

Exploring Weather trends project

First of all, I analyzed local and global temperature data and compared the temperature trends where I live to overall global temperature trends.

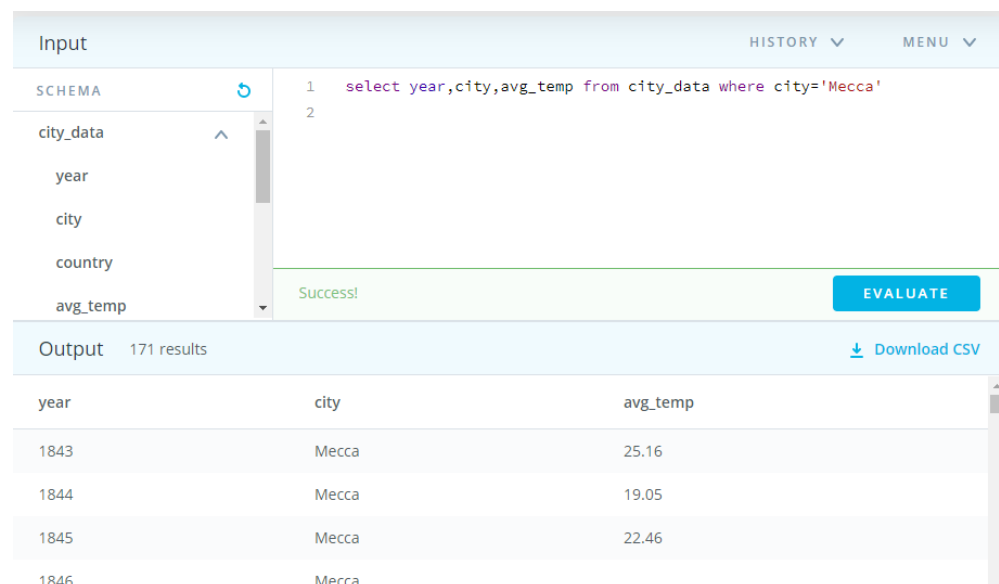
Goals :

- Extract the data from the database on udacity portal.
- Create a line chart that compares your city's temperatures with the global temperatures.
- Make observations.

The 1st step :

I have been used SQL query on Udacity portal to extract specific data then Working on these data by Excel.

I used SQL queries to extract the city that I live in data as shown in figure1.

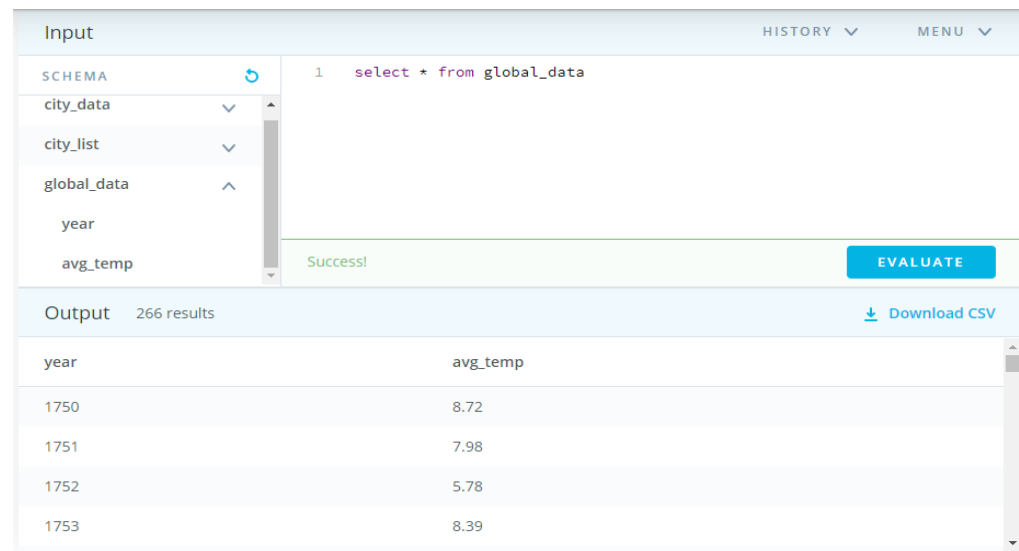


The screenshot shows the Udacity SQL interface. On the left, under 'SCHEMA', the 'city_data' table is expanded, showing columns: year, city, country, and avg_temp. The main area contains a SQL query: `select year,city,avg_temp from city_data where city='Mecca'`. Below the query, a green 'Success!' message is displayed. An 'EVALUATE' button is on the right. The 'Output' section shows '171 results' and a 'Download CSV' link. A table of results is displayed below, with columns 'year', 'city', and 'avg_temp'. The first four rows are visible, showing data for Mecca from 1843 to 1846.

year	city	avg_temp
1843	Mecca	25.16
1844	Mecca	19.05
1845	Mecca	22.46
1846	Mecca	

Figure1

In figure2 , I extract the global temperature without specifying a date. But then I removed the years that doesn't match with the local city.



The screenshot shows a web-based data query interface. On the left, under the 'Input' tab, there is a 'SCHEMA' section with a list of tables: 'city_data', 'city_list', 'global_data', 'year', and 'avg_temp'. The 'global_data' table is selected. In the center, a SQL query is entered: '1 select * from global_data'. Below the query, a green bar indicates 'Success!'. To the right of the query is an 'EVALUATE' button. Below the query area, the 'Output' section shows '266 results' and a 'Download CSV' link. A table of results is displayed with two columns: 'year' and 'avg_temp'. The table contains four rows of data.

year	avg_temp
1750	8.72
1751	7.98
1752	5.78
1753	8.39

Figure2

The 2nd step :

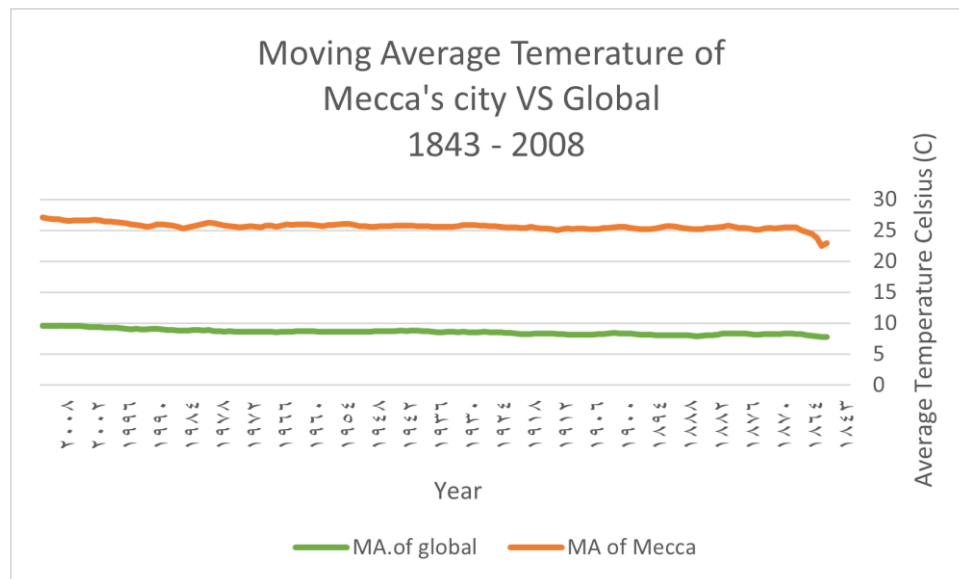
After downloading the data from udacity portal , Working on it by using Excel and Creating Moving Average.

Moving Average used to analyze Data and allow us to get information. By calculation it , I can extract predications for future moves or exploring a specific Data over a period of a time even if in the past.

I have been research about moving average to get truly understanding and get more info.

I calculate the moving avg. by using Excel functions. 1st, I calculate the global moving avg. temperature for each 5 years the same period for the local to get more reliability data.

And from these data we can get a Line chart of Moving Average temperature trends as shown bellow.



The last Step :

Which is making an observation/comparison between the average .Temperatures of Local & global

- from the above line chart shows that the mecca's weather hotter than the global average temperature and the difference have been consistent over time.

- The weather also changing in similar way but differ in the range of temperatures. where the range of average temperature of mecca's between 19°C to 27°C and the world .avg. temperatures between 7°C - 9°C.

- overall trend looks like that the world Average temperature .getting hotter consistently over the last few hundred years.

- I note that the average moving temperatures have been increased in the last years to get higher temperature than what they were.