

UDACITY DATA ANALYST NANODEGREE PROGRAM PROJECT 01:
“EXPLORE WEATHER TRENDS”



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LOCATION: RANCHI, INDIA

Summary: To analyze local and global temperature data and compare the temperature trends where I live to overall global temperature trends.

N.B: I used the data of Ranchi, a city in the Indian state of Jharkhand .

Step 1: Extracting the Data

- I have accessed and extracted the data using Structured Query Language (SQL).
- I have used the following SQL queries to extract the data of my location and global data respectively.

```
SELECT *  
FROM city_data  
WHERE city LIKE 'Ra'  
.....
```

```
SELECT *  
FROM global_data
```

- After fetching the data I have downloaded their respective 'CSV' files for analysis.

Step 2: Analyzing the Data

- I opened the 'CSV' files using Microsoft Excel.
- I gathered both the data in a same Excel sheet for further comparisons.
- I calculated the Moving Average (MA) to observe the trends between both the temperature sets and plotted them using Line Chart. I also used the data for 14 years (2000-2013) to get a smooth chart.

Excel Command for Average:

```
=AVERAGE (B2:B219) =AVERAGE (C2:C219)
```

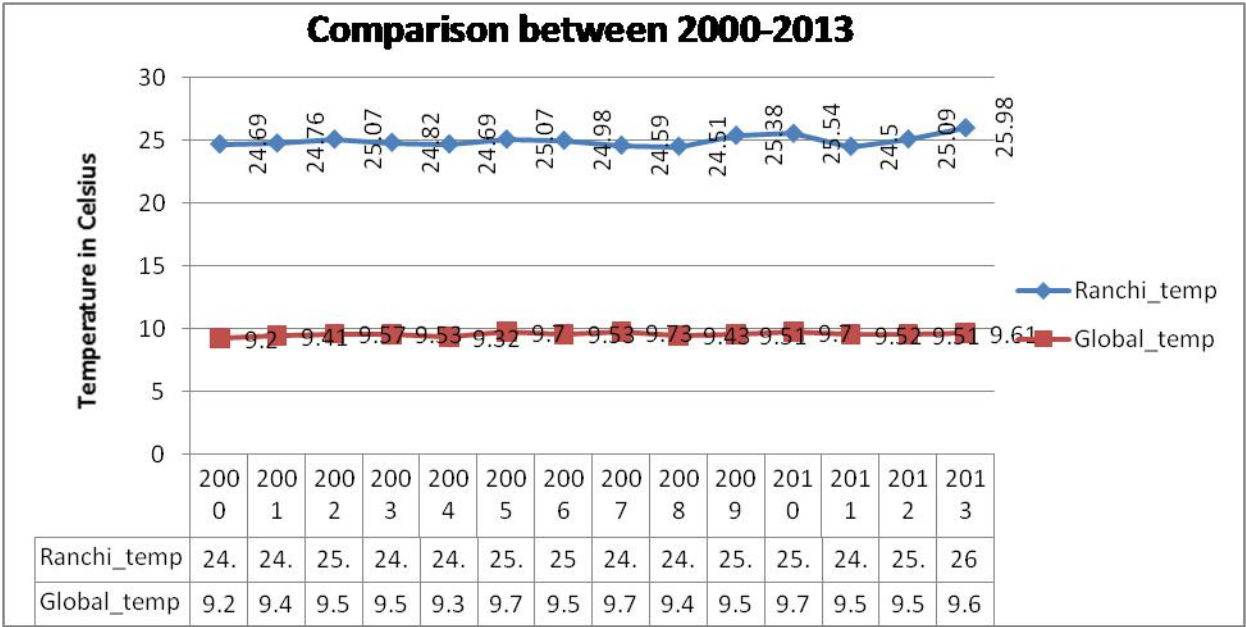
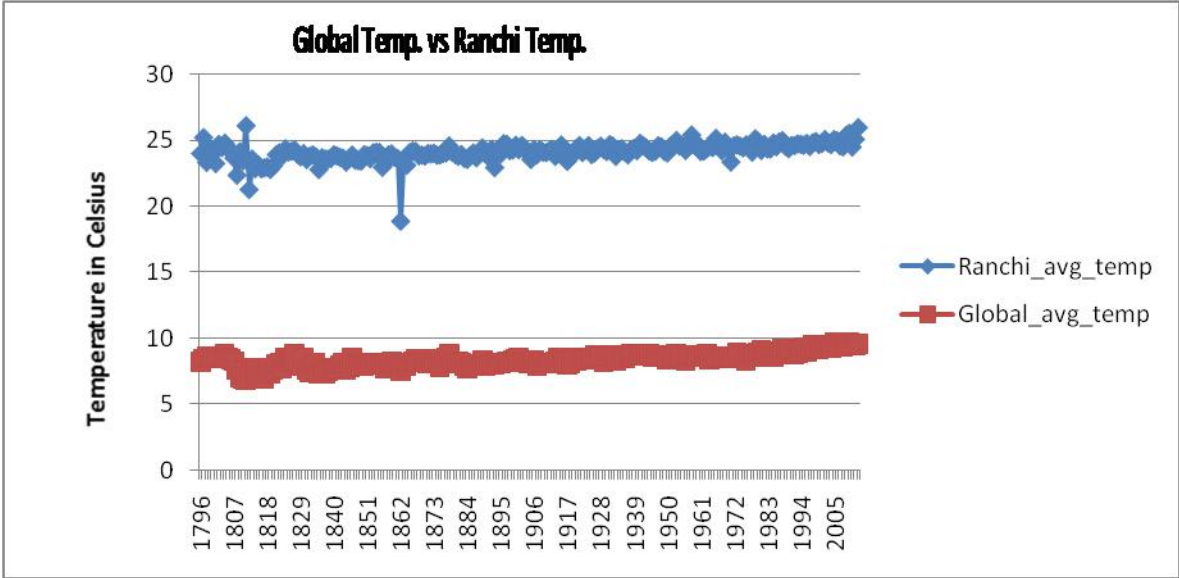
Excel Command for Max and Min Value:

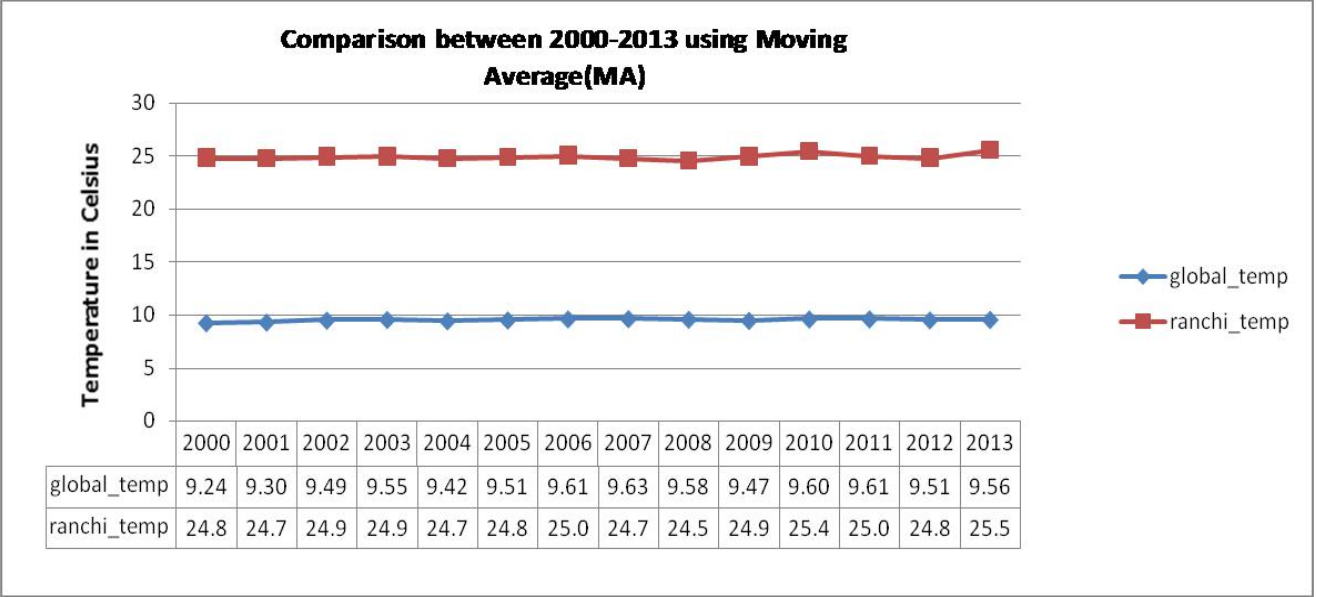
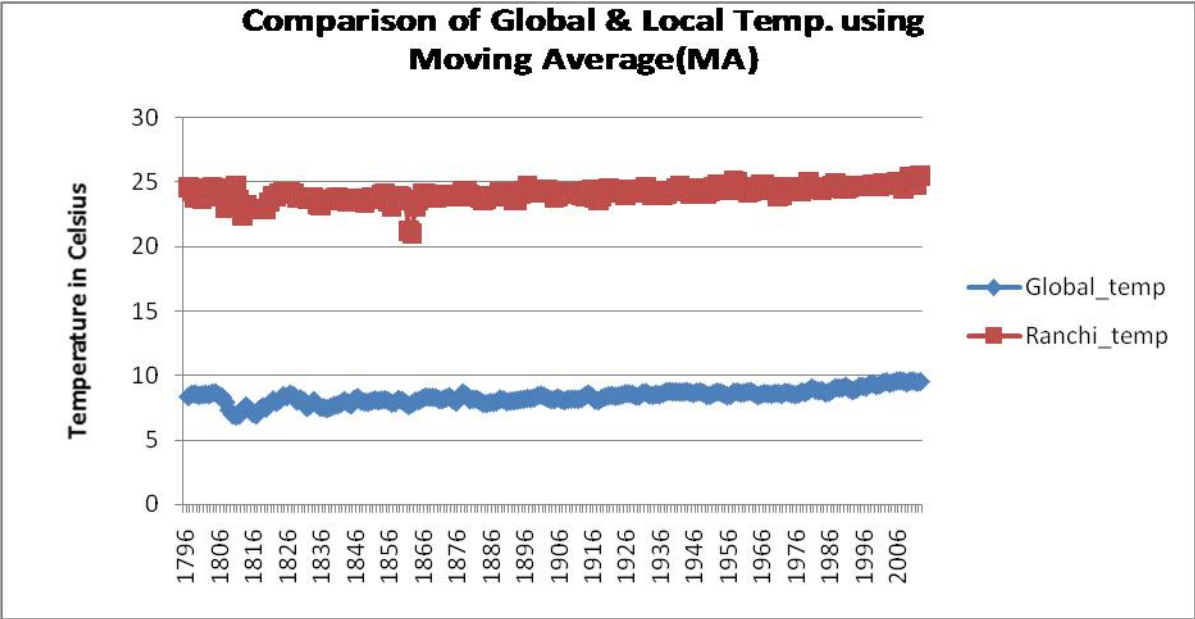
```
=MAX (B2:B219) =MAX (C2:C219)
```

```
=MIN (B2:B219) =MIN (C2:C219)
```

The blue line shows the temperature for my location whereas the red line shows the global temperature.

Global Temp. vs Ranchi Temp.





Step 3: Observations

- The average temperature globally is 8.43 degrees while that of Ranchi is 24.14642 degrees, which is much higher than the global average (3x).
- The global lowest temperature (6.94 degrees) was recorded in 1816 while that of Ranchi (18.86 degrees) was recorded in 1862.
- The global highest temperature (9.73 degrees) was recorded in 2007 while that of Ranchi (26.12 degrees) was recorded in 2013.
- The average temperature globally went above 9 degrees in 1994 for the very first time and it has been consistent till date.
- The present temperature globally and locally is higher than that of the average temperature.
- The curve for both the cases has shown a steep rise over time.
- Change in temperature over centenary

Period	Change in Global Temp.	Change in Ranchi Temp.
1796-1896	8.27-8.21	25.89-26.46
1897-1997	8.29-9.2	26.38-26.19
1998-2013	9.52-9.61	26.69-27.37

CONCLUSION:

We can conclude that the global temperature is rising exponentially and my local temperature is also rising similarly since the past century.