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Cairo, Egypt

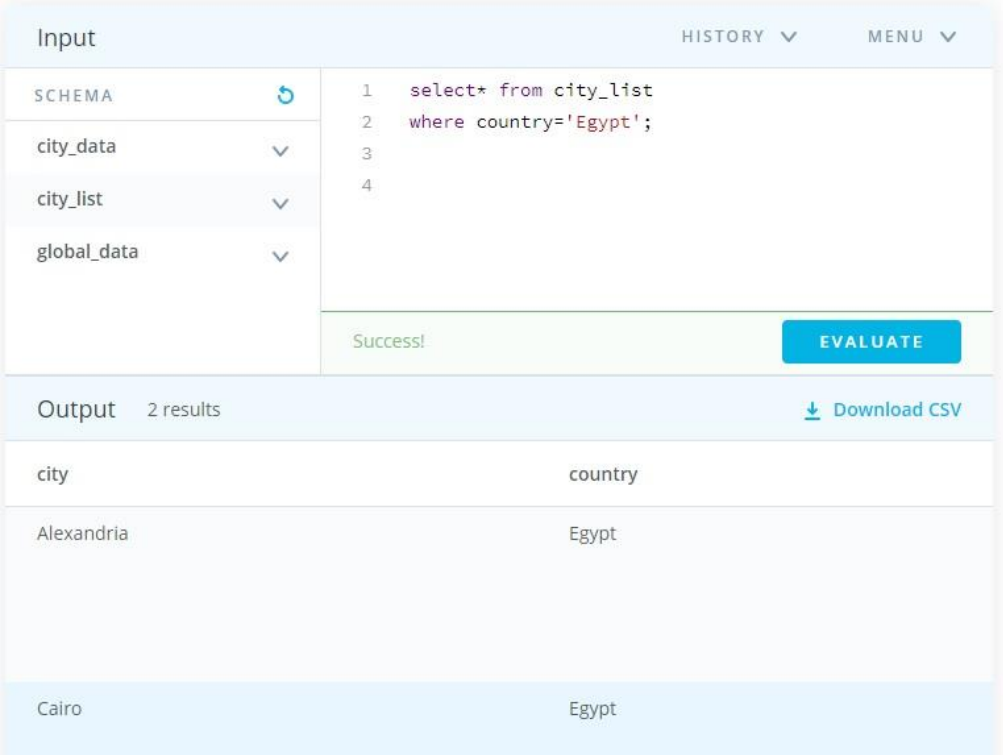
Explore Weather Trends Project

Introduction and steps

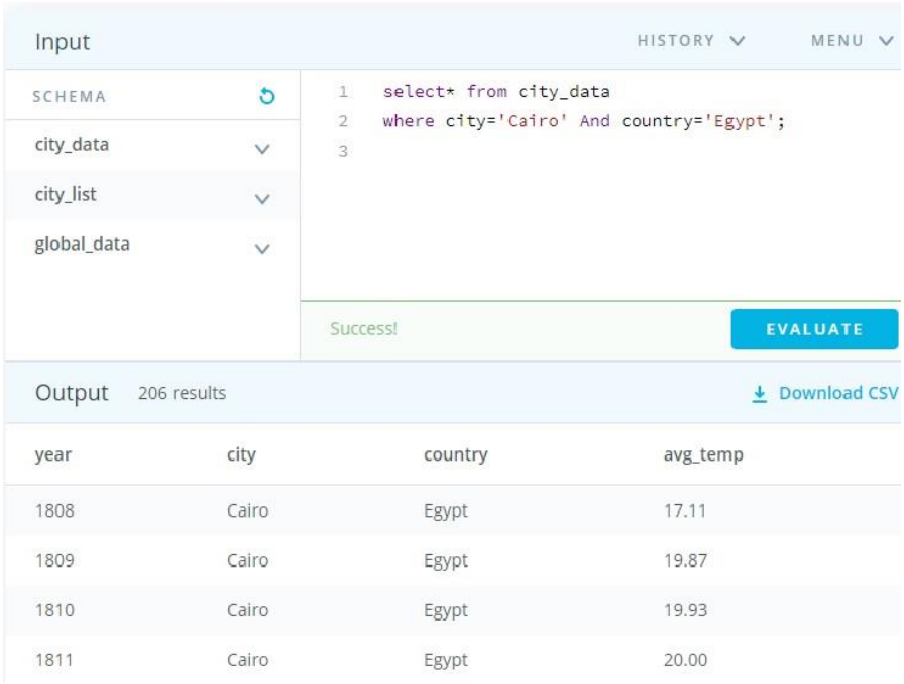
In this project, I analyze local and global temperature data and compare the temperature trends where i live to overall global temperature trends.

I live in Cairo so I complete this project by using SQL and Python(Jupyter notebook) and I will talk about steps now .

1. **First I use SQL to export Data for Database in udacity website so I use sql to know nearest city to me and I write query and I screenshot it.**

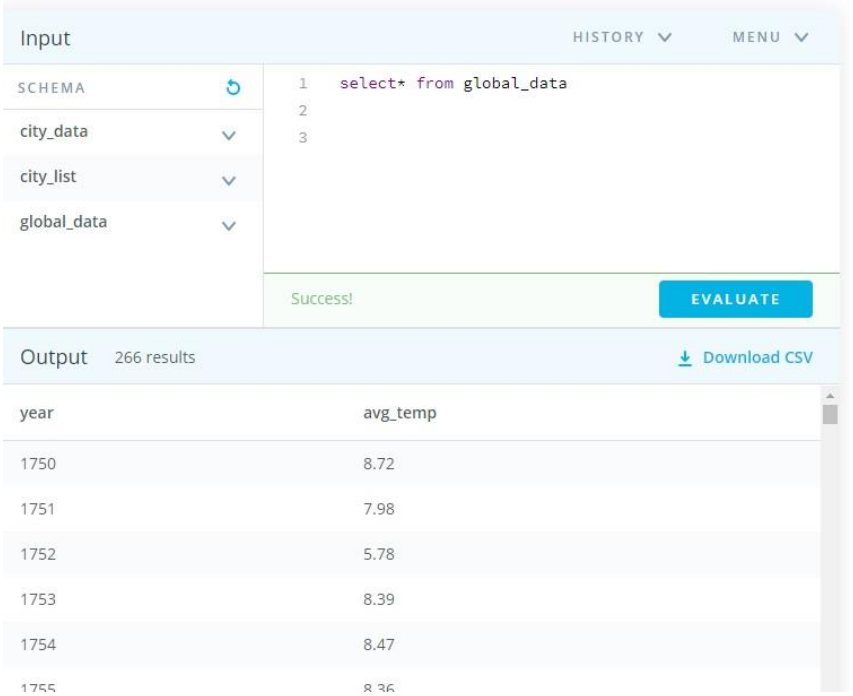


2. **Then I export city data and my condition was this city is cairo at egypt to download this csv**



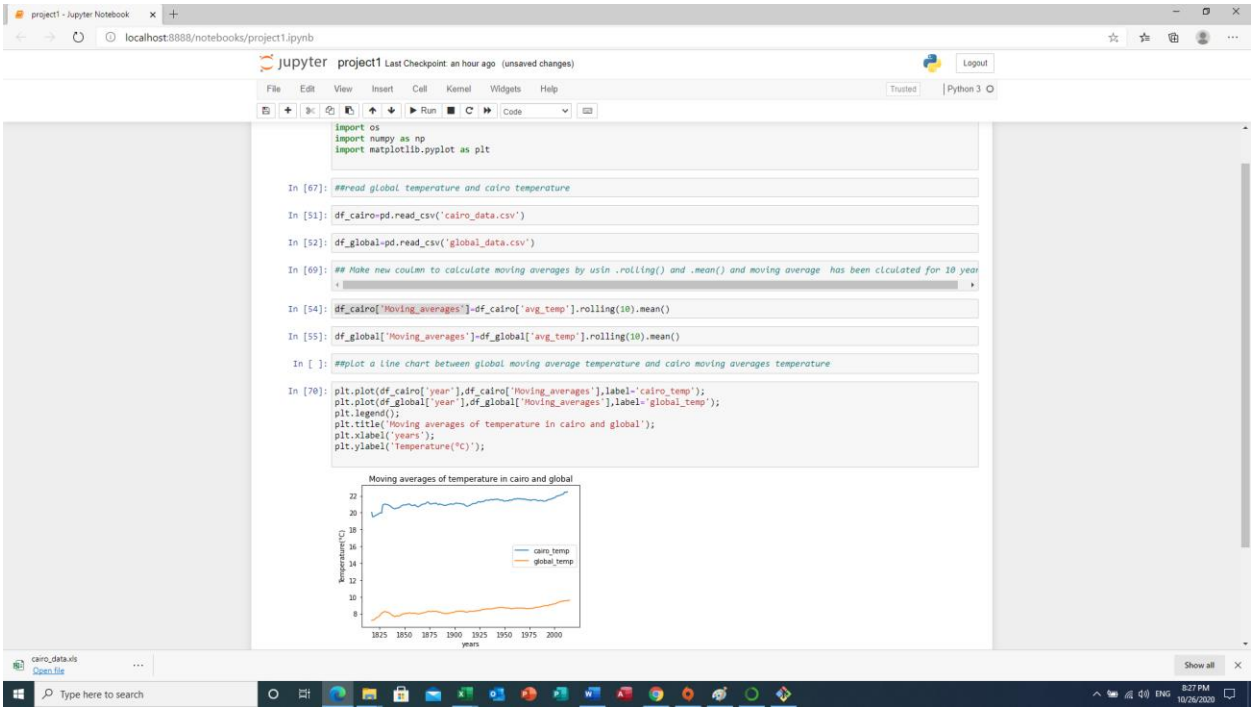
year	city	country	avg_temp
1808	Cairo	Egypt	17.11
1809	Cairo	Egypt	19.87
1810	Cairo	Egypt	19.93
1811	Cairo	Egypt	20.00

3. **Finally I export global data and download it**



year	avg_temp
1750	8.72
1751	7.98
1752	5.78
1753	8.39
1754	8.47
1755	8.36

4. **After downloading I use jupyter notebook to read this data and Analysis data and that is my code.**



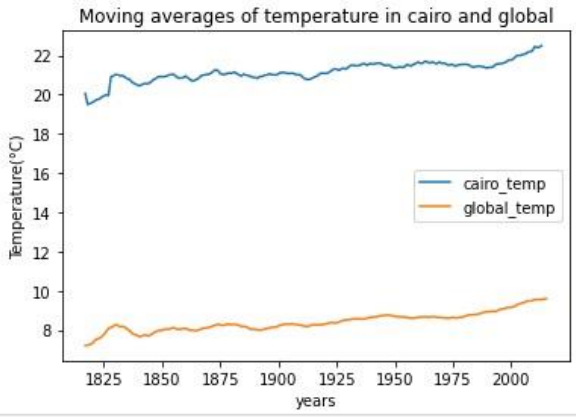
5. **Moving Average , in this step in know that we make it to smooth out data to make it easier to observe long term trends and not get lost in daily fluctuations, and I use .rolling().mean() to calculate moving averages and I calculate it for 10 years**

```
In [54]: df_cairo['Moving_averages']=df_cairo['avg_temp'].rolling(10).mean()
```

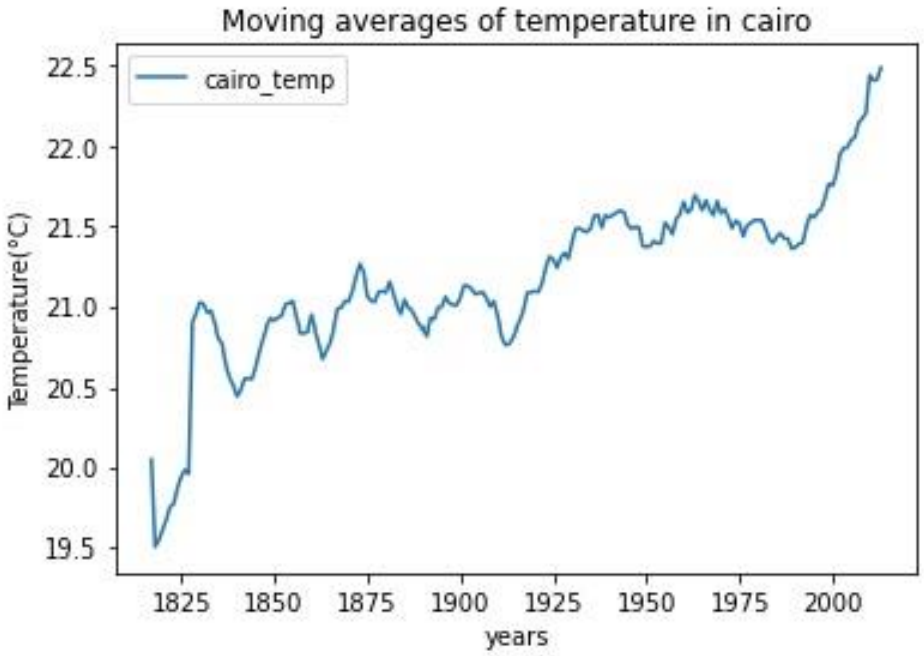
```
In [55]: df_global['Moving_averages']=df_global['avg_temp'].rolling(10).mean()
```

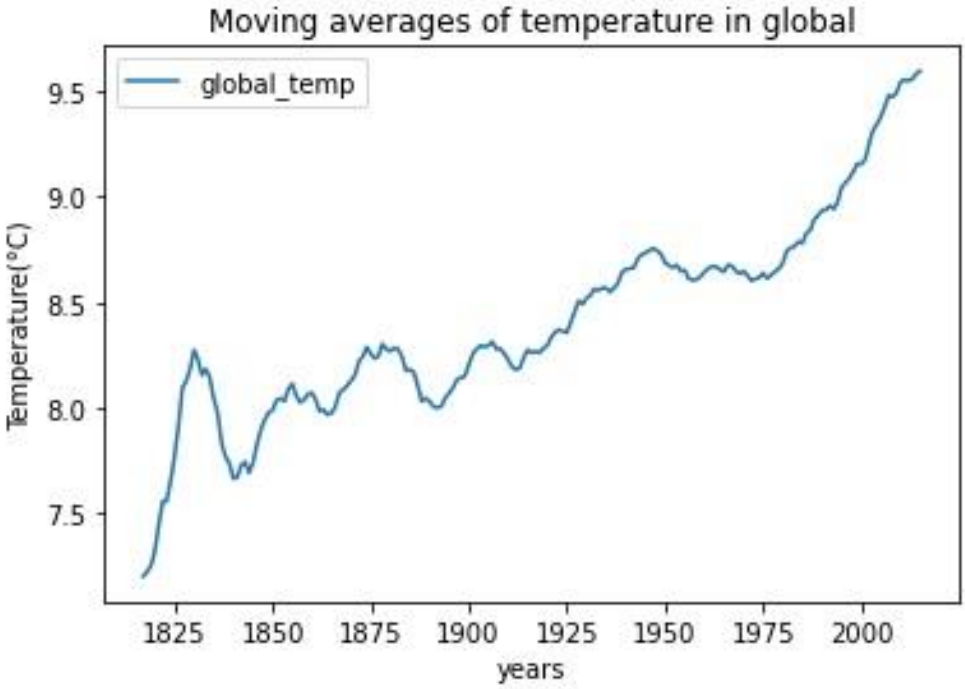
6. **Then I plot line chart that compares cairo temperatures with the global temperatures.**

```
In [70]: plt.plot(df_cairo['year'],df_cairo['Moving_averages'],label='cairo_temp');
         plt.plot(df_global['year'],df_global['Moving_averages'],label='global_temp');
         plt.legend();
         plt.title('Moving averages of temperature in cairo and global');
         plt.xlabel('years');
         plt.ylabel('Temperature(°C)');
```



7. **And this is line chart for cairo only and global only.**





8. **Making observations:**
    - **By looking at the two charts in step number 7 we easily find that cairo hotter on average than the global average.**
    - **By looking in charts we find that the temperature increases by the time that is mean the world getting hotter by time.**
    - **By comparing the temperature in 1825 at cairo and global then in 2000 at cairo and global I find that the difference between them been consistent or difference be lower by 0.1 degree.**
    - **From 1975 Temperature in global chart raising only.**
    - **Both of average temperature in cairo and average on global are increase by time**