**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 its also increasing constantly.

You can find my pre-processed file **“final\_data\_set”** at the following link: