Contents

Udacity Data Analyst Nanodegree

Project 1 – Exploring Weather Trends

Write Up

Outline:

First of all, I downloaded all the data using SQL queries, from the tables. I then looked into the *city_list* table to select nearest big city as per the location where I currently live. Bases on this criteria, I selected *Peshawar* as nearest big city.

Then I kept the city temperature data for my city and deleted all other cities data. And then I combined temperature data for my city with the global temperature data in to a single excel sheet

I then calculated the moving averages both for my city data as well as global temperature data. The time period that I chose for the moving averages is 5 years.

Tools / Languages Used:

Excel for:

- Combining data and deleting irrelevant data
- Calculate moving averages

Python:

- To generate line chart

Jupyter Notebook:

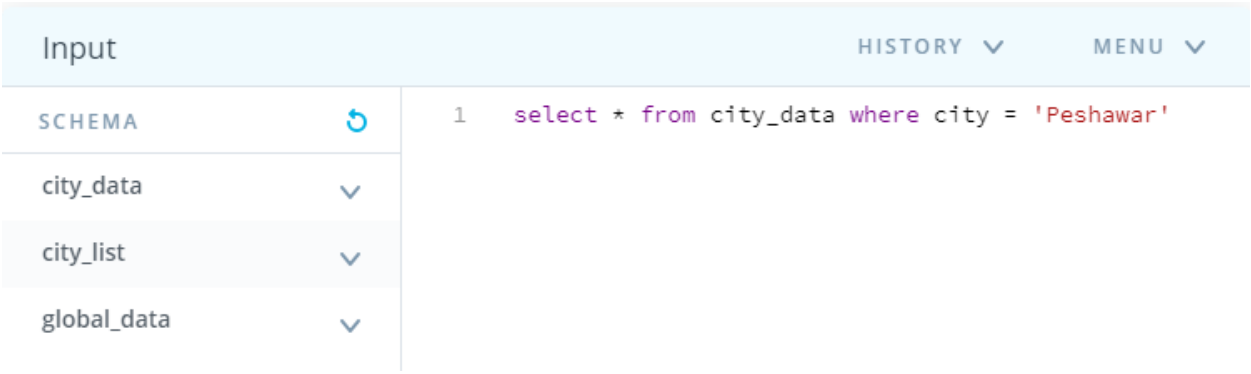
- As an IDE for python

Moving averages were calculated the way it was in the tutorial before starting project. I followed the same steps to calculate moving average for this data as well.

SQL Queries Used:

- *Select * from global_data*
- *Select * from city_list*
- *Select * from city_data where city = 'Peshawar'*

An sample screenshot is attached



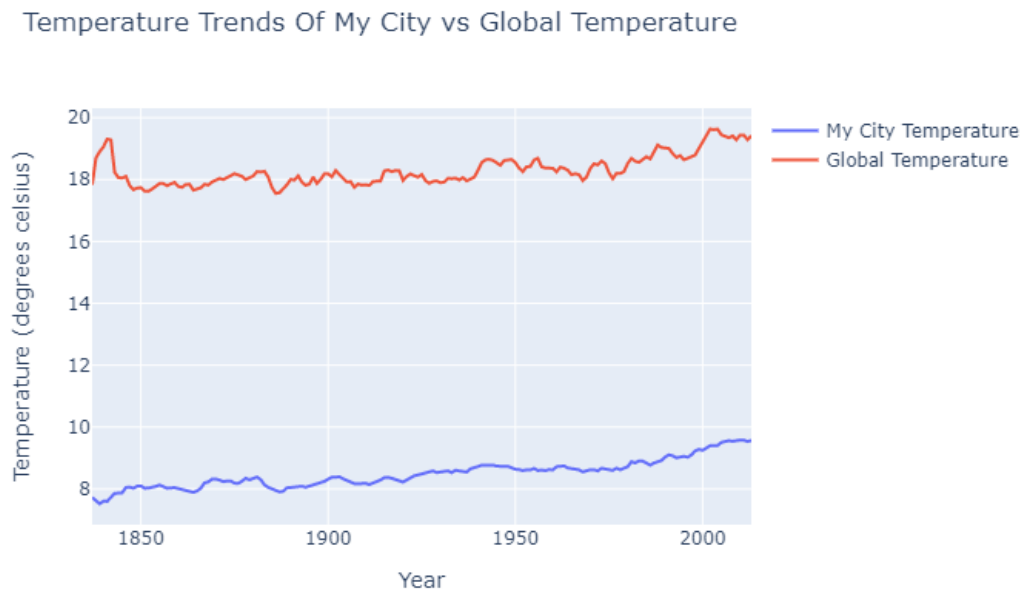
Moving Averages Calculated:

Below image shows that moving averages were calculated using excel

	A	B	C	D	E	F	G
1	city	country	avg_temp_local	avg_temp_global	5-year MA Peshawar	5-year MA Global	year
2	Peshawar	Pakistan	17.88	8.01			1833
3	Peshawar	Pakistan	17.87	8.15			1834
4	Peshawar	Pakistan	17.03	7.39			1835
5	Peshawar	Pakistan	17.05	7.7			1836
6	Peshawar	Pakistan	19.34	7.38	17.834	7.726	1837
7	Peshawar	Pakistan	22.19	7.51	18.696	7.626	1838
8	Peshawar	Pakistan		7.63	18.9025	7.522	1839
9	Peshawar	Pakistan	17.64	7.8	19.055	7.604	1840
10	Peshawar	Pakistan	18.06	7.69	19.3075	7.602	1841
11	Peshawar	Pakistan	19.23	8.02	19.28	7.73	1842
12	Peshawar	Pakistan	18.01	8.17	18.235	7.862	1843
13	Peshawar	Pakistan	17.36	7.65	18.06	7.866	1844
14	Peshawar	Pakistan	17.6	7.85	18.052	7.876	1845
15	Peshawar	Pakistan	18.31	8.55	18.102	8.048	1846
16	Peshawar	Pakistan	17.76	8.09	17.808	8.062	1847
17	Peshawar	Pakistan	17.33	7.98	17.672	8.024	1848
18	Peshawar	Pakistan	17.62	7.98	17.724	8.09	1849
19	Peshawar	Pakistan	17.67	7.9	17.738	8.1	1850
20	Peshawar	Pakistan	17.76	8.18	17.628	8.026	1851
21	Peshawar	Pakistan	17.72	8.1	17.62	8.028	1852
22	Peshawar	Pakistan	17.7	8.04	17.694	8.04	1853
23	Peshawar	Pakistan	17.99	8.21	17.768	8.086	1854

Line Chart:

Following is the line chart of temperature trends for my city *Peshawar* and global temperature



Observations:

#1

Is my city hotter or cooler on average compared to the global average? Has the difference been consistent over time?

Answer

As can be seen from the graph (line chart) above that the temperature of my city of choice, on average, is far greater than average global temperature.

Thus, we can conclude that my city's average temperature has always been hotter than global temperature

#2

Changes in local temperature as compared to global temperature?

Answer

Again, from the line chart, we can see that there is more abruptness in local temperature than global temperature (which is quite smooth) indicating that weather of my city is getting warmer quicker than global temperature. It can also be observed from the shape of lines in the chart.

#3

Changes in local temperature as compared to global temperature?

Answer

Again, from the line chart, we can see that there is more abruptness in local temperature than global temperature indicating weather of my city is getting warmer quicker than global temperature. It can also be observed from the shape of lines in the chart.

#4

Any observation for a specific time period?

Answer

From the line chart above, if we look closely, we can see that from the year 1950 and onwards, temperature of my city if quickly rising as compared to global temperature.