

Exploring Weather Trends

Step1- Extracting the data from 3 tables (City_list , city_data, global_data) in database by using the bellow SQL query:

Select Country,City from City_list;

Select country, city, avg_temp, year from city_data;

Select year, avg_temp from global_data;

Step2- Open the CSV and preparing the data to make a line chart:

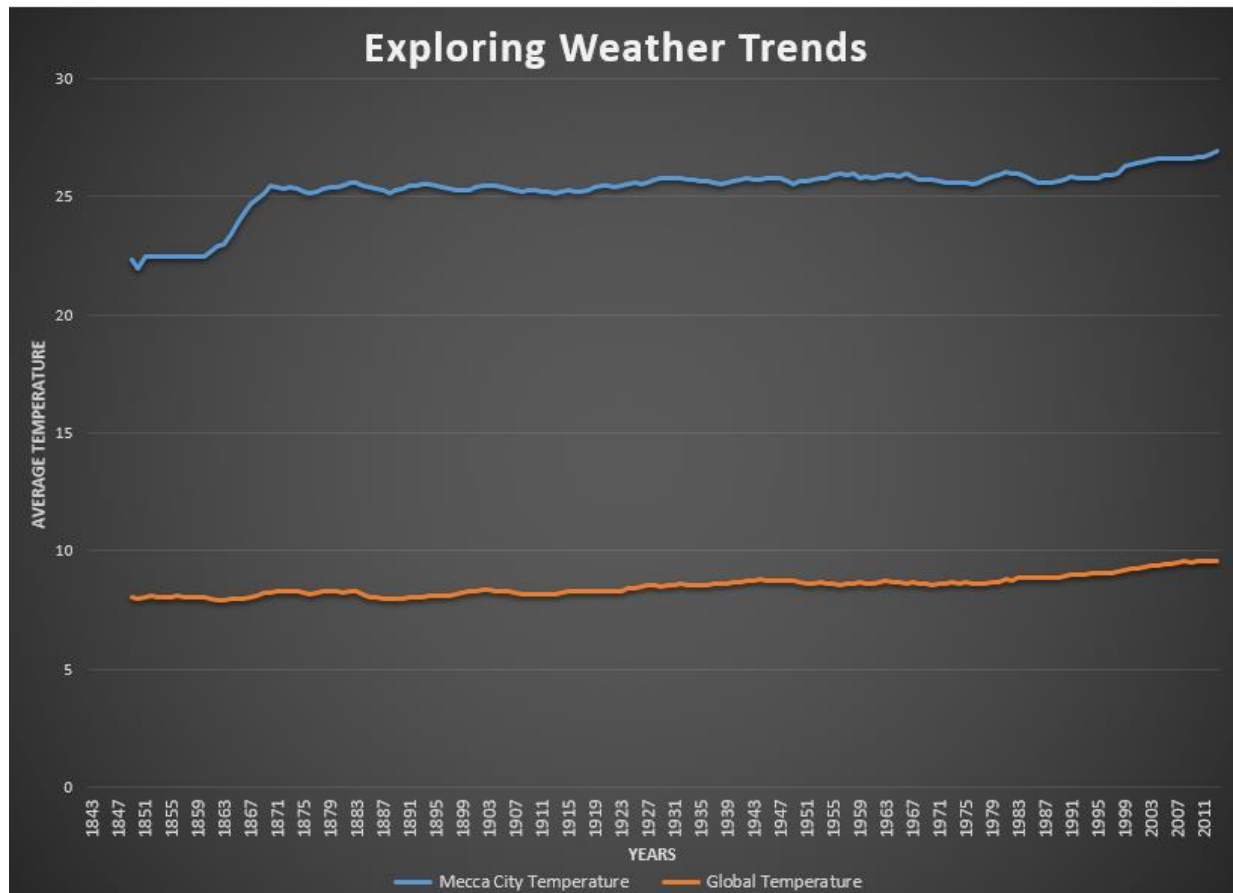
In this step I used Excel to open, prepare and analysis the data. As well as making a line chart that shows a comparison between Mecca City Temperature and the Global Temperature. In order to make the data visualization more observable and to smooth out the lines I calculated the Moving Average and used it in the line chart instead of the Yearly Average.

- **What tools did you use for each step?** SQL & Excel
- **How did you calculate the moving average?** I calculate the moving average by using this function in Excel AVERAGE () for the 7th year, which means year 1849 then drag it down to the last cell.

- **What were your key considerations when deciding how to visualize the trends?**

Key consideration:

- Using the best chart type in this case is the line chart to represent a comparison between two variables.
- Making sure to use an appropriate title for the chart, axis and using legends.
- Making sure that the data visualization is clear, simple and does not hide any important details or facts.
- Making sure that the data visualization is telling a story and describing the trends easily without making a confusion for the reader.



Step 3- Making observations:

In general, Mecca city has a hotter temperature compared to the global average temperature. The difference between Mecca and global temperature is not consistent over time.

The changes in the temperature of Mecca city is radically increasing over time/ years whereas the global temperature is increasing slightly over time/ years.

The overall trend is increasing over years which means the world is getting hotter.

The main similarity between Mecca temperature and the global temperature is the continuous increasing of the temperature across the years.

The main difference is Mecca average temperature is way hotter than the overall global weather. Also Mecca has a sharp increase in temperature between 1863 and 1875, unlike the global temperature in which it was a slightly fluctuating between 1863 and 1875.