



Explore Weather Trends Project

-SQL queries:

I used the following SQL queries as instructed in the project instructions to extract the data

Input		HISTORY ▾	MENU ▾
SCHEMA		1 <code>SELECT * FROM city_data WHERE city='Cairo' AND country='Egypt';</code>	
city_data	▾		
city_list	▾		
global_data	▾		

Input		HISTORY ▾	MENU ▾
SCHEMA		1 <code>SELECT * FROM global_data ;</code>	
city_data	▾		
city_list	▾		
global_data	▾		

Then I used the following to read the .csv files to my project

```
In [27]: # importing the necessary libraries
```

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```
In [28]: # reading the databases and storing the data
```

```
city_temperature = pd.read_csv('results_city.csv');
global_temperature = pd.read_csv('results_global.csv');
# city_temperature
```

Moving averages:

I then calculated the moving averages for both databases using the following so that I can use them in the line chart.

```
In [29]: # calculating the moving average for both the city_temperature and the global_temperature
```

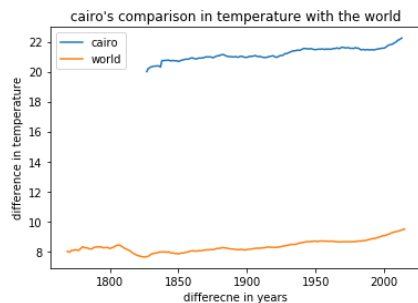
```
city_moving_average = city_temperature['avg_temp'].rolling(20).mean();
global_moving_average = global_temperature['avg_temp'].rolling(20).mean();
# city_moving_average, global_moving_average
```

Line chart:

Then I worked on the line chart and I added the titles to both axis and legend and title to the chart itself

```
In [32]: # implementing the line chart
```

```
plt.plot(city_temperature['year'],city_moving_average,label='cairo')
plt.plot(global_temperature['year'],global_moving_average,label='world')
plt.xlabel("difference in years")
plt.ylabel("difference in temperature");
plt.title("cairo's comparison in temperature with the world");
plt.legend();
```



Observations:

- By looking at the chart we notice the Cairo is a lot hotter than the world's temperature.
- We also notice the after the 2000's the temperature raises extremely and fast. The slope is a lot higher after the 2000's
- We then notice that before 1848 the temperature was relatively colder at Cairo
- But we also notice that after 1848 the temperature raises and stays relatively stable between 1850 and 1900.
- The temperature raises steadily between the 1950 and the 2000 until after the 2000 where the temperature gets extremely hotter really fast