Explore Weather Trends – Project Submission

1. Data Extraction

To extract data from the Udacity database, I had to use two SQL queries: one for global data and one for the local one. I chose Paris as a local city because I am currently living in this city.
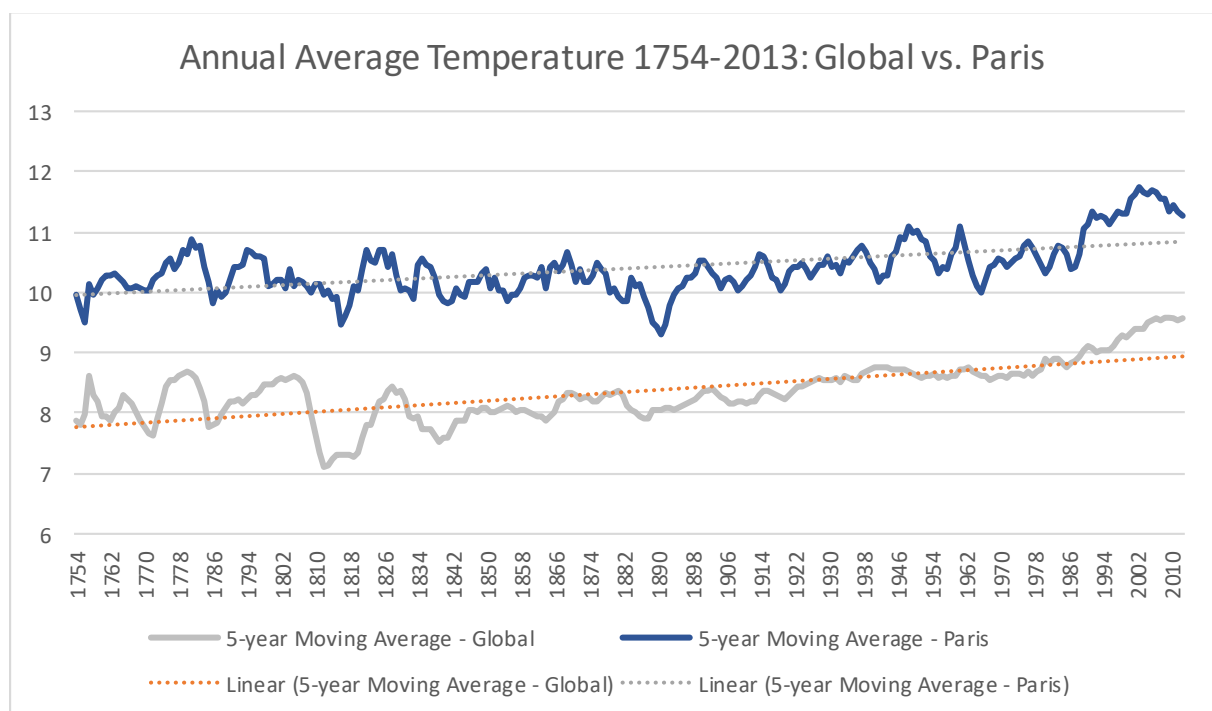
For Global data, the query is:

```
SELECT *
FROM global_data
```

For Local (Paris) data, the query is:
```
SELECT *
FROM city_data
WHERE city = 'Paris' AND country = 'France'
```

2. The Line Chart
After manipulations with data, the line chart looks like this:

In order to calculate the moving average, first I chose a 5-year interval as the most consistent (in my opinion) for this timeframe. In Excel, I used the formula AVERAGE() taking 5 previous cells or temperature data and extended it to the bottom of the data set.
The data for both trends start in 1750, so the first 5-year moving average is available starting 1754. The last year of analysis is 2013 (even though Global data is available until 2015) because the data for Paris are only available until 2013.

3. Key observations:
   a. During the whole timeframe (1754-2013), the average temperature for Paris was higher than the Global average.
   b. The correlation coefficient between the two data sets is set to be **55%**, which means that there is not much similarity in trends

c. The compound annual growth rate CAGR for Global average temperature is **+0.08%**, whereas the CAGR for Paris is **+0.05%**, meaning that in general, the Global temperature rises at a higher rate per year than the temperature in Paris

d. The standard deviation for the temperature trend in Paris is **0.70**, whereas the standard deviation for the temperature trend globally is **0.58**. This means that in general, temperature changes in Paris are more volatile than the global average, which totally makes sense as the Global average takes into itself observations from multiple datasets, reducing volatilities of single data sets (which are cities).