Project: Exploring Weather Trends

➢ Data Preparation:

To analyse this data first of all we need to Extract this data from the given database using workspace provided at Udacity. Following command is used to extract the data from the given database.

```
SELECT * FROM global_data;
```

This command will extract all the data from Table –“ Global_ Data”.

```
SELECT * FROM city_list;
```

Since “city_list” table having name of all the cities whose data is available in another table “city_data” so we extract this data from the database using above command.

```
SELECT year, city, avg_temp FROM city_data WHERE city = ‘Delhi’;
```

After executing this command we have avg_temp with respect to the year of the city Delhi (India).

➢ Data Pre-processing:

- First of all I transferred all the data in a single file named as “final_data_set” where I had 3 columns Year, global_data and city_data.
- After examine the data I found that many rows having missing values in the city_data so to remove these data I preferred to remove the blank rows in the final_data_set instead of filling missing values with average of it as it may affect our result.
- After deleting the rows with missing values we have a perfect data of average temperature of the city-Delhi and the world.
- For smoothening of the data I used 7 years moving average of the avg_temp stored in the “city_data” and “global_data” columns and save this moving average in the new columns named as 7mavg_global and 7mavg_city respectively.
- After performing following steps the final line chart as the output is placed below:

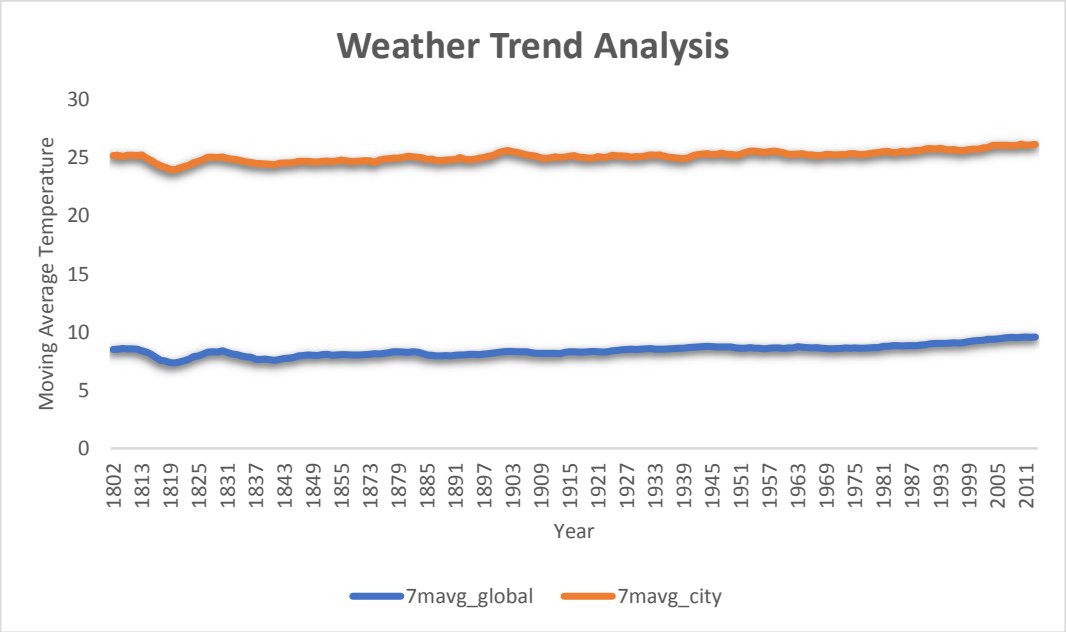

Figure 1: Observing Weather Trends in Delhi (India) with respect to Global average temperature

➢ Observations:

1. The Average Temperature of the world and Delhi was low during the period of 1813-1825, after that it's increasing slowly.

2. The average temperature of Delhi shows the nearly same pattern with global average temperature.

3. During the period of 1897 to 1909 average temperature of Delhi was much higher than the global temperature, in fact average global temperature is showing a downfall after 1885 but Delhi's temperature was high.

4. After showing a downfall in the global average temperature during 1885 the line chart shows a constant increase in the global temperature whereas Delhi's temperature was received a downfall between 1903 to 1909 but after that it's also increasing constantly.

You can find my pre-processed file **"final_data_set"** at the following link:

https://github.com/abhishekpandeyIT/Udacity_Projects.git