Data Analyst Nanodegree

UDACITY

Explore Weather Trends

By

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The Database Schema

There are three tables in the database:

- city_list - This contains a list of cities and countries in the database. Look through them in order to find the city nearest to you.

- city_data - This contains the average temperatures for each city by year (ºC).

- global_data - This contains the average global temperatures by year (ºC).

Analysis

City	SQL Commands for Extracting Data
To select the City in India	Select * From city_list Where country= 'India'
To select the City Data (Hyderabad)	select year, avg_temp as CAV from city_data where city='Hyderabad' and country='India'
For Global Data between year 1796 and 2015	select year, avg_temp as CAV from global_data where year between '1796' and '2015'

Approach To get the desired data:

• I Copied the global data and CSV file of city to get the desired data for analysis.
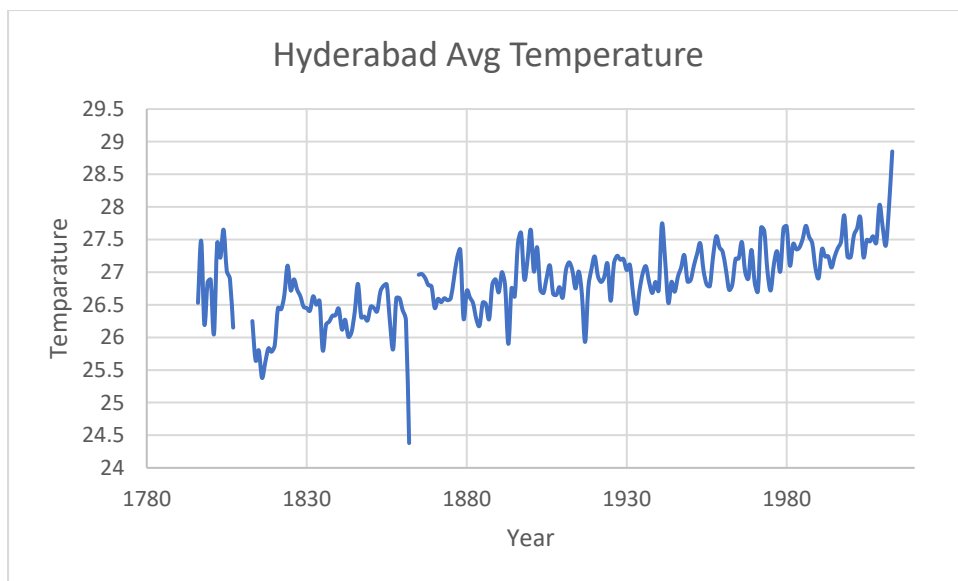
 • I Used Microsoft Excel for the analysis.

Moving Averages:

 • To observe the trends in temperature I calculated moving average(MA).

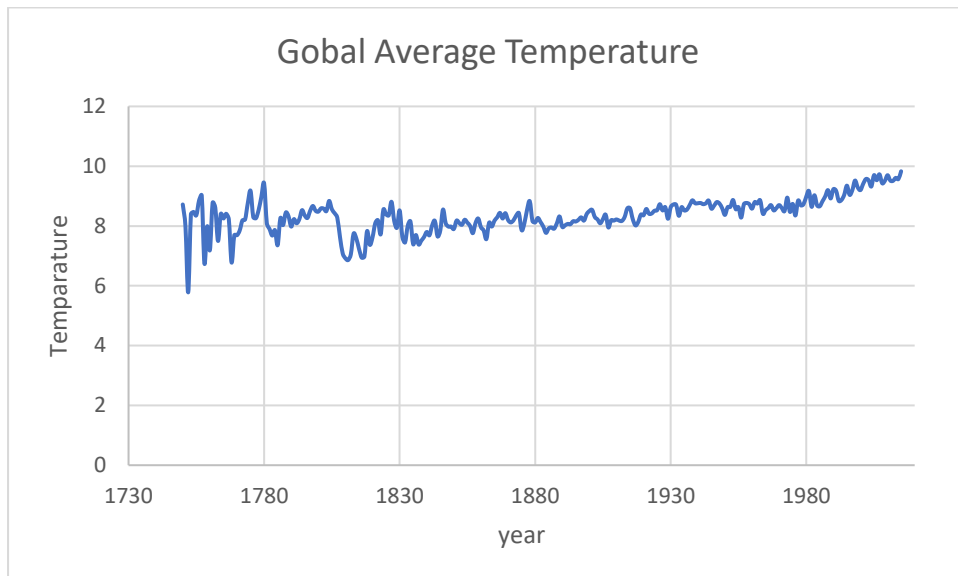• I used 9 years Moving Average to get the smooth line chart.

Excel commands for Moving Averages:

Moving Average	Excel Commands
For 10 years moving Average	=Average(B2:B10)

Line Chart for Hyderabad Average Temperature

Line Chart for Global Average Temperature
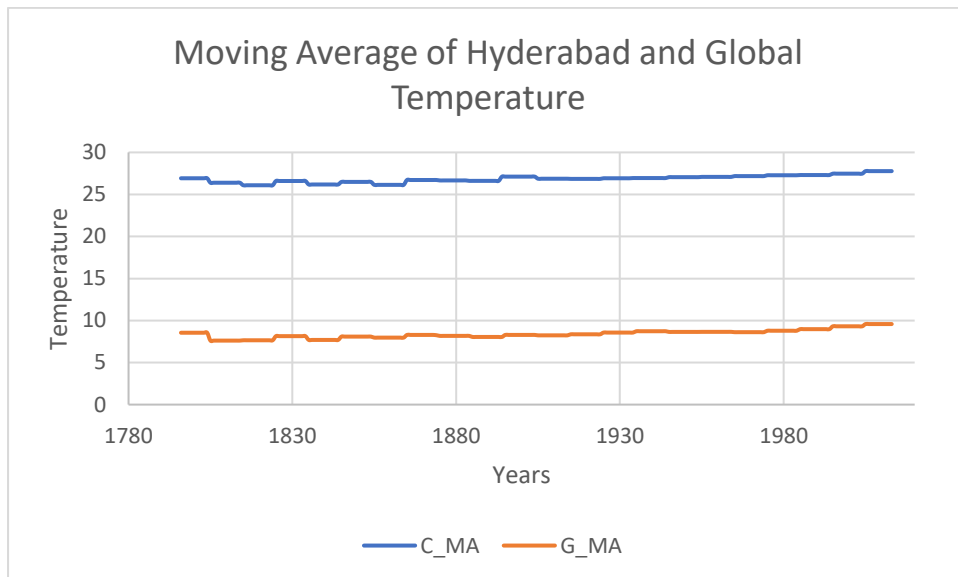
Gobal Average Temperature

Observation:

• Global average temperature is varies between 7.15 to 8.67 Degree Celsius but Hyderabad city average temperature is varies between 23.8 to 25.68 Degree Celsius.

• If comparing the Global average temperature and Hyderabad average temperature then the Hyderabad city is hotter then Global average temperature.

• Change in temperature over time:

Year	Change in Global average temperature	Change in Hyderabad Average temperature	Increasing/Decreasing over time
1804-1817	8.03-7.86	27.5-25.61	Decreasing
1864-1881	7.23-8.00	26.26-26.61	Increasing
1886-1903	7.66-8.03	26.51-26.73	Increasing

• According to the graph and above table the difference between Global average temperature and Hyderabad average temperature is been consistent over time.

• Hyderabad and Global average temperature have similar kind of trends. During early years, both trends seems to have ups and downs then approx. around 1992 the moving average temperature starts to increase at a steady rate.

• According to the graph the world is getting hotter because from 1804 to 2013 temperature is increase.

Line Chart of Moving Average of Hyderabad Vs Global Temperature

Moving Average of Hyderabad and Global Temperature

From This line chart we can see that eventually the graph is moving upwards which means the global temperature is rising which is directly proportional to increase in temperatures of the city.

Global Temperature ∞ Bangalore Temperature