Exploring Weather Trends

Abu Dhabi, United Arab Emirates

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Overview

In this project, I will analyze local and global temperature data and compare the temperature trends with Abu Dhabi temperature to overall global temperature trends.

Tools Used:

SQL:

- ✓ to extract data from the database

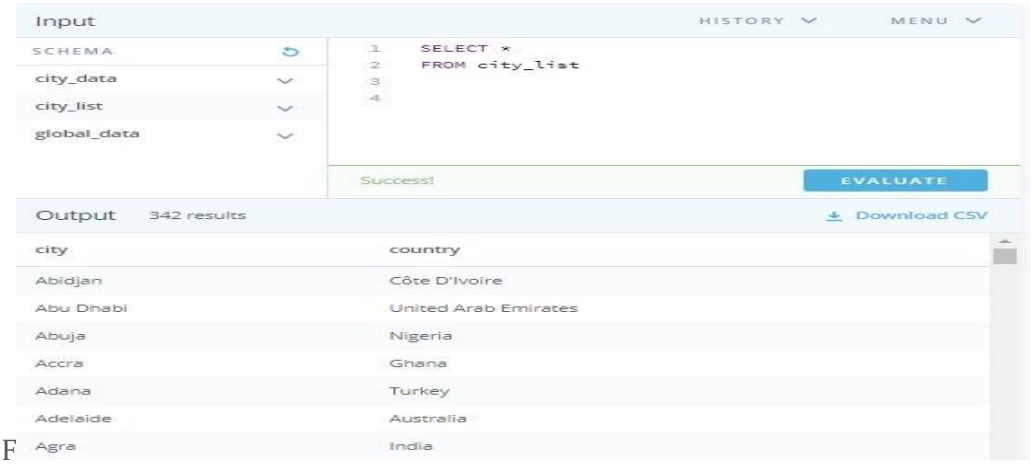
EXCEL:

- ✓ to calculate moving average for global and Abu Dhabi temperature
- ✓ Use the Line Chart to visualize the data

STEP 1:

I used SQL query to check all the cities in the database and then chose Abu Dhabi

```
SELECT *
FROM city_list
```



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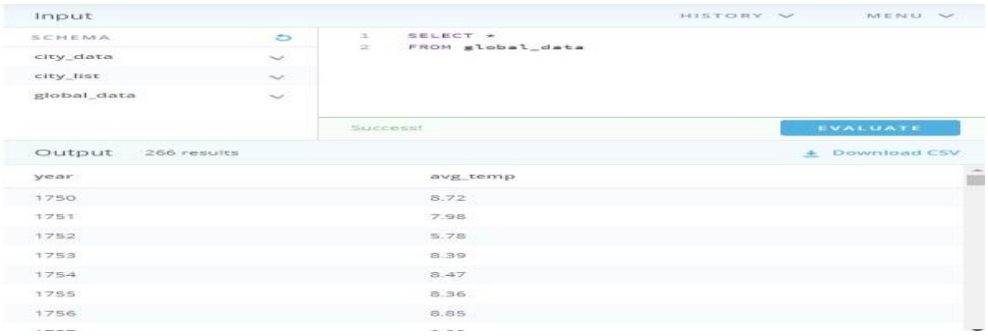
STEP 2:

I used SQL query to extract the global data and export to CSV file

SELECT *

FROM global_data

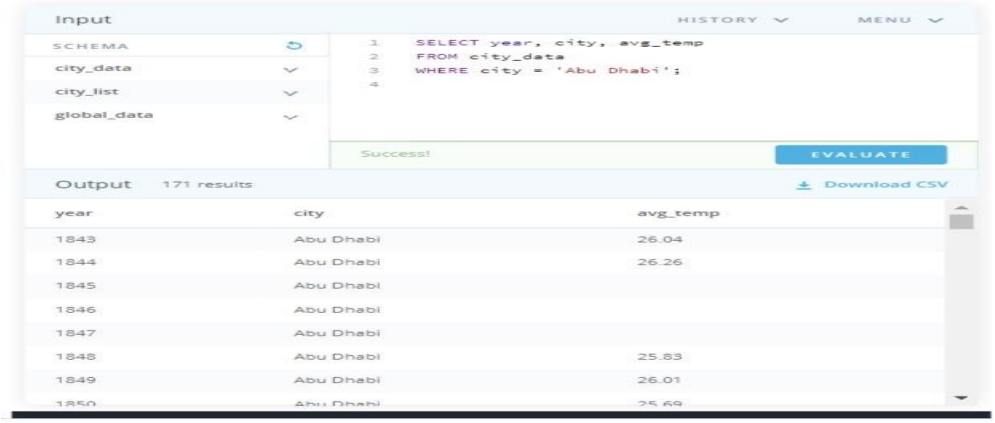


STEP 3:

I used SQL query to extract years and average temperature from city data and then export to CSV file

SELECT year, city, avg_temp

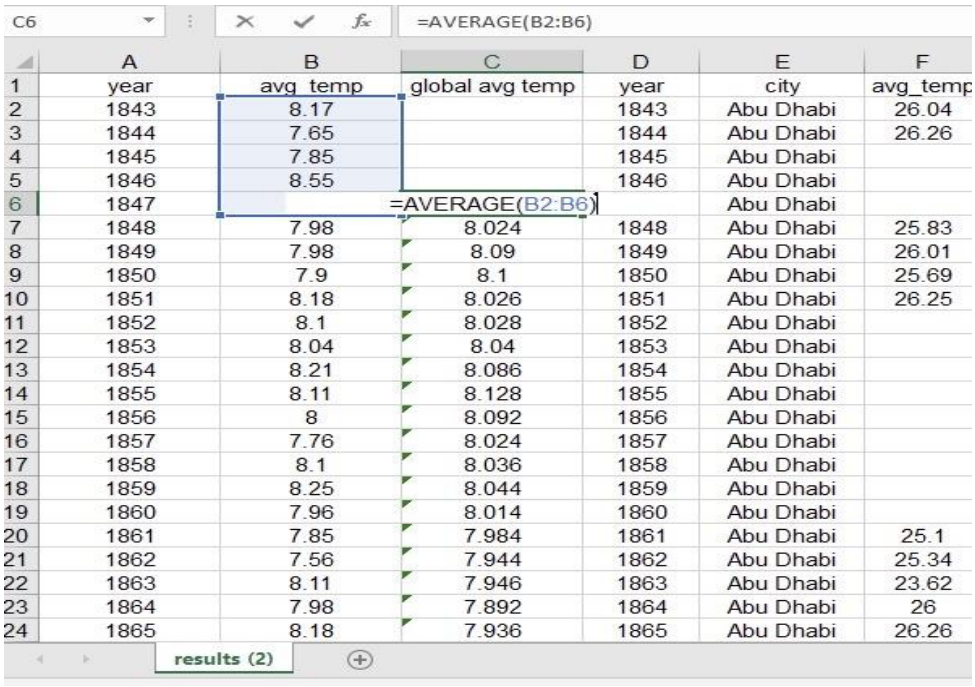
FROM city_data WHERE city = 'Abu Dhabi';



Moving Averages:

1. I calculated moving average to observe the trends in temperature
2. I used 5 years moving average to get the smooth line chart

How I have calculated the moving average:



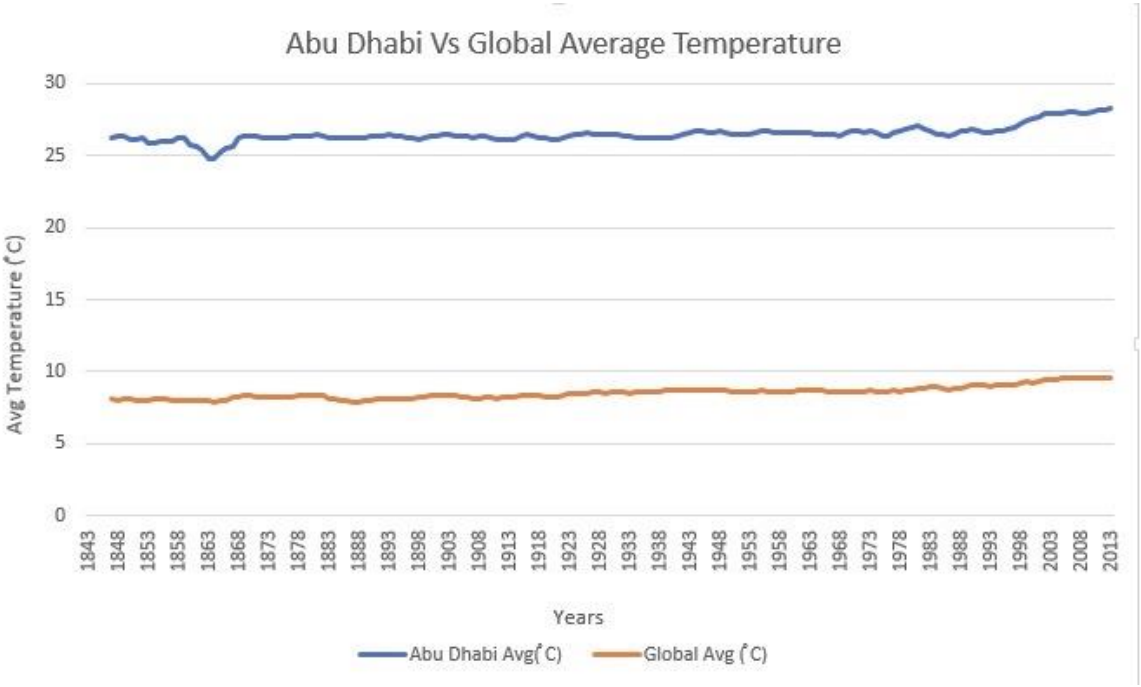
C6 | =AVERAGE(B2:B6)

	A	B	C	D	E	F
1	year	avg_temp	global avg temp	year	city	avg_temp
2	1843	8.17		1843	Abu Dhabi	26.04
3	1844	7.65		1844	Abu Dhabi	26.26
4	1845	7.85		1845	Abu Dhabi	
5	1846	8.55		1846	Abu Dhabi	
6	1847		=AVERAGE(B2:B6)		Abu Dhabi	
7	1848	7.98	8.024	1848	Abu Dhabi	25.83
8	1849	7.98	8.09	1849	Abu Dhabi	26.01
9	1850	7.9	8.1	1850	Abu Dhabi	25.69
10	1851	8.18	8.026	1851	Abu Dhabi	26.25
11	1852	8.1	8.028	1852	Abu Dhabi	
12	1853	8.04	8.04	1853	Abu Dhabi	
13	1854	8.21	8.086	1854	Abu Dhabi	
14	1855	8.11	8.128	1855	Abu Dhabi	
15	1856	8	8.092	1856	Abu Dhabi	
16	1857	7.76	8.024	1857	Abu Dhabi	
17	1858	8.1	8.036	1858	Abu Dhabi	
18	1859	8.25	8.044	1859	Abu Dhabi	
19	1860	7.96	8.014	1860	Abu Dhabi	
20	1861	7.85	7.984	1861	Abu Dhabi	25.1
21	1862	7.56	7.944	1862	Abu Dhabi	25.34
22	1863	8.11	7.946	1863	Abu Dhabi	23.62
23	1864	7.98	7.892	1864	Abu Dhabi	26
24	1865	8.18	7.936	1865	Abu Dhabi	26.26

results (2)

In this example I created a column called (global avg temp) to calculate the five-years average temperature using =AVERAGE(B2:B6) function.

Line Chart



Observations:

1. Abu Dhabi city temperature is higher than in the global average.
2. Abu Dhabi moving average temperature between (1863-1864) decreases more than 4 degrees and increased more than 4 degrees in the last years.
3. The global moving average temperature between (1843-2013) increases by more than 1.5 degrees.
4. both types of temperature (global and local) show an upward trend, that is the world is getting hotter.