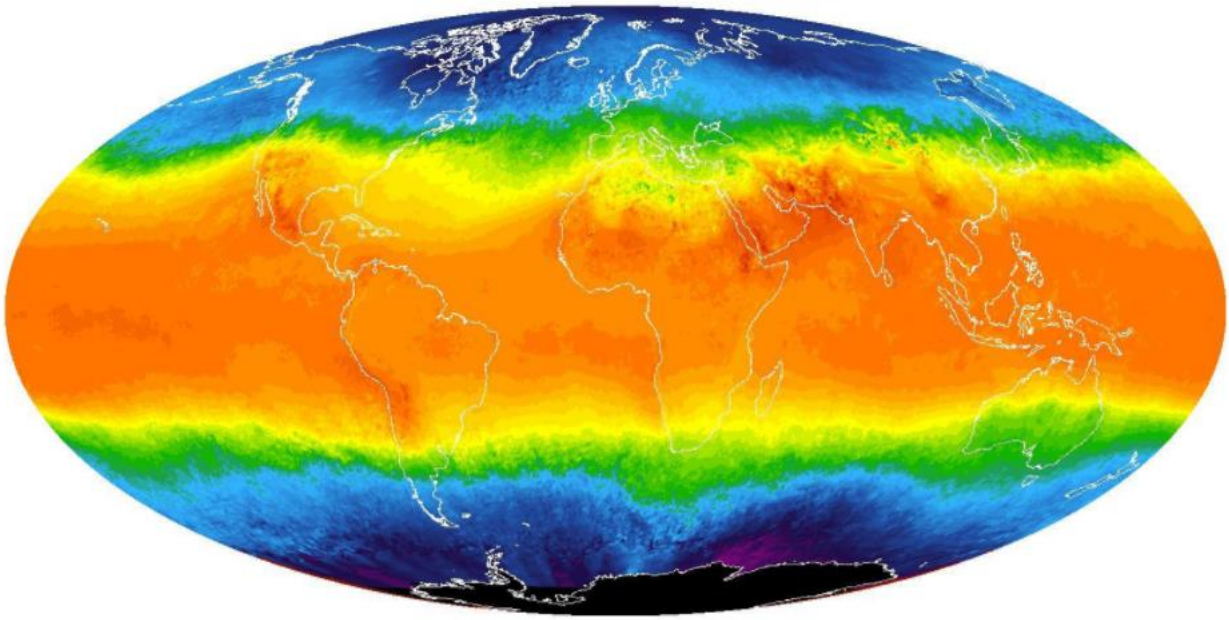
UDACITY

Explore Weather Trends



Udacity: Data Analyst

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Project 1

1-Extract Data from Database.

First, I need to find the city which is closest to where I live. Identified Riyadh closest's to where I live so I wrote an SQL query to retrieve the cities in the Saudi Arabia, Riyadh.

```
SELECT *
FROM city_list WHERE country = 'Saudi Arabia'
AND city ='Riyadh';
```

2- Extract Riyadh Data

Now extract all the temperature data for the city of Riyadh using SQL Query as follows:

```
SELECT avg_temp, year, city, country
FROM city_data
WHERE city='Riyadh';
```

*This will return 171 results in total from the year 1843-2013

3-Extract Global Data

Extract global data as follows:

```
SELECT *
FROM global_data;
```

*This returns 266 results from the year 1750-2015.

4-Data Selection & Manipulation

Data Selection

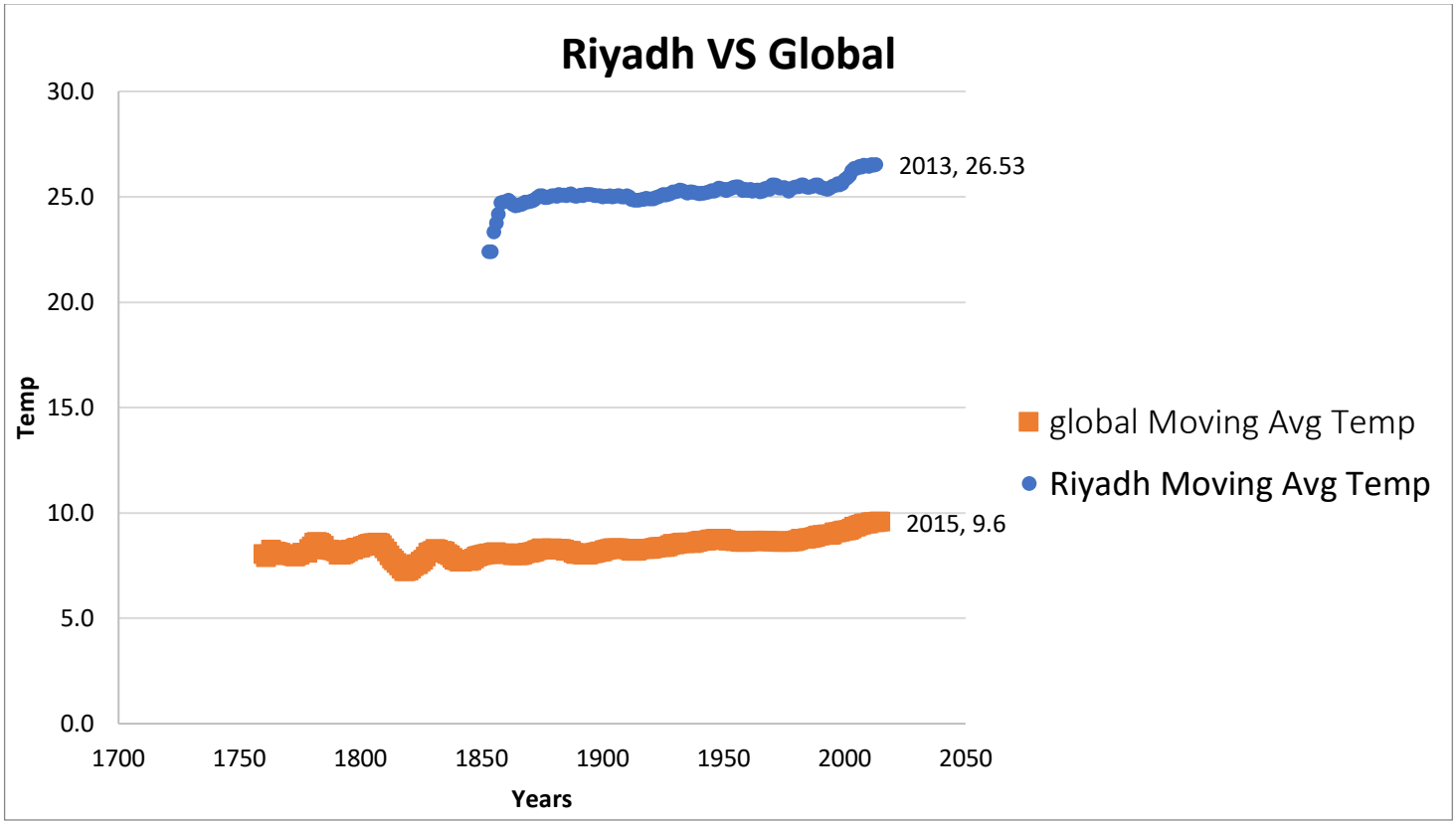
All data from previous exercise has been extracted as CSV files and imported into Excel for further evaluation. As mentioned in the previous section, there were more results in the global database.
Furthermore, while extracting the 171 results from the Riyadh, it seems that the result have returned null values so I coped with problem that be computation moving average temperatures for 3 years before. I choosing all the data.

Data Manipulation

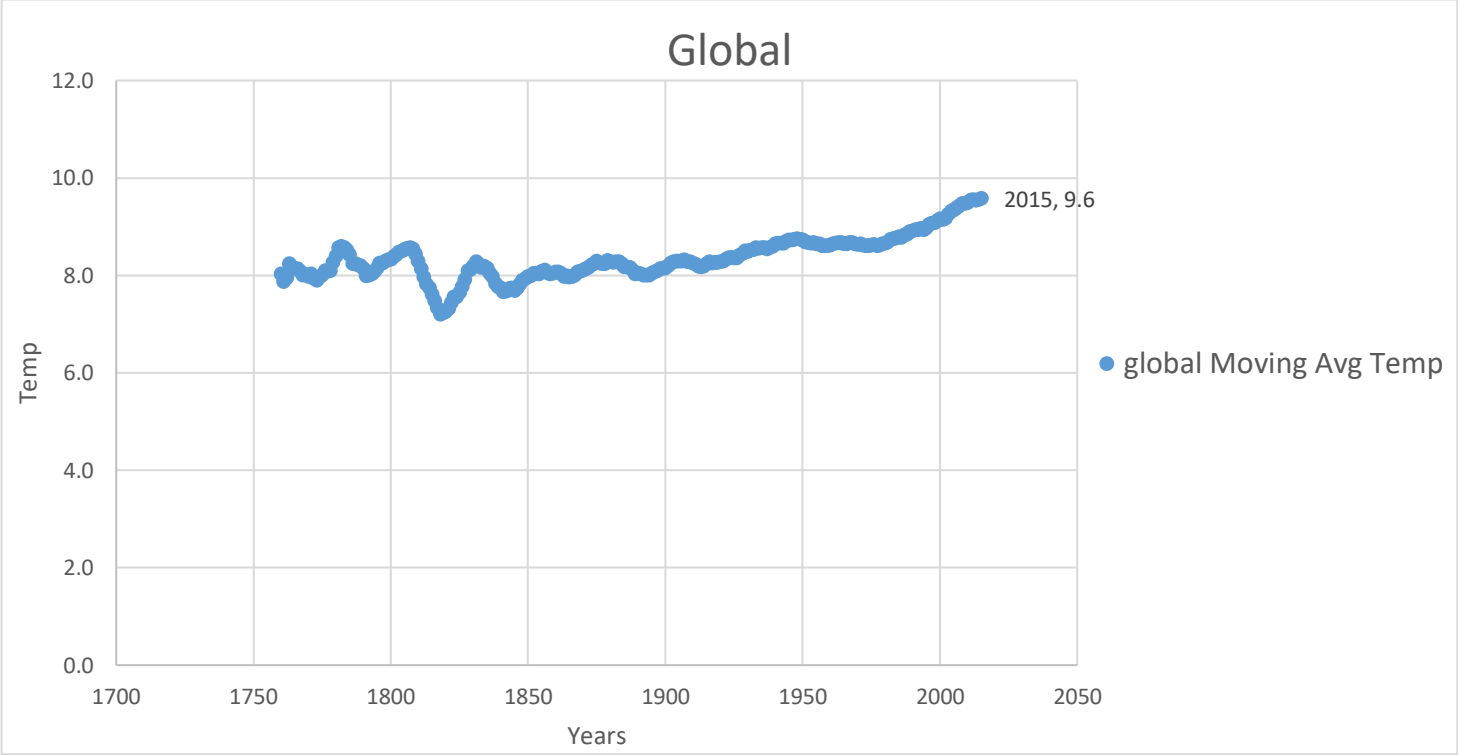
The moving average has been prepared on same excel spreadsheet on a 10 years basis. This is done by calculating the average temperature for the first 10 years (1750-2015).
The same procedure is performed for both the local city data and global data to obtain data which will be used for data visualization.

3- Data Visualization

I am now able to plot a line chart to show a comparison between the local city average temperature and global average temperature. This is done by plotting the moving average temperature on the Y-axis and the X-axis. After inputting the corresponding values on excel, the following line chart is generated.



Another chart is plotted to show the global average temperature range across all years. This elaborates a clearer trend in the global average temperature over a wide spread range.



4-Observations

According to line charts, the following observations may be deduced:

1- Riyadh weather is much warmer than the global average considering that the temperature.
We notice in the graph that temperature increases over time.

2- We can see that the average temperature is gradually increasing throughout the entire time frame.

3- First, we can see that from 1860-1880 slowly rise in average temperature from 24-25°C degrees.
Second, we can see from 1880-1920 stability in average temperature 25°C degrees.
Third, we can see from 1920-1993 in average temperature from 25-26°C degrees.
Fourth, we notice from 1993-2013 height in average temperature from 25-27°C degrees.

4- The yearly average temperature seems to be increasing normally on a global through the past decades.
The same may be noticed when looking at the chart where it is evident that the global average Temperature had fluctuated around the 8°C mark up until approximately 1890.
From then on, we notice an uptrend in the temperature rise.