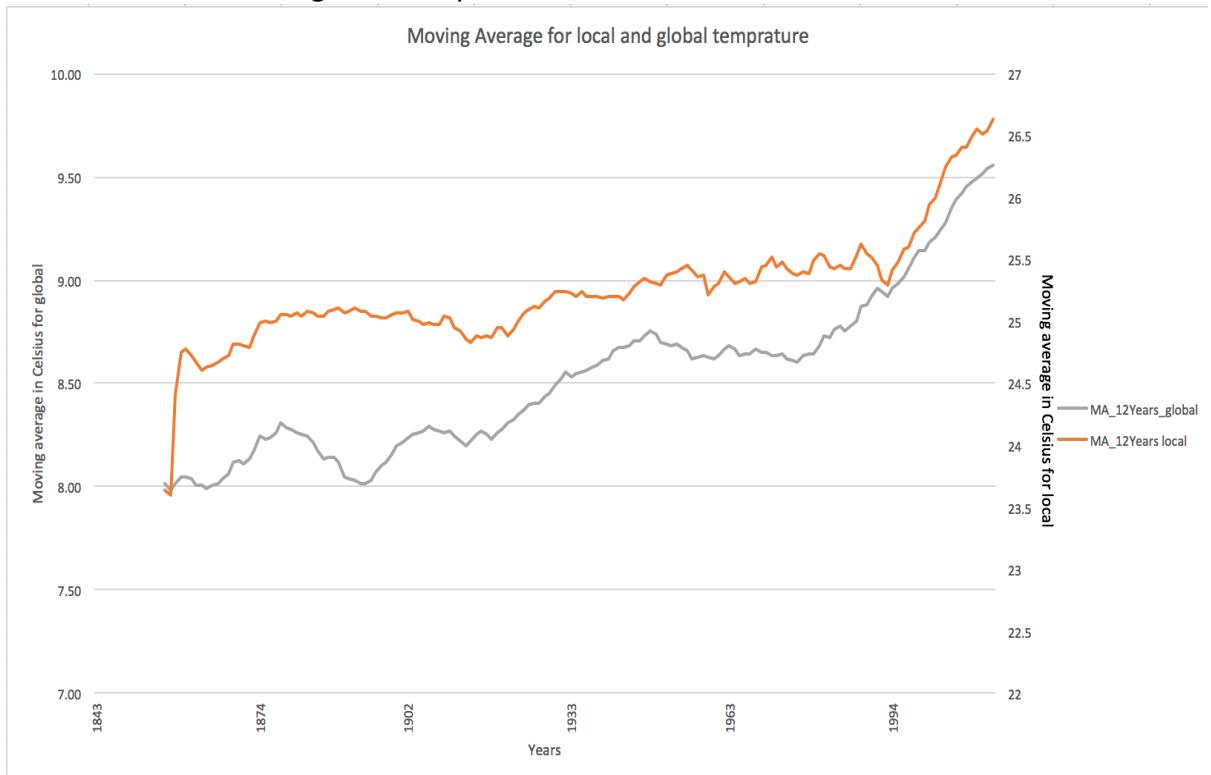
	A	B	C	D	E	F	G
1	year	city	country	avg_temp	avg_temp_gl	MA_12Years	MA_12Years_global
2	1843	Riyadh	Saudi Arabia	24.74	8.17		
3	1844	Riyadh	Saudi Arabia	15.45	7.65		
4	1845	Riyadh	Saudi Arabia	20.82	7.85		
5	1848	Riyadh	Saudi Arabia	24.56	7.98		
6	1849	Riyadh	Saudi Arabia	24.8	7.98		
7	1850	Riyadh	Saudi Arabia	24.34	7.9		
8	1851	Riyadh	Saudi Arabia	25.03	8.18		
9	1852	Riyadh	Saudi Arabia	24.85	8.1		
10	1853	Riyadh	Saudi Arabia	24.93	8.04		
11	1854	Riyadh	Saudi Arabia	24.72	8.21		
12	1855	Riyadh	Saudi Arabia	24.92	8.11		
13	1856	Riyadh	Saudi Arabia	24.57	8	23.6=AVERAGE(E2:E13)	8.0141666667
14	1857	Riyadh	Saudi Arabia	24.26	7.76	12R x 1C 7=AVERAGE(number1, [7.98
15	1858	Riyadh	Saudi Arabia	25.01	8.1	24.4000000000000003	8.0175
16	1859	Riyadh	Saudi Arabia	24.95	8.25	24.745	8.0508333333
17	1860	Riyadh	Saudi Arabia	24.94	7.96	24.77666667	8.0491666667
18	1861	Riyadh	Saudi Arabia	24.13	7.85	24.72083333	8.0383333333
19	1862	Riyadh	Saudi Arabia	23.77	7.56	24.67333333	8.01
20	1863	Riyadh	Saudi Arabia	24.28	8.11	24.61083333	8.0041666667
21	1864	Riyadh	Saudi Arabia	25.03	7.98	24.62583333	7.9941666667
22	1865	Riyadh	Saudi Arabia	25.23	8.18	24.65083333	8.0058333333
23	1866	Riyadh	Saudi Arabia	24.92	8.29	24.6675	8.0125
24	1867	Riyadh	Saudi Arabia	25.22	8.44	24.6925	8.04
25	1868	Riyadh	Saudi Arabia	25	8.25	24.72833333	8.0608333333
26	1869	Riyadh	Saudi Arabia	25.3	8.43	24.815	8.1166666667
27	1870	Riyadh	Saudi Arabia	25.02	8.2	24.8158333	8.125
28	1871	Riyadh	Saudi Arabia	24.73	8.12	24.7975	8.1141666667
29	1872	Riyadh	Saudi Arabia	24.87	8.19	24.79166667	8.1333333333
30	1873	Riyadh	Saudi Arabia	25.24	8.35	24.88416667	8.175
31	1874	Riyadh	Saudi Arabia	24.98	8.43	24.985	8.2475
32	1875	Riyadh	Saudi Arabia	24.43	7.86	24.9975	8.2266666667

for visual the moving average I used the following column:

year and avg_temp (for local temperature)

year and avg_temp_global (for global temperature)

5. Line chart for local and global temperature.



6. Observations:

- I. In 1994 we notice there is decreasing in the local and global temperature.
- II. After 1994 we can see the temperature become hotter for local and global temperature.
- III. In 1874-1895 we consider the global temperature decreasing in the other hand no big difference in local temperature.
- IV. Between 1915-1945 the temperature increasing for local and global temperature.