

# **Explore Weather Trends**

**Data Analyst Nanodegree project ==1==**

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# 1.Extract Data from Dataset

First I'm Looking for closest city to My Place Where I live on My Country , I found 2 City ('Cairo' , 'Alexandria') ,

I choose Alexandria Because it's my City

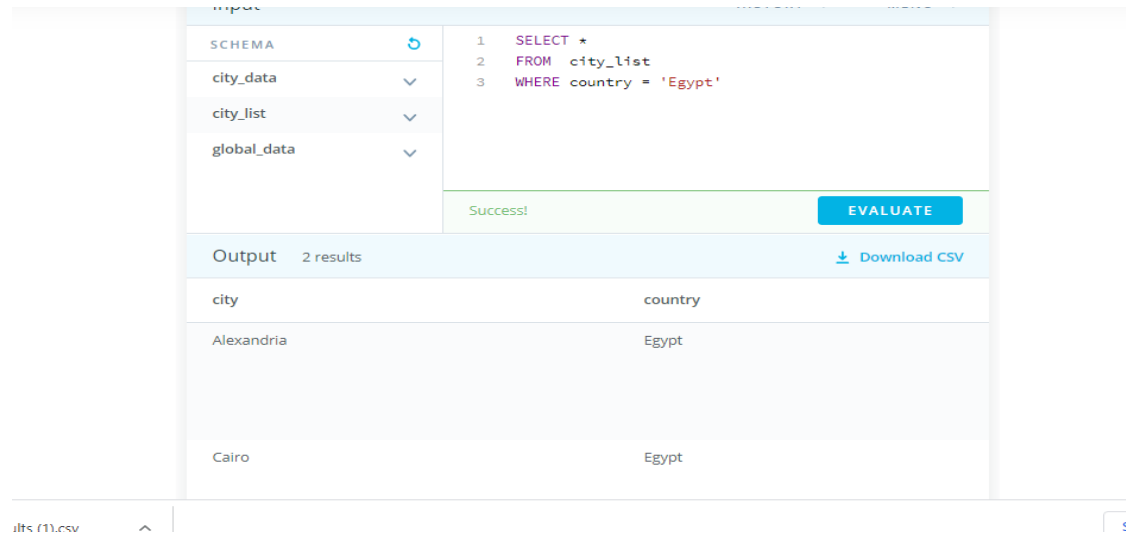


Figure:1 sql Query (local city)

## 1.(A) Extract Alexandria data :

Now it is time to extract all the temperature data for the city of Alexandria using SQL Query as follows:

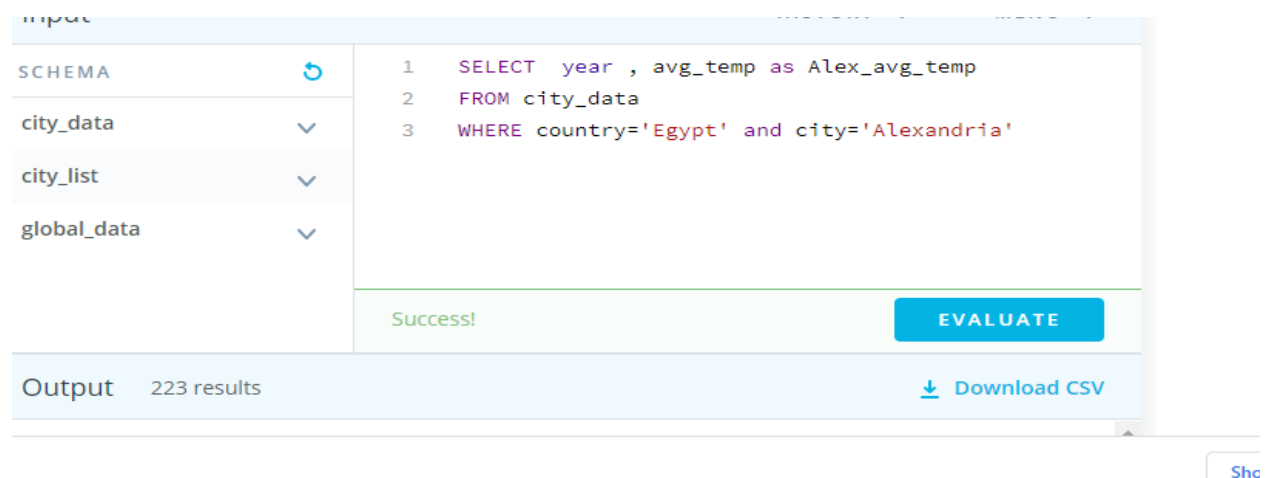


Figure:2 sql Query (Alexandria data)

This will return 223 results in total from the year 1791-2013

## 1.(B) Extract Global Data :

Now I will extract the global data which return 223

Results from the year 1791-2013

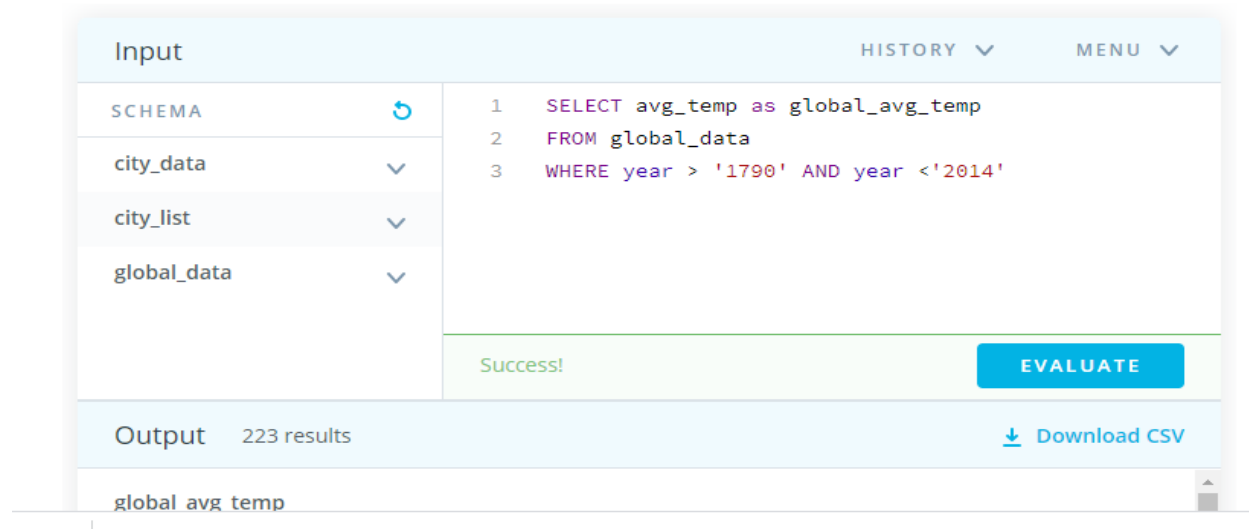


Figure:3 sql Query (global data)

## 2. Data manipulation

Due to fluctuations in yearly averages, it is best to evaluate the data considering the moving average to provide smoother results during data visualization.

The moving average has been prepared on the same excel spreadsheet on a 10-year basis. This is done by calculating the average temperature for the first 10 years (1790- 1799). The same is then repeated from years 1791-1800 and so forth.

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. Visualization

#### BY: EXCEL

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 temperatures on the y-axis and the year range on the x-axis. After inputting the corresponding values on excel, the following line chart is generated.

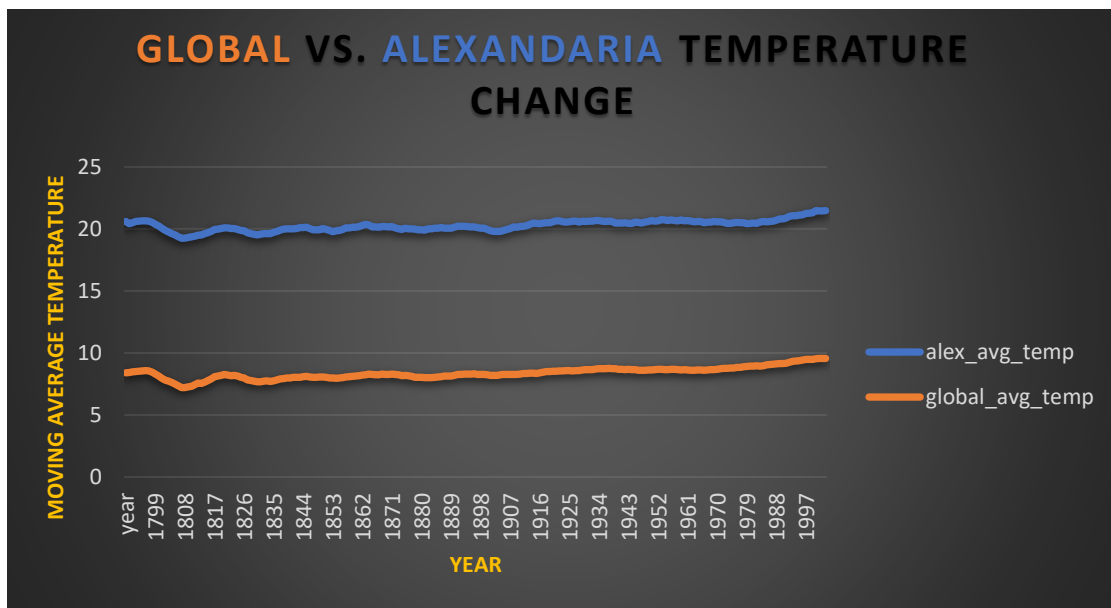


Figure:4 chart line for (global vs Alexandria) temperature change

## 4. Observatiopns :

1. Alexandria 's weather is much hotter than the global average considering that the temperature has always been greater in the past hundred years.
2. In both cases, we can see that the average temperature is gradually increasing throughout the entire time-frame.
3. A significant rise in the yearly average temperature can be observed for Alexandria in the past couple of decades starting from the year 1994 upwards.