# Exploring Weather Trends

Date: April 25, 2020

Outline:

1. To explore the weather trends, we have used 2 software:
   - SQL
   - MS EXCEL
2. To extract the data from the data base we used SQL and extracted the data for the city Delhi as well as for the global trends.
   - SQL Query for the data having temperature for Delhi is:
   - select *
     from city_data
     where city = 'Delhi'
   - SQL Query for the data having global temperature:
   - select *
     from global_data
3. After we extracted the data, we saved the data in an Excel sheet.
4. The extracted data had some blank values which had filled by finding the average temperature of the past 5 years in that city.
5. In the excel sheet we calculated the moving average of the average temperature trends.
6. The moving average was calculated by taking an average of the temperature over 5 years.
7. This gave us a clearer line chart to understand the trends.
8. The main points taken into consideration while plotting the line chart is the year of the temperature and the calculated moving average of the temperature recorded every year.
9. We have plotter 3-line graphs:
   - Line chart comparing the city temperature trends with the global trends.
   - Line chart showing the temperature trend in Delhi.
   - Line chart showing the Overall global temperature trend.

Moving_Avg_temp_delhi

Moving_Avg_temp_global

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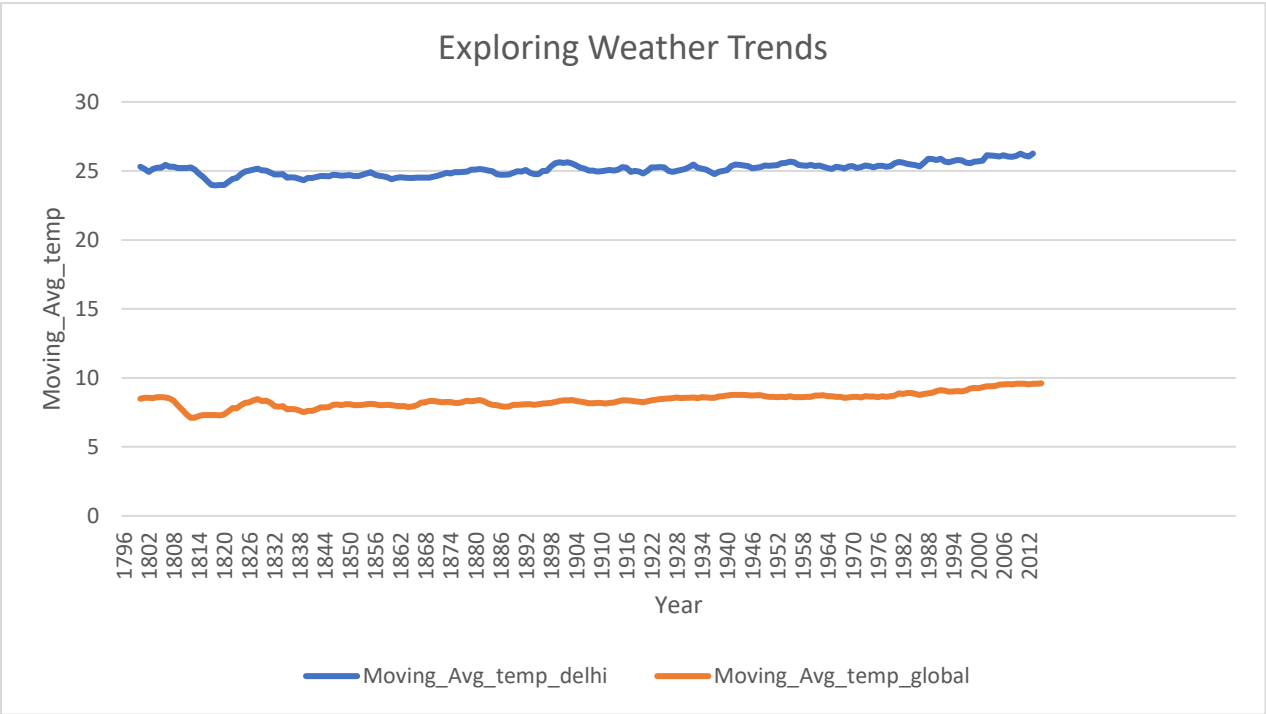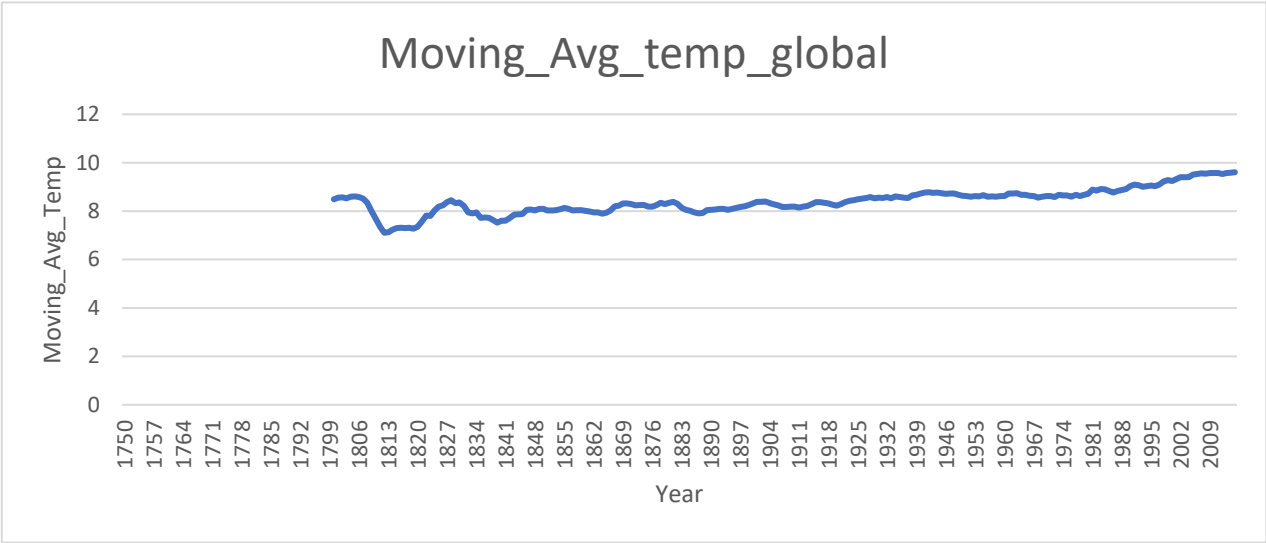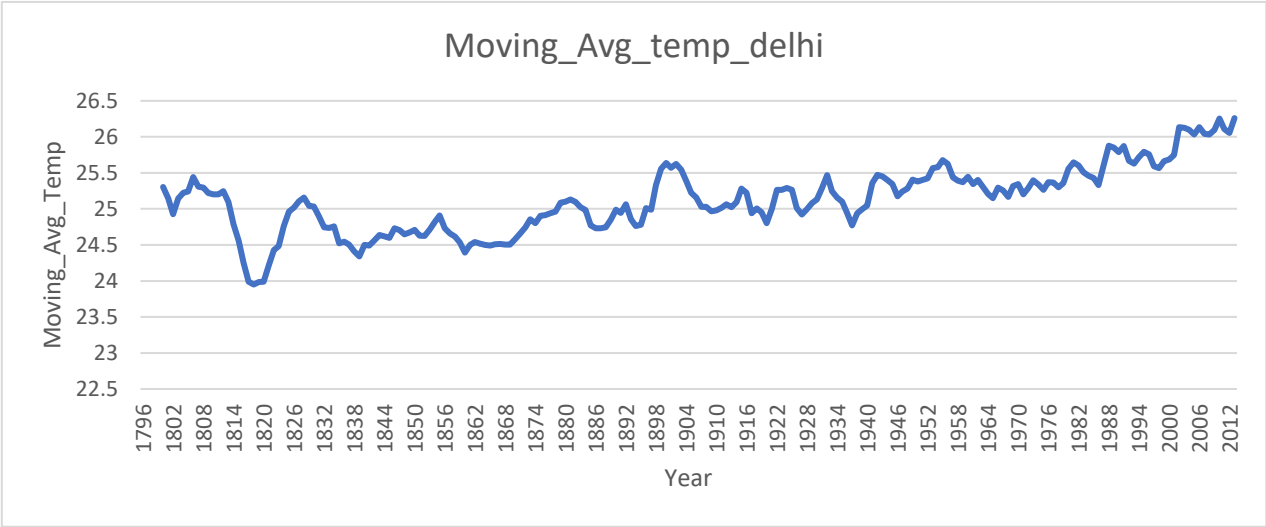
Observations:

1. We can observe that the range of temperature varying in Delhi is from 24-26.5, whereas the global trend ranges from 7-8.5. Hence, we can observe that my city i.e. Delhi is hotter than the overall global temperature trend. This observation is consistent throughout the dataset.
2. When we see the 3rd line chart, we can observe that from the year 1814-1820 a temperature was observed in the global trend as well as there was a temperature drop in the City of Delhi.
3. When we compare the 2 charts, we can see that the city temperature trend had a lot of variation in the moving average of the temperature whereas the global trend for the moving average was almost constant throughout.
4. We can observe that the range of temperature varying in Delhi is from 24-26.5, whereas the global trend ranges from 7-8.5.
5. When we look at the overall trend for the global temperature as well as the city temperature, we can say the there is rise in temperature over the years, we can say this can because of the overall pollution. The world is getting hotter over the years and also a rise in temperature has been more predominant after the year 1964.

Thank you.

Dhairyav Shah.