

## PROJECT 1: EXPLORING WEATHER TRENDS

### TOOLS USED:

- SQL
- Excel

### STEPS:

#### Extracting the data with SQL

The following queries were made to extract the data:

- For a list of city

**SELECT city**

**FROM city\_list**

*(Output: a list of 342 Cities)*

- For a list of city (Lagos) temperature data

**SELECT city, year, avg\_temp**

**FROM city\_data**

**WHERE city = 'Lagos'**

*(Output: 165 results – 3 columns of results – City, Year, and avg\_temp)*

- For global temperature data

**SELECT \***

**FROM global\_data**

*(Output: 266 results – 2 columns of results – for year, and avg\_temp)*

#### Downloading the data

All the data was downloaded in CSV format and opened with Excel.

## MANIPULATING THE DATA ON EXCEL

The global average temperature data begins from the year 1750. There are temperature values provided every year up to 2015.

The average temperature for Lagos begins from the year 1849 and ends in 2013. Between 1852 and 1972, there are no values for a number of years.

Hence, to have the same number of values for the comparison, the values were both taken between the year 1873 and 2013.

A 10-year moving average was used in computing new values for the average global and city temperatures. This was gotten by finding the average of the first ten data values for Lagos and global average temperatures. With Excel, this function was applied to the remaining data.

This moving average values was used in creating a line chart.

## CREATING A LINE CHART WITH EXCEL

The line chart below was created using the Line Chart tool in Excel.

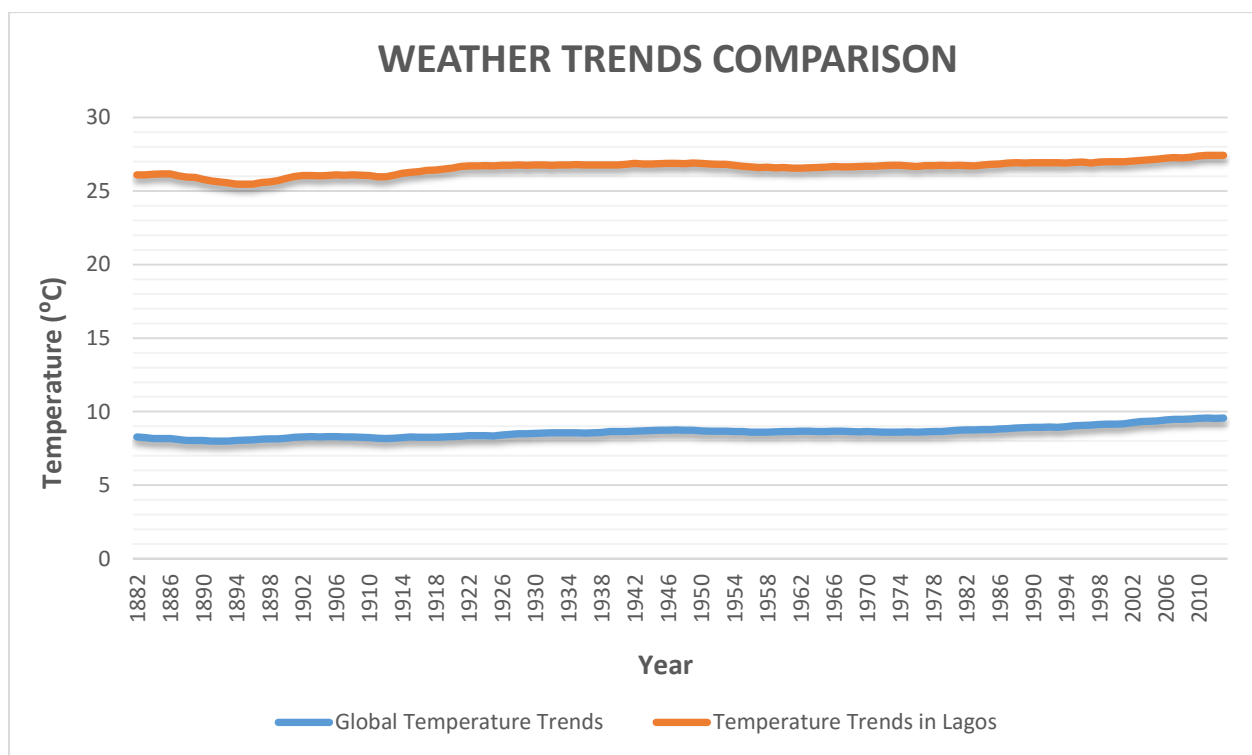


Fig.1: Line chart of weather trends

**OBSERVATION:**

- The average temperature of Lagos is higher than the global average
- The difference between the average temperature of Lagos and the global average has been relatively consistent over time.
- From the chart, the average temperature of Lagos over the period considered ranged from a bit above 25°C and somewhere above 27°C. That of the global temperature ranged from around 8°C to almost 10°C. Hence, the temperature changes pattern in Lagos is similar to the global temperature.
- Looking at the overall trend, it can be concluded that the world is getting hotter.
- At some point around the 1880/90s as well as in the 1950/60s, average temperatures of both Lagos and global had fallen slightly, but picked up shortly afterwards.