

Project 1

Explore Weather Trends

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Outlines

- SQL to extract data.
- Excel to calculate Moving Average, by Average formula.
- Key considerations: using same years to compare and interpolate missing data.

1. Extract the data

The SQL queries that I have used to extract the data:

- `select * from city_list where country = 'Saudi Arabia';`
- `select year, avg_temp from city_data where city = 'Riyadh';`
- `select * from global_data;`

Here is the output of the first query, from this I chose the nearest city to me which is Riyadh.

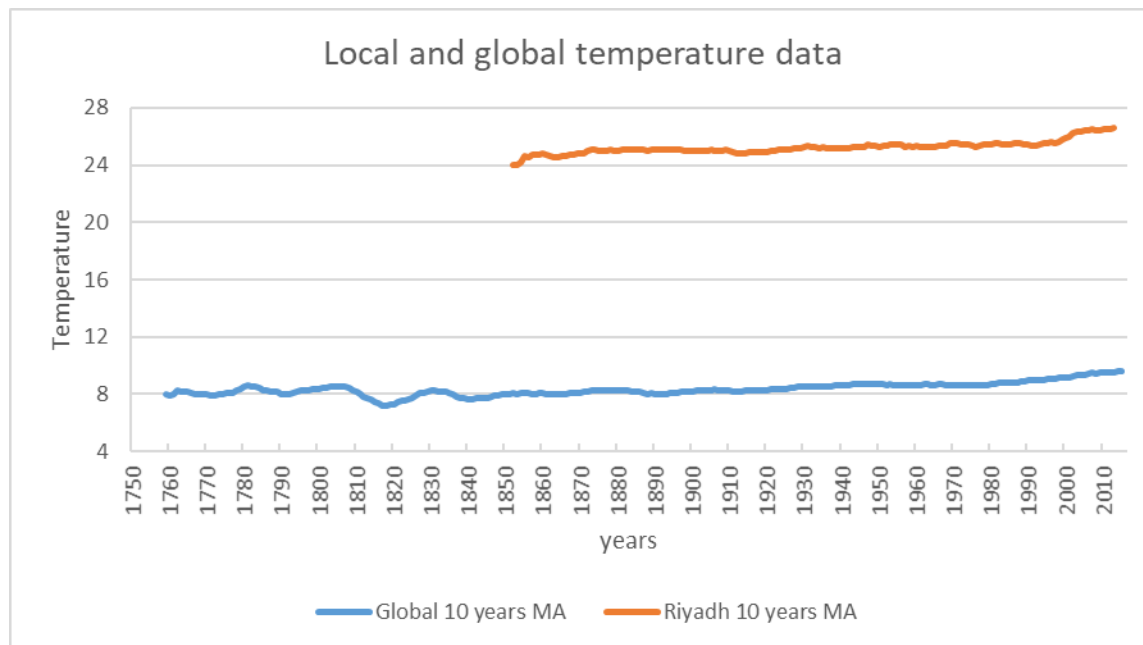
City	country
Mecca	Saudi Arabia
Riyadh	Saudi Arabia

For the two other queries they run without error and I got the intended data.

2. Open up the CSV

I used Excel to calculate the Moving Average for local and global temperature for the period of 10 years by using the average formula

3. Create a line chart



4. Make observations

Here are some of my observations:

- After observing the output of the second query, the average temperature in year 1844 was (15.45°C), this change does not fit with the average temperature for the next years due to the consistent changes over the time. For that, I have changed it through calculating the average temperature for the two years before and after it.
$$(24.74 + 20.82) / 2 = 22.78^{\circ}\text{C}$$
- There were some missing data in the same output of Riyadh city, so I applied a formula for calculating the average to interpolate the missing data.
- On average, Riyadh city is hotter than the global. Based on the above chart the data shows the differences in the average temperature over time is consistence in the range (24°C to 26°C).
- Riyadh city does not have record for the years between 1750 to 1842. So, I compare it from year 1843. Over the time both has a slight increase, but the global temperature is smoother compare to Riyadh city which has a noticeable increase in temperature.

- From the chart above we can observe from 1980 to 2010 there was an obvious increase in temperature which lead the world is getting hotter.