

INTRODUCTION

In this project, I have analyzed local and global temperature data and compared the temperature trends of the nearest city to where I live, which is Agra, to overall global temperature trends. The data was collected from the database provided by Udacity. Also, the nearby city has been chosen according to the available nearest city in the database. This project compares the data from 1865 to 2013.

PROJECT OUTLINE

Following are the tools and outline of steps that I followed for making this project:

- a. **SQL** : I used a SQL query to extract city level and global level data from the database provided on Udacity workspace. I explored both the datasets in workspace, cleaned them, joined both the datasets and stored it in **weather_report.csv** file. The code used as a SQL query can be found in the **Explore_Weather_Trends.txt**
- b. **Microsoft Excel**: I used excel worksheets to further clean and analyze the data and get the desired output in the form of processed data and final visualization. Here, I compared my city's temperature trends with the global temperature trends by using **moving average** over a span of every 5 years.

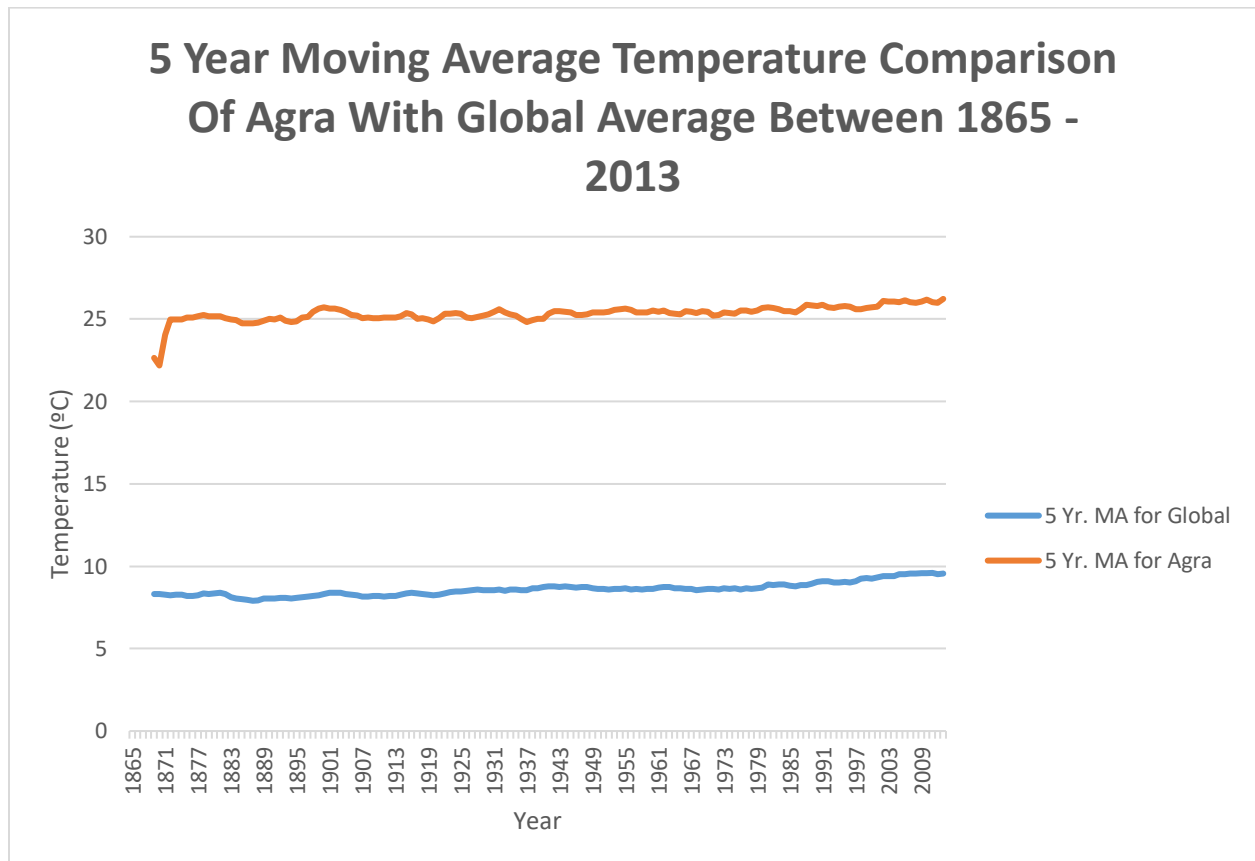
I calculated **moving average** using **AVERAGE(AVERAGE(number1, [number2], ...))** function for a span of 5 years for both city and global temperatures.

After processing the data with **moving average**, I saved the data as **weather_report.xlsx** file and then my data was ready to be able to get used for creating **line chart**. Therefore, I created a **line chart** that compared my city's temperatures with global temperatures using Excel's chart tools.

- c. **Microsoft Word**: I used word to document my findings and results.

LINE CHART

I am providing below the line chart that was created as the final output :



Here MA is the abbreviation for Moving Average.

OBSERVATIONS

Following are the observations that can be depicted from the graph :

1. We can clearly see that on an average Agra has been in higher temperatures than overall world temperatures.
2. It clearly shows that on an average from 1865 to 2013 , Agra has shown consistently more than twice the higher temperatures than global temperatures.
3. Agra's average temperatures have always been above 20 degree Celsius while Global temperatures have always been below 10 degree Celsius.
4. Trends for both type of temperatures have been consistent over time but global temperatures have been more stable than Agra's temperatures. There is more fluctuation in Agra's temperatures. But both the trends show a gradual increase in the average temperature along with the time.
5. This shows that the Agra and the overall world is getting hotter gradually along with the time.
6. In Agra's temperature trend, although the average temperature has been gradually increasing over years but a slight peak in the average temperature can be observed from 1895 to 1901.