Exploring Weather Trends

PROJECT 1

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Abstract

In this project, I analyzed local and global temperature data and compared the temperature trends in Riyadh to overall global temperature trends. I extracted the data from a database then exported to .CSV

Then the data has been analyzed using Excel to calculate a moving to smooth out data and observe the trends in temperature to get the best visualized line chart. Finally, I made observations about the similarities and differences between the world averages and my city's averages.

Objective

The objective of this analysis:

- Extract data from a database using a SQL query
- Calculate a moving average in a spreadsheet
- Create a line chart in a spreadsheet
- Make observations about the similarities and differences between the world averages and my city's averages.

Process & Tools

I have used SQL query to extract data from a database and Excel to open up the CSV file, calculate a moving average and create a line chart.

Extracted data & Moving Averages Description:

Method	
Extract data from a databasec	**(To check the city_list include Riyadh city)** SELECT * FROM city_list WHERE city = 'Riyadh'
	(To extract Riyadh's data from city_data) SELECT * FROM city_data WHERE city = 'Riyadh'
	(To extract global's data from global_data.) SELECT * FROM global_data
Tool used	SQL, Excel
File extension	.CSV
Moving Average; **I have used MA to smooth out data and observe the trends in temperature.**	**(Excel command; AVERAGE() function to calculate the MA for 10-years)** = AVERAGE(B2:B11)

Data Visualization and Findings:

Data visualization is a quick, easy way to convey concepts in a universal manner. It gains insight into an information space by mapping data into graphical shapes. I will represent my findings in graphics to promote creative data exploration.
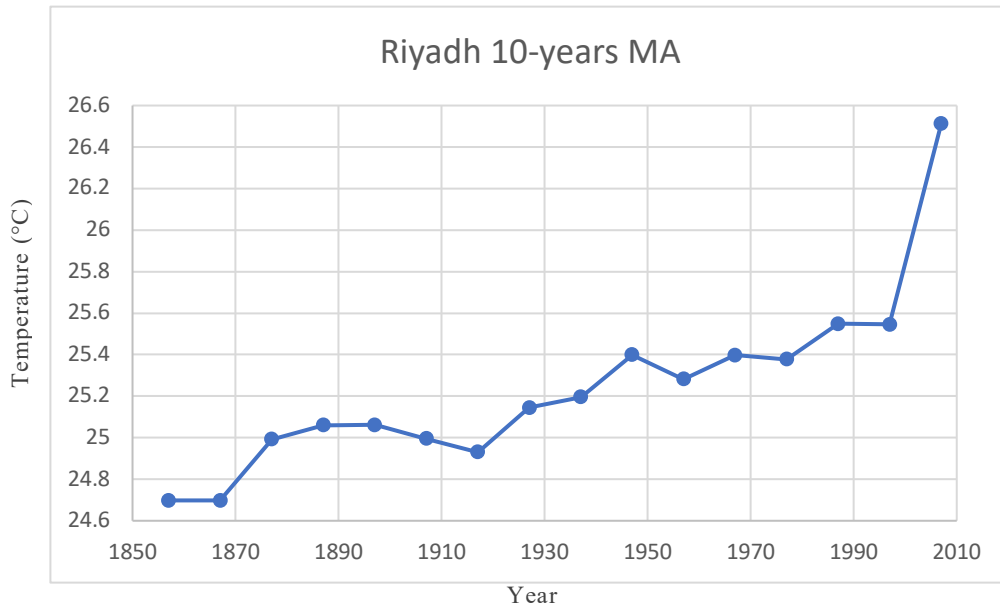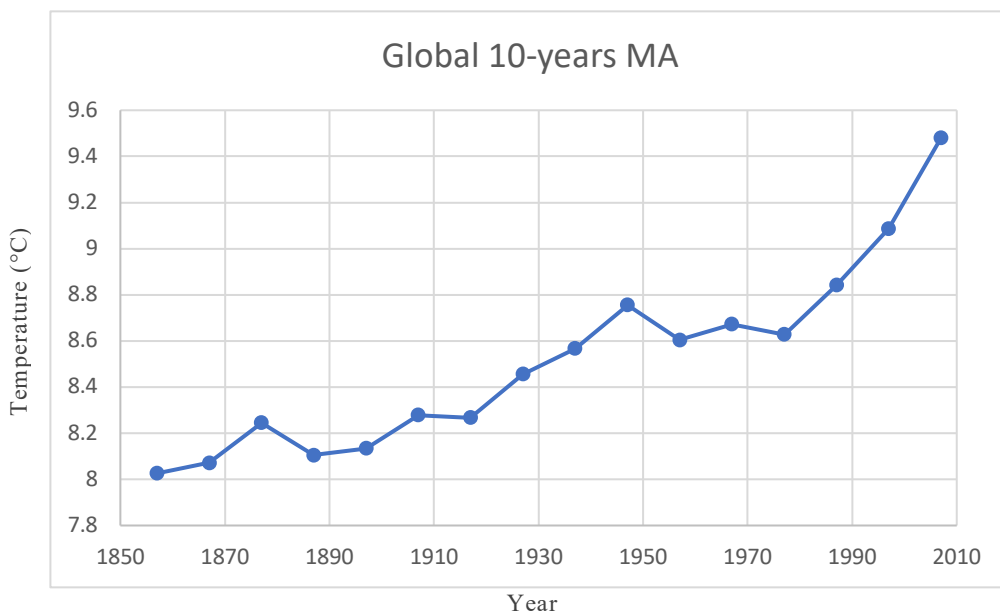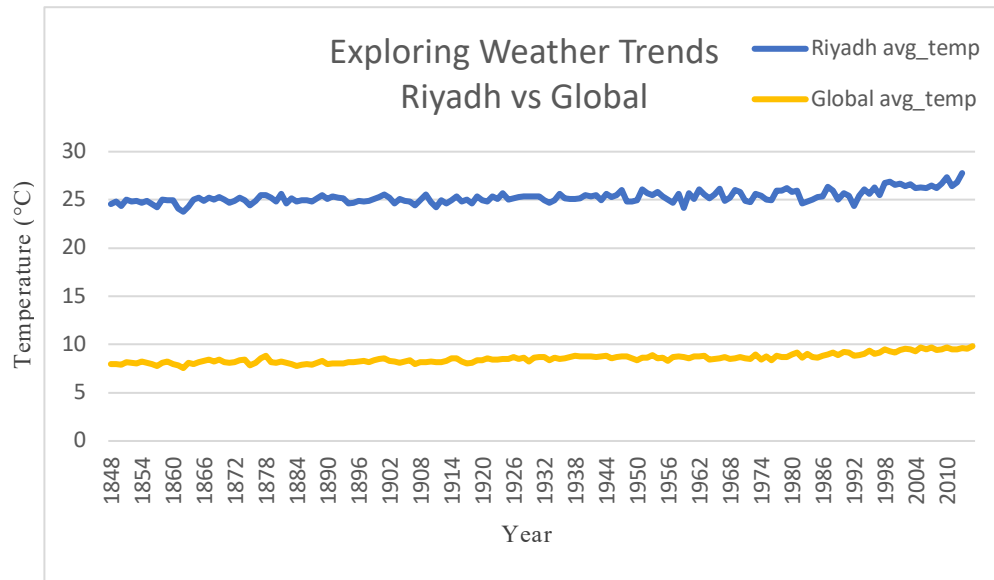

Figure 1

Figure 2

Figure 3

Observations:

- Riyadh city average temperature for 10-years MA varies between **24.7**°C to **26.5**°C [Figure 1] and the global average temperature for 10-years MA varies between **8.03**°C to **9.5**°C [Figure 2] So Riyadh city hotter on average compared to the global average.

- The difference been consistent over time between Global average temperature and Riyadh city average temperature.

- Riyadh city average temperature is increasing year by year due to changes in the world climate.

- The trends in Riyadh and average global temperatures are similar

- The figure shows the world getting hotter.

- Later during 1997 to 2007 both the temperatures increased in Riyadh. [Figure 1]