EXPLORE WEATHER TRENDS PROJECT

DATA ANALYST FIRST PROJECT

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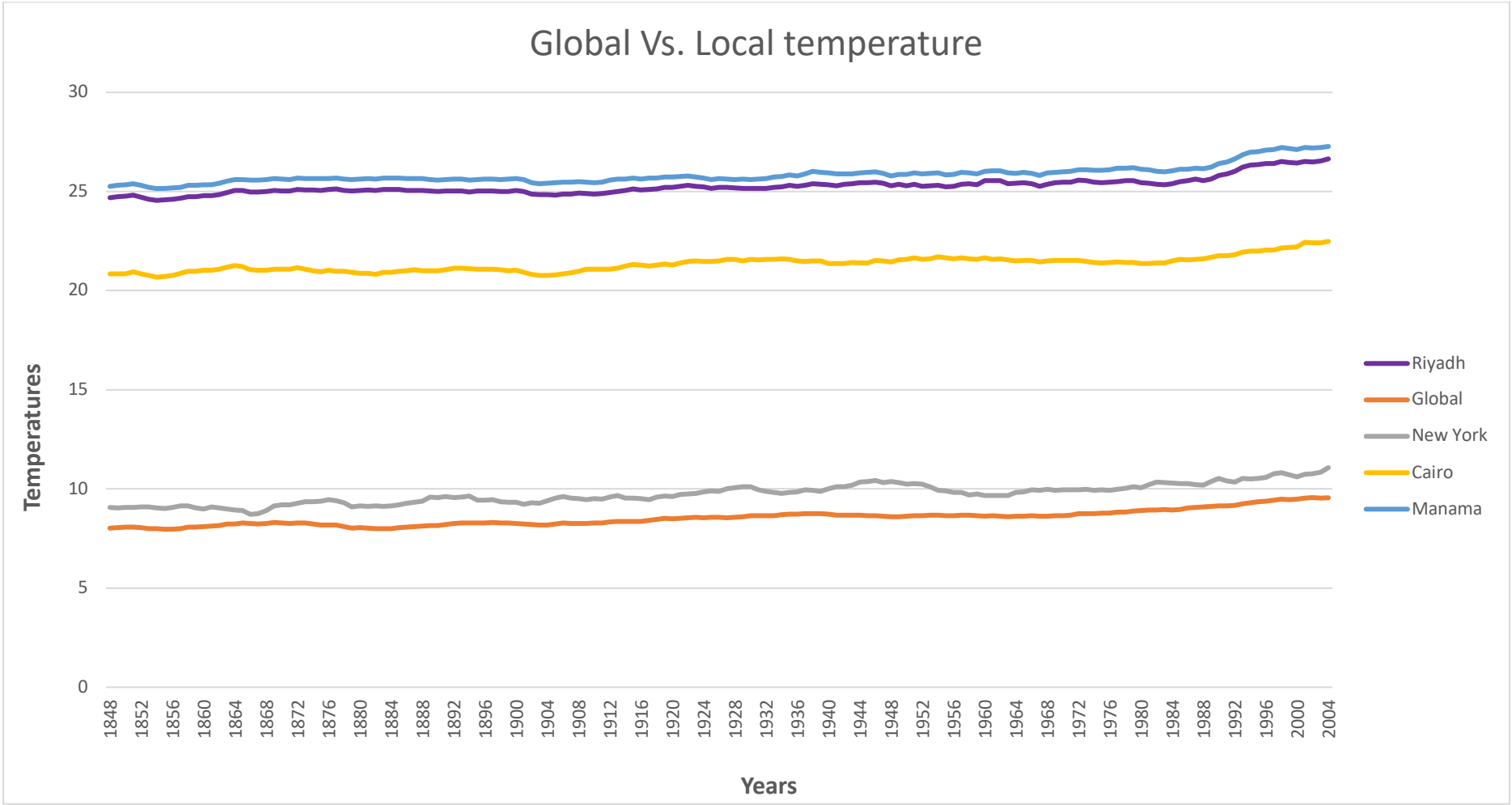
Introduction

The purpose of this document is to present the first project within this course which it aims to create a visualization that describe the similarities and differences between global temperature trends and temperature trends in local city (The closest city to where I live).
Below are the instructions that I have been followed to pass the project:

- Extract the data from the database
- Open up the CSV
- Create a line chart that compares my city's temperatures with the global temperatures
- Make observations about the similarities and differences between the world averages and my city's averages, as well as overall trends.

Regarding the selection of local temperature, I chose the city of Riyadh since it is where I live. Also, I have used Microsoft Excel to open up the CSV.

Global Vs. Local temperature CHART



Followed Steps

The data was extracted from database using The following SQL queries:

- Global data query:
```
SELECT *
FROM global_data
WHERE year >= 1848 AND year <= 2013;
```

  NOTE: I chose the period between 1847 and 2013 to make global data consistent with local data, excluding years that did not include temperature data.

- Local Data query:
```
SELECT *
FROM city_data
WHERE city = 'Riyadh' AND year >= 1848;
```

- Certain multiple cities queries:
```
SELECT *
FROM city_list
WHERE country = 'United States'; // to specify a city within United states. Also, Same query done for Egypt
 And Bahrain

SELECT *
FROM city_data
WHERE city = 'New York' AND year >= 1848; // the same query used for 'Cairo' and 'Manama'
```

After extracting the data as CSV , I opened the files in Microsoft Excel and did the follows:

- Create new column called (10-Year MA), which is where the moving average is stored
- Go to the tenth year (1857) and used the AVERAGE() function to calculate the average of the first 10 years temperatures, and going through the next cells by click and drag the formula down to the next cell.
- By doing that, I did smooth out data using 10-years moving averages
- This was done for both local, global temperature and other cities temperature.
- I Created a Line chart that compares Local temperatures with the global temperatures and other cities.

observations

- The average temperature in Riyadh is high (hotter) compared to the average global temperatures.
- The average temperature in Riyadh is similar to the average global temperature in terms of consistency in the rates of temperature changes during the past years until 1988.
- In the past years, it has been observed that average temperatures are high compared to previous years for both local and global temperatures. This indicates that the overall trend is consistently increasing to be getting hotter over time due to the global warming problem which will have a higher impact on the local level for Saudi Arabia especially in regard to water resources.
- When comparing temperatures with some other cities gradually towards the west, we find that the more we head east, the higher the average temperature.