P1: EXPLORING WEATHER TRENDS

This project will focus on analyzing local and global temperature data and compares the local temperature trends to overall global temperature trends.

Steps

1. Extract the data from the database using **SQL**.

   - SQL query to extract Saudi Arabia cities data.

   - SQL query to extract the city (Riyadh) temperature data and global temperature data.

2. After downloading the CSV, the CSV is opened using **Excel** to manipulate the data.

- Calculating the **(5) years moving average** for global average temperature

AVERAGE	× ✓ fx	=(B2+B3+B4+B5+B6)/5	
	A	B	C	D
1	Year	Global avg_temp	City avg_temp	Global Moving_avg_temp
2	1843	8.17	24.74	
3	1844	7.65	15.45	
4	1845	7.85	20.82	
5	1846	8.55		
6	1847	8.09		
7	1848	7.98	24.56	=(B2+B3+B4+B5+B6)/5

- Calculating the **(5) years moving average** for the city Riyadh average temperature. **Note:** There are two missing data, and one of the approaches on how to handle missing data is to compute the overall median, So I did it.

AVERAGE	× ✓ fx	=(C2+C3+C4+C5+C6)/5		
	A	B	C	D	E
1	Year	Global avg_temp	City avg_temp	Global Moving_avg_temp	City Moving_avg_temp
2	1843	8.17	24.74		
3	1844	7.65	15.45		
4	1845	7.85	20.82		
5	1846	8.55	25.15		
6	1847	8.09	25.15		
7	1848	7.98	24.56		8.062 =(C2+C3+C4+C5+C6)/5

- Creating a **line chart** for the Average temperature, the x-axis represents the years, while the y-axis represents the average temperature in Celsius

Riyadh city temperature and global temperature moving average
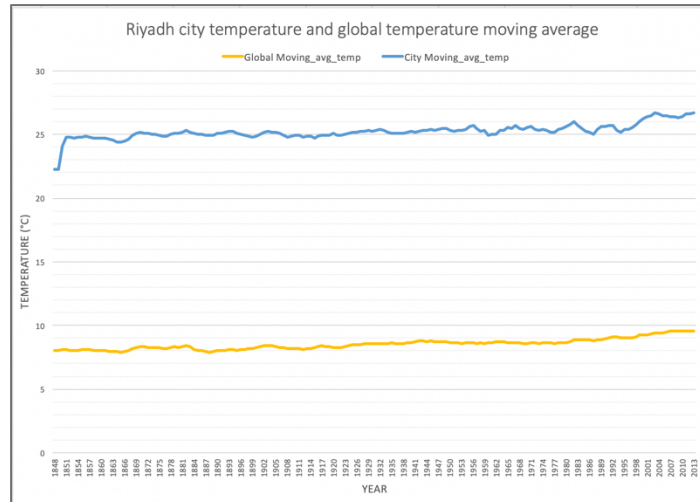
- Correlation coefficient is 0.802716623

CORREL	× ✓ fx	=CORREL(D7:D172,E7:E172)			
	A	B	C	D	E	F
1	Year	Global avg_temp	City avg_temp	Global Moving_avg_temp	City Moving_avg_temp	corrleation
2	1843	8.17	24.74			E172)
3	1844	7.65	15.45			
4	1845	7.85	20.82			
5	1846	8.55	25.15			
6	1847	8.09	25.15			
7	1848	7.98	24.56	8.062	22.262	
8	1849	7.98	24.8	8.024	22.226	
9	1850	7.9	24.34	8.09	24.096	

Observation

1. From the figure illustrated above, it was found that Riyadh city is hotter on average compared to the global average since the year 1843.

2. From the figure illustrated above, it was found that Riyadh city's temperature is getting high over time, and so is the global temperature.

3. The figure illustrated above shows that in the year 1862 Riyadh's temperature has affected the trend, which was Riyadh's lowest temperature since 1848.

4. The figure illustrated above shows that Riyadh city's temperature will continue to rise in the next 3 years.