

Explore Weather Trends

Udacity Project

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Abstract

In this project, I analyzed local and global temperature data and compare between temperature trends in Riyadh, Saudi Arabia with global temperatures trends. The Data extraction has been done by writing SQL queries then exported to CSV and used Excel to calculate moving average over decades of years in order to get the visualized line chart comparing data of Riyadh and Global. Through analyzing the chart, it was observed that temperature in Riyadh is much higher than the global average.

Data Extraction

I extracted data from the database provided by Udacity consisting of three tables:

- ❖ city_list - This contains a list of cities and countries in the database.
- ❖ City_Data - Contains the average temperatures for each city by year (° C).
- ❖ Global_Data - Contains average global temperatures by year (° C).

To extract full data about Riyadh and global, I used this query :

```
SELECT city_data.city, city_data.year, city_data.avg_temp as Riyadh_Temp, global_data.year,  
global_data.avg_temp as Global_Temp
```

```
FROM city_data JOIN global_data
```

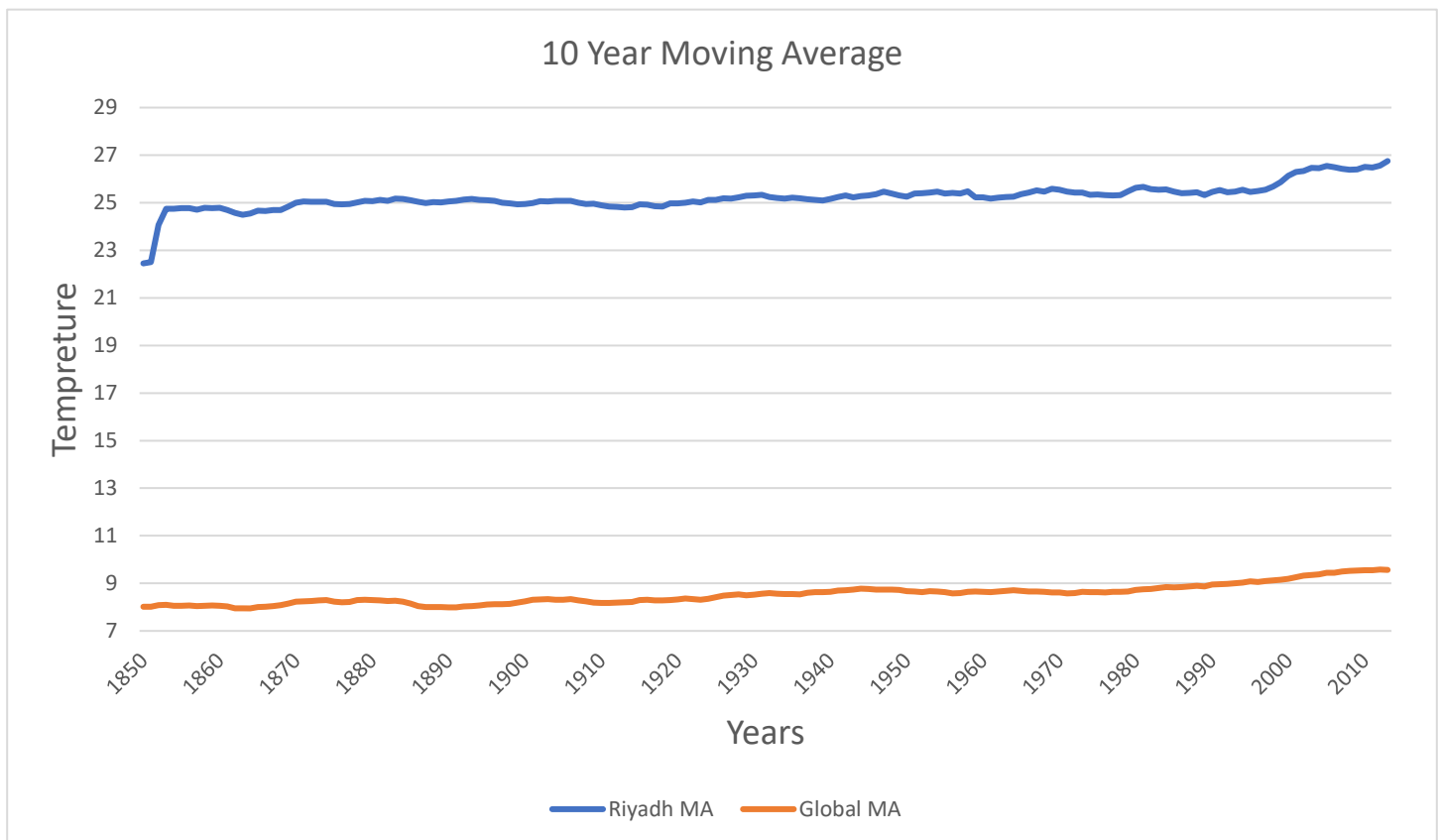
```
ON city_data.year=global_data.year
```

```
WHERE city_data.city='Riyadh';
```

I. Moving Average

By using Excel and average formula “AVERAGE()” provided by Excel. it was calculating the Moving Averages for a period of 10 years for the average temperatures of both global and the local data in Riyadh.

After calculating the MA “Moving Average”, the chart is plotted using the three columns namely Global MA temperature, Local MA temperature and the years. it’s provides the details of the changes in temperatures globally and locally.



II. Observations

From overall trend of Riyadh's, we can observe that the Average temperature of Riyadh is very hot in relation to the Average global temperature, which has barely reached 10 degrees. We can see Riyadh changed suddenly in the first ten years between 50's - 60's, and then the temperature increased gradually. Also, can see in last year's it's increases until it was reach to 27 degrees Celsius , Unlike the global average, which gradually escalated slowly over the years. The general overall trends look like world is consistently getting hotter over the years.