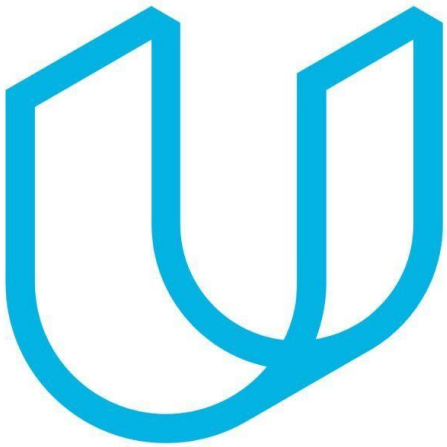
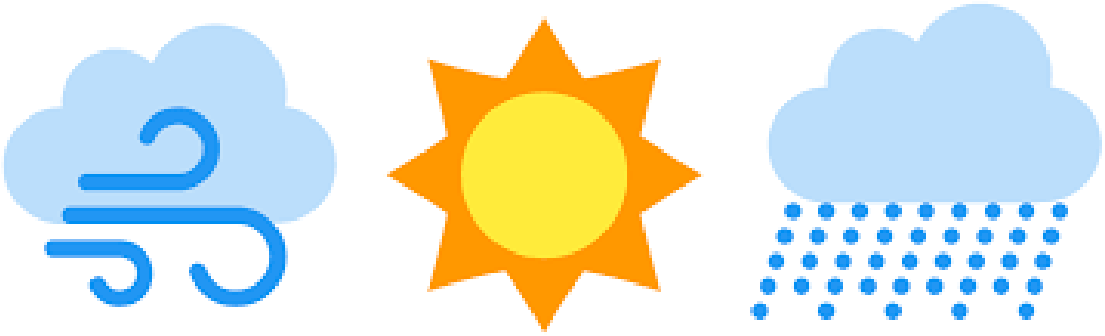
Data Analyst Nanodegree



UDACITY



Explore weatherTrends

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Project-1, Explore Weather Trends

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Ahmedabad, India

Method :

The data that was being used in this analysis are being retrieved from database using Structured Query Language and then analyzed using Google Spreadsheets. The data was analyzed using 10 YEAR Moving Average to make trends more clear.

Retreiving Data from Database :

Data was retrieved from the DATABASE using SQL - Structured Query LANGUAGE.

Visualizing data to assure that we are going to retrieve the actual data that we should perform analysis from various data available in multiple in the DATABASE.

1. To check which countries and cities are available in the database.

```
SELECT *
        FROM city_list WHERE
        Country='India' AND
        city='Ahmadabad';
```

2. To select data from the City database

```
SELECT avg_temp,year,city,country
        FROM city_data
            WHERE city='Ahmadabad';
```

3. I observed there is a column called avg_temp which is same in both city_data and global_data. I want to change the schema so I joined both the tables and changed the column names in both the databases.

```
ALTER TABLE city_data
            RENAME COLUMN avg_temp to CAT;
ALTER TABLE global_data
            RENAME COLUMN avg_temp to GAT;
```

4. I have joined the two tables using JOIN also called as INNER JOIN as avg_temp is same in both the tables.

```
SELECT city_data.CAT,
global_data.GAT,global_data.year FROM global_data
        JOIN city_data
            ON global_data.year = City_data.year
              WHERE city='Ahmadabad'
              Country='India';
```

Now, I have got an option to download a CSV file . I downloaded file as "results.csv".

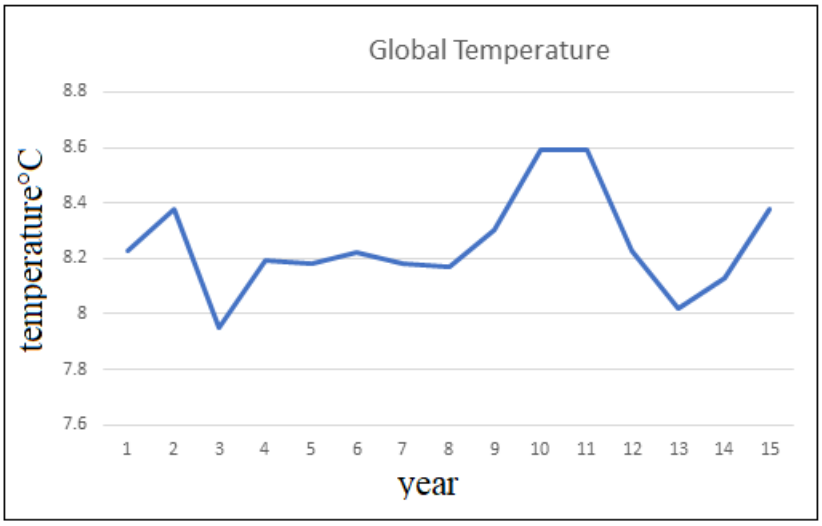
Approach To get the desired data:

- I Copied the global data and CSV file of city to get the desired data for analysis.
- I Used Google Spreadsheey for the analysis.

Moving Averages :

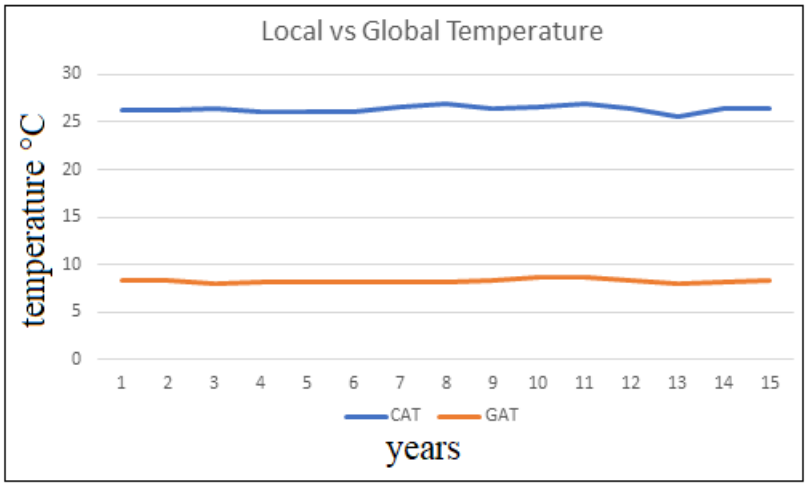
1. To smooth the data and to observe trends in the temperature.
2. I have done 15 year Moving Average to get the smooth line chart.
3. I used a command =AVERAGE(B111:B125) to see the Moving Average Value for 15years.

GLOBAL TEMPERATURE



I have plotted Line chart for global data separately to observe difference between Global Average Temperature and the city Ahmedabad.

Now I have combined both Global Average Temperature and Ahmedabad with 15 year. Here is a Line Chart of GAT and Ahmedabad Average Temperatures for 15 Year.



OBSERVATIONS :

1. Global Average Temperature for 15 yr varies between 8.23°C to 8.38°C.
2. Ahmedabad city Average Temperature for 15 yr varies between 26.24°C to 23.39°C.
3. The Chart of Ahmedabad Vs Global has very big difference in the temperatures.
4. If comparison is made between Global and Ahmedabad Average Temperatures Ahmedabad is hotter than global average temperature .
5. From the first Graph, I observed global temperature is increasing from 8.23 to 8.38. From the second graph I observed the temperature of both global and Ahmedabad average temperatures are ups and downs during the early years, later during 1905 to 1919 both the temperatures increased due to increase in temperature.

Conclusion:

The final conclusion of this project is Ahmedabad is hotter than global temperature and temperature is increasing day by day due to changes in the climate.

References:

https://www.youtube.com/watch?v=-LLpQcVSeo

http://www.statisticshowto.com/moving-average/