

# Global and Abuja Temperature Analysis Over Time

## 1. Getting the Data:

First I was given 3 different datasets. One had only names of different cities which aided me in identifying the city close to me. Another had the cities name and their average temperature in Celsius over the years. To get the data, i used an SQL query to separate Abuja's Data from the Global temperature data dropping Null values.

```
SELECT
    a.year,
    a.city,
    a.country,
    a.avg_temp,
    b.avg_temp as "avg_temp_global"
FROM city_data a
INNER JOIN global_data b
    on a.year = b.year
WHERE a.city = 'Abuja'
AND a.avg_temp IS NOT NULL
```

```
SELECT
    a.year,
    a.city,
    a.country,
    a.avg_temp,
    b.avg_temp as "avg_temp_global"
FROM city_data a
INNER JOIN global_data b
    on a.year = b.year
AND a.avg_temp IS NOT NULL
```

## 2. Exploring The Data:

Afterwards I opened the downloaded data using Excel sheets to help me calculate the **7-year moving Averages(a calculation to analyze data points by creating a series of averages of different subsets of the full data set)** over time on both datasets to help me ascertain how temperature averaged after every 7 years.

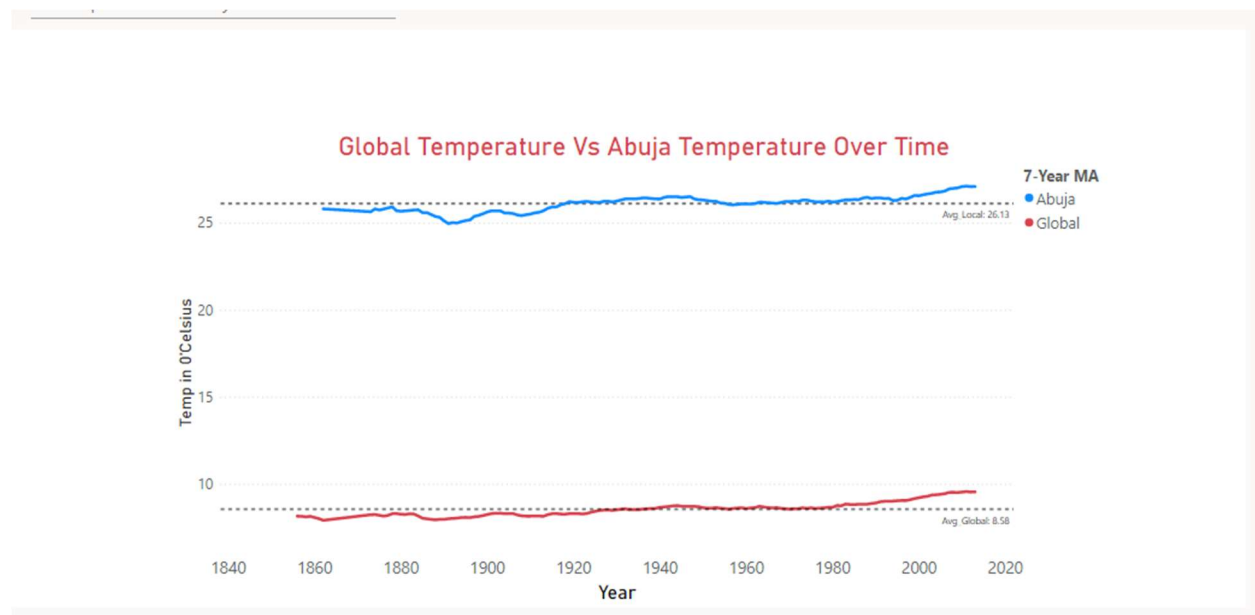
This was achieved by using the Excel function AVERAGE and I went ahead to populate other rows with copying and pasting the same function.

### 3. Data Visualization:

It was now time for data visualization I will be using Power BI.

I loaded the datasets into power BI and concatenated both on year column to be able to plot them on the same charts. I plotted a line chart with temperature on the Y-axis and used Year over time on the X-axis. I also used a trend line to identify the overall average temperature on both charts. This helped me understand things like:

1. The temperature difference between both charts
2. If my city is hotter or cooler on average compared to the global average?



Takeaway:

- Overall Average of my City's temperature is higher compared to the overall Global average temperature so my Abuja is hotter on Average
- The Temperature increase has been consistent over time and grows linearly

- The overall Trend is an uptrend. This shows that the world is getting hotter.
- Finally Abuja significant temperature difference with the global temperature has been consistent over time but from 1882-1898 there was a decrease in average temperature and the world got cooler but after then it has been increasing and we would agree with this analysis because of the global warming and climate change the world is experiencing.