# Explore Weather Trends

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Udacity – Data Analyst Nanodegree

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Project-1 (Explore weather trends)

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## Overview:

I have been provided with temperature data in the udacity workspace from where i have extracted the data related to my city temperature (Hyderabad) and global temperature using some SQL queries. I analysed the global temperatures and my city temperatures over the years by extracting, manipulating and visualizing the data.

## Goals:

1. Identifying and checking for my city in database using SQL queries.
2. Extracting the data from the Udacity Workspace.
3. Comparing the city data with global data.
4. Making a chart visualisation as a part of analysis.
5. Making observations based on visualised plots or charts.

## Tools Used:

SQL : To extract data from database.
Google Spreadsheets :

1. To calculate the moving averages of the data.
2. To plot a line chart for visualisation.

## STEP 1 : Extraction of the data

1. To Check whether Hyderabad(My city) is available in the database.

```
Select * from city_list where country='India' and city='Hyderabad';
```

2. To retrieve the Hyderabad city data from the database.

```
Select *  from city_data where city='Hyderabad';
```

3.Since there are same names for both the columns i have modified them to avg_tempfor_global and avg_tempfor_city

```
Alter table city_data rename column avg_temp to avg_tempfor_city;
```

Alter table global_data rename column avg_temp to avg_tempfor_global;

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4.Then I have joined two tables using inner join on the column year in both the tables.

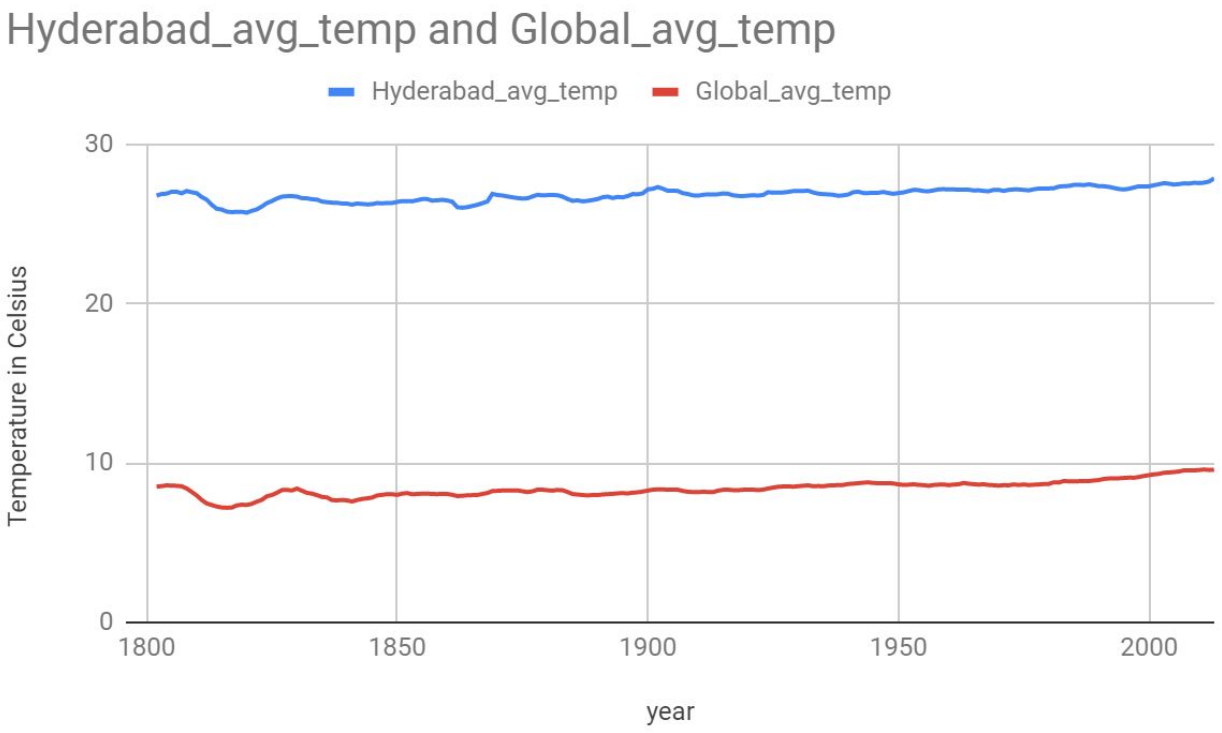
```
select
city_data.avg_tempfor_city,global_data.avg_tempfor_global,global_data.year
from city_data join global_data on global_data.year=city_data.year where
country='India' and city='Hyderabad';
```

5.Then downloaded the csv file which consists of avg_tempfor_global, avg_tempfor_city and year columns.

## Moving Averages :

1. To smooth the data and to observe the trends in the data.
2. I have done 7 year moving average to get a smooth line chart.
3. I used the aggregation function =AVERAGE(A2:A8) to calculate the moving average for 7 years and then copied the formula by dragging it down for avg_tempfor_global .
4. I used the aggregation function =AVERAGE(B2:B8) to calculate the moving average for 7 years and then copied the formula by dragging it down for avg_tempfor_city .

I have plotted the average temperatures (moving averages) of avg_tempfor_global and avg_tempfor_city using a line chart. Here is the line chart of Global_avg_temp and Hyderabad_avg_temp for 7 year MA.




## Observations :

1)The average temperature in my city Hyderabad of India has been more when compared to the average temperature of the global world.My city is hotter
2)There has been rise in the average temperature of the global world
3)Both the average temperatures of the world and my city are tending to increase
4)The global world average temperature has been cooler
5)For a certain period of time the average temperature of global world has been stagnant.