**Nano degree: Data Analyst**

**Project 1: Explore Weather Trends**

**STEPS carried out to complete the project:**

**STEP#1:**

I extracted the average temperature data of my city using the following query on the workspace given on udacity’s website and then i downloaded the CSV file:

SELECT \*  
FROM city\_data  
WHERE country = 'Pakistan' AND city = 'Lahore'

**STEP#2:**

I extracted the average global temperature data using the following query on the workspace given on udacity’s website and then i downloaded the CSV file:

SELECT \*

FROM global\_data

**STEP#3:**

I then opened up the CSV file, using Microsoft EXCEL, containing data of global average temperature and calculated the 20 year moving average by selecting the average temperature columns of first twenty rows and taking average of the values.

A screenshot of a cell phone

Description automatically generated

**STEP#4:**

I then opened up the CSV file using Microsoft EXCEL containing data of my city’s average temperature and calculated the 20 year moving average by selecting the average temperature columns of first twenty rows and taking average of the values.

A screenshot of a cell phone

Description automatically generated

**STEP#5:**

I then merged the moving averages of both the tables into a single table by creating a new excel file to create a line chart.

A close up of a piece of paper

Description automatically generated

**Line Graph:**

**Observations:**

*Observation#1:* Is your city hotter or cooler on average compared to the global average? Has the difference been consistent over time?

*Answer:* According to the visualization, the city of Lahore is way hotter as compared to the global average. But if we notice both of them, it can be deduced that the difference has been consistent over time.

*Observation#2:* How do the changes in your city’s temperatures over time compare to the changes in the global average?

*Answer:* The changes in the temperature of the city of Lahore and the global average temperature has been increasing from 1980’s onwards as shown by the line graph. The changes has been consistent. But the latest data shows the temperature at its maximum.

*Observation#3:* What does the overall trend look like? Is the world getting hotter or cooler? Has the trend been consistent over the last few hundred years?

*Answer:* The trend has been more or less consistent uptil the beginning of 1980s. since then there has been a rise in both the global and the city’s average. The trend has been consistent from the mid of 18th century to the mid of 19th century. Being the maximum in 2011.

*Observation#4:* What has been the trend from the beginning of 18th century to the mid of 18th century?

*Answer:* During the prescribed time period, the line graph shows some deviations along both the extremes, globally as well as locally.