EXPLORING WETHER TRENDS

Extracting Data

The SQL query is first used to extract cities in Saudi Arabia from city_list and is as follows:

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

The result shows that two cities data exist in the data base; Mecca & Riyadh. Then, another SQL query is used to extract Riyadh data since it is the nearest city to where I live:

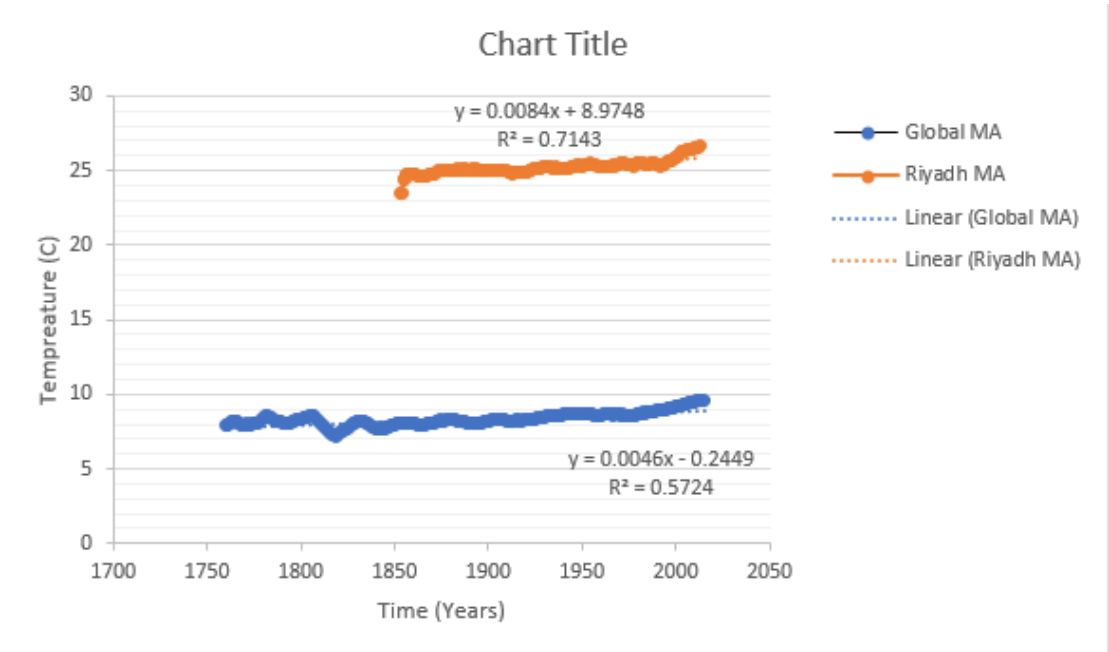
```
SELECT * FROM city_data
WHERE city = 'Riyadh';
```

For extracting the global data, the following SQL query is used:

```
SELECT * FROM global_data;
```

Data Analysis

The tool used to analyze the extracted data is Excel whith AVERAGE and CORREL functions. The following chart resembles the trend lines of 10-year moving averages:



The Moving Average for both global and local data is calculated on a 10-year-base scale. Using a linear regression, the following points are observed:

- Both local & global temperature exhibits an increasing behavior
- A first order regression curve for Riyadh MA temperature provides an acceptable coefficient of determination (71.4%). Whereas for global MA temperature the non-linearity is higher.
- The rate of change of Riyadh MA temperature is approximately double the one that is for global MA temperature.
- The correlation coefficient is calculated to be approximately 0.821303 which indicates a strong proportional linear relation between the two variables; if one increases the other one also increases.