

Exploring Weather Trends- Project 1

Summary

In this project, analyze local and global temperature data and compare the temperature trends where I live to overall global temperature trends.

Steps

Step1- SQL part

Extracting the Data from data base for global and my city (Alex-Egypt) with the common starting year and ending year.

Query for Egyptian cities to choose the nearest city to my city.

```
-- select Egyptian city ^^
select city
from city_list
where upper(country) = upper('egypt');
-- Alexandria and Cairo
```

Select my city temp data

```
8  -- local temp data
9  select year as "l_year", avg_temp as "l_avg_temp"
10 from city_data
11 where upper(city) = upper('Alexandria')
12 and upper(country) = upper('egypt')
13 order by year ;
14 -- only from 1791 to 2013
15
```

Select global temp data

```
18 select year as "g_year", avg_temp as "g_avg_temp"
19 from global_data
20 where year in (select year
21                from city_data
22                where upper(city) = upper('Alexandria')
23                and upper(country) = upper('egypt'))
24 order by year;
25 --from 1791 to 2013
```

Step 2 – download CSV files

Make year, local average and global average in the same excel sheet.

Copy global avg_temp to local data excel sheet

1	g_year	g_avg_temp			
2	1791	8.23			
3	1792	8.09			
4	1793	8.23			
5	1794	8.53			
6	1795	8.35			
7	1796	8.27			
8	1797	8.51			
9	1798	8.67			
10	1799	8.51			
11	1800	8.48			
12	1801	8.59			
13	1802	8.58			
14	1803	8.5			
15	1804	8.84			
16	1805	8.56			

Step 3 – moving average

There are two way for making moving average:

- from **Date >>Data analysis >> moving average >> input >>number >>output >>ok .**
- Make the moving average for 10 years by select them and write average for first 10 year for both global and local to make line chart smoothie.

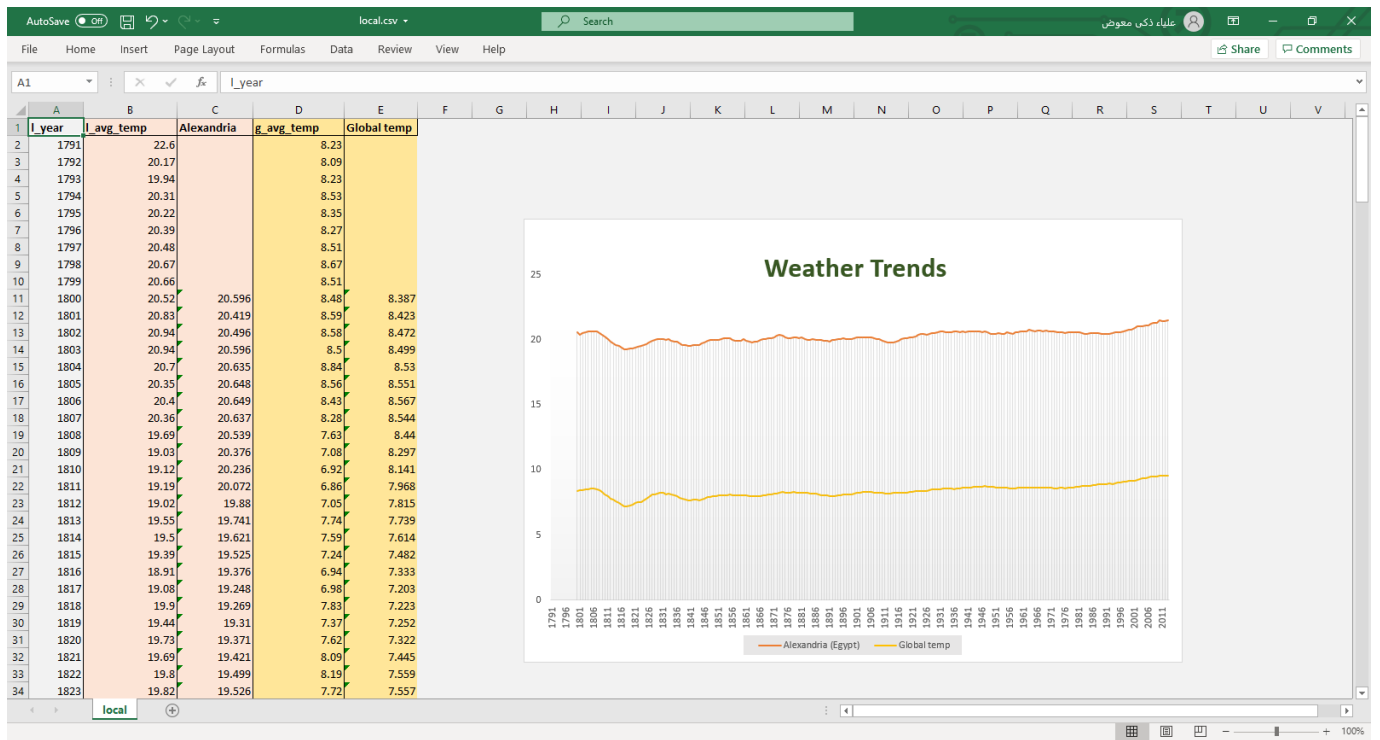
1	l_year	l_avg_temp	Alexandria	g_avg_temp	Global temp
2	1791	22.6		8.23	
3	1792	20.17		8.09	
4	1793	19.94		8.23	
5	1794	20.31		8.53	
6	1795	20.22		8.35	
7	1796	20.39		8.27	
8	1797	20.48		8.51	
9	1798	20.67		8.67	
10	1799	20.66		8.51	
11	1800	20.52	20.596	8.48	8.387
12	1801	20.83	20.419	8.59	8.423
13	1802	20.94	20.496	8.58	8.472
14	1803	20.94	20.596	8.5	8.499
15	1804	20.7	20.635	8.84	8.53
16	1805	20.35	20.648	8.56	8.551
17	1806	20.4	20.649	8.43	8.567
18	1807	20.36	20.637	8.28	8.544
19	1808	19.69	20.539	7.63	8.44
20	1809	19.03	20.376	7.08	8.297
21	1810	19.12	20.236	6.92	8.141
22	1811	19.19	20.072	6.86	7.968

Step 4 – make line chart

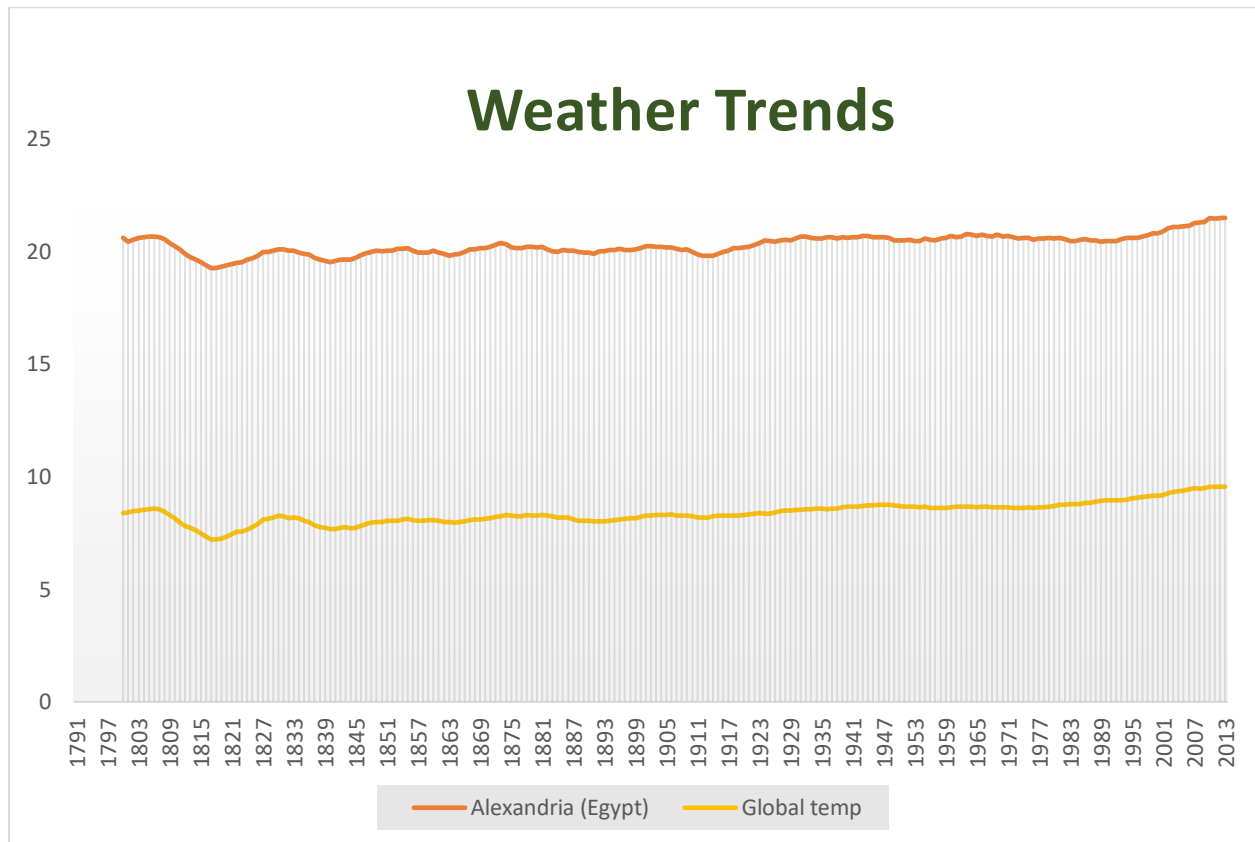
insert >>recommended charts>> line chart>>ok

The screenshot shows the Microsoft Excel interface with the 'Insert' tab selected. The 'Insert Chart' dialog box is open, displaying the 'Recommended Charts' tab. The 'Line' chart type is selected. The background spreadsheet shows the following data:

l_year	l_avg_temp	Alexandria	g_avg_temp	Global temp
1791	22.6		8.23	
1792	20.17		8.09	
1793	19.94		8.23	
1794	20.31		8.53	
1795	20.22		8.35	
1796	20.39		8.27	
1797	20.48		8.51	
1798	20.67		8.67	
1799	20.66		8.51	
1800	20.52	20.596	8.48	8.387
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1808	19.69	20.539	7.63	8.44
1809	19.03	20.376	7.08	8.297
1810	19.12	20.236	6.92	8.141
1811	19.19	20.072	6.86	7.968
1812	19.02	19.88	7.05	7.815
1813	19.55	19.741	7.74	7.739
1814	19.5	19.621	7.59	7.614
1815	19.39	19.525	7.24	7.482



observations



- My city Alexandria is hotter on average compared to the global average
- the difference has been consistent over time
- the overall trend looks like higher than global by 10 degree
- the world getting hotter
- the trend been hotter over the last few hundred years
- my city and global rise at about the same rate