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EXPLORE WEATHER TRENDS

FIRST PROJECT

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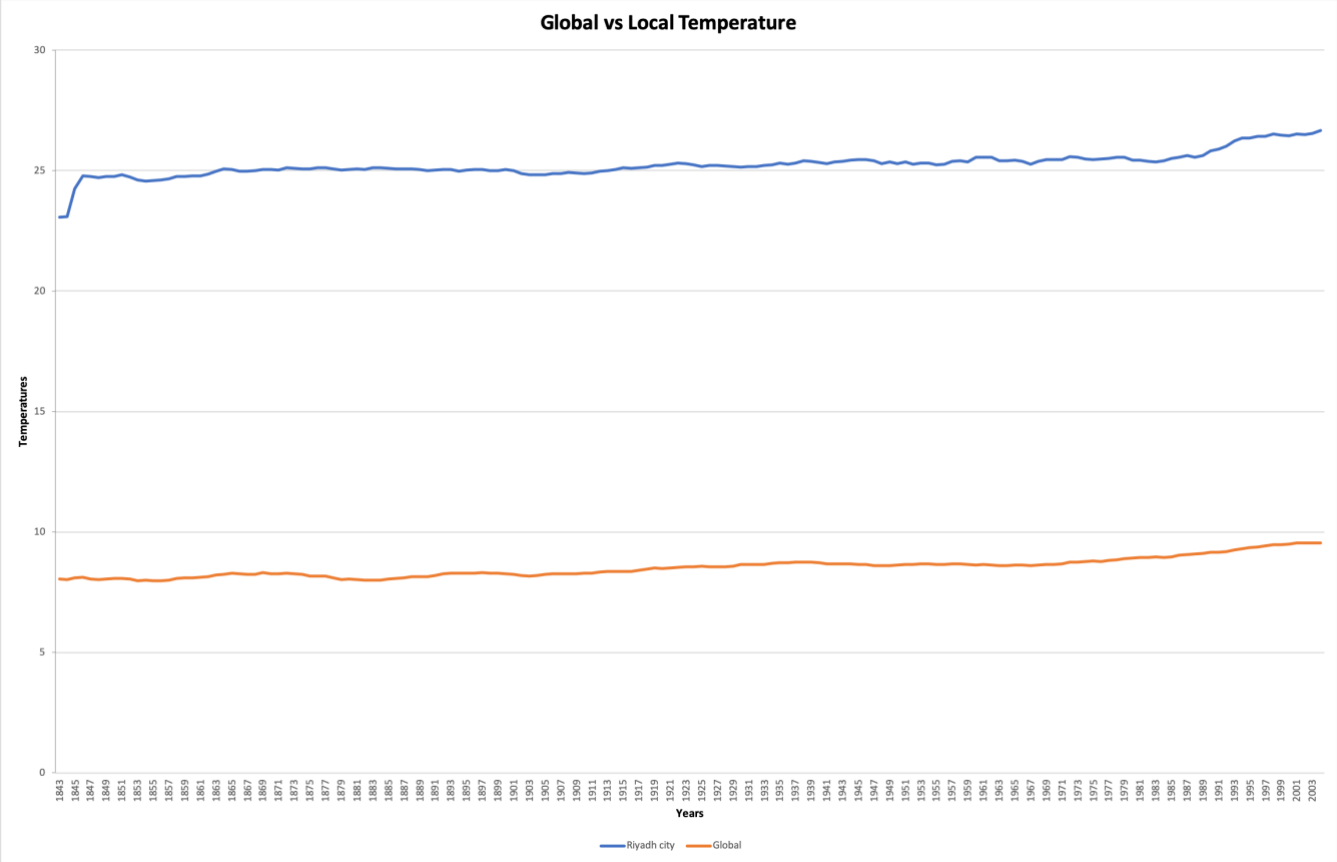
Introduction

The main goal of this project is to create a visualization and describe some of the similarities and differences between the global temperatures and the local ones (by choosing closest city to where I live). The following are the instructions that I have been given to follow in order to pass the project:

- Extract the data from the database (export as CSV)
- Open up the CSV
- Create a line chart
- Make observations

As of the concernment of selection of local temperature, I have chosen Riyadh city since it is where I live. In addition, I have used Microsoft Excel to open up the data that was extracted from the database and visualize them.

Chart



Steps

Right after reading the project description and instructions, I have started working on the first step which is extracting the data from the database using SQL queries. The following are the queries I have used to extract the global data and local data (Riyadh city):

- Global data:
```
SELECT *
FROM global_data
WHERE year >= 1843 AND year <=2013;
```
  Note that I have chosen the period that is between 1843 and 2013 to make the global data consistent with local data

- Local data:
```
SELECT year, avg_temp
FROM city_data
WHERE city = 'Riyadh';
```

After extracting the data as CSV (Comma-separated values), I opened the files in Microsoft Excel and created a line chart using them. Before creating the line chart, I used 10-years moving averages to smooth out data, by creating a new column called 10-Year MA, which is where the moving average is stored, I selected the 10^{th} year and used the AVERAGE() function to calculate the average of the first 10 years temperatures, and going through the next cell using copy + paste.

Observations

Like is shown in the chart, my city's temperature is way hotter than the global temperature, where the difference has been consistent during the past years. I have seen that the first years of my city's temperature's data were disoriented and there were gaps but it gets oriented over time as the global data. The latest few years of my city's temperature's data, I have noticed that there was a high increase in the temperature. To conclude, the overall trend is consistently increasing to be getting hotter over time due to the global warming problem.