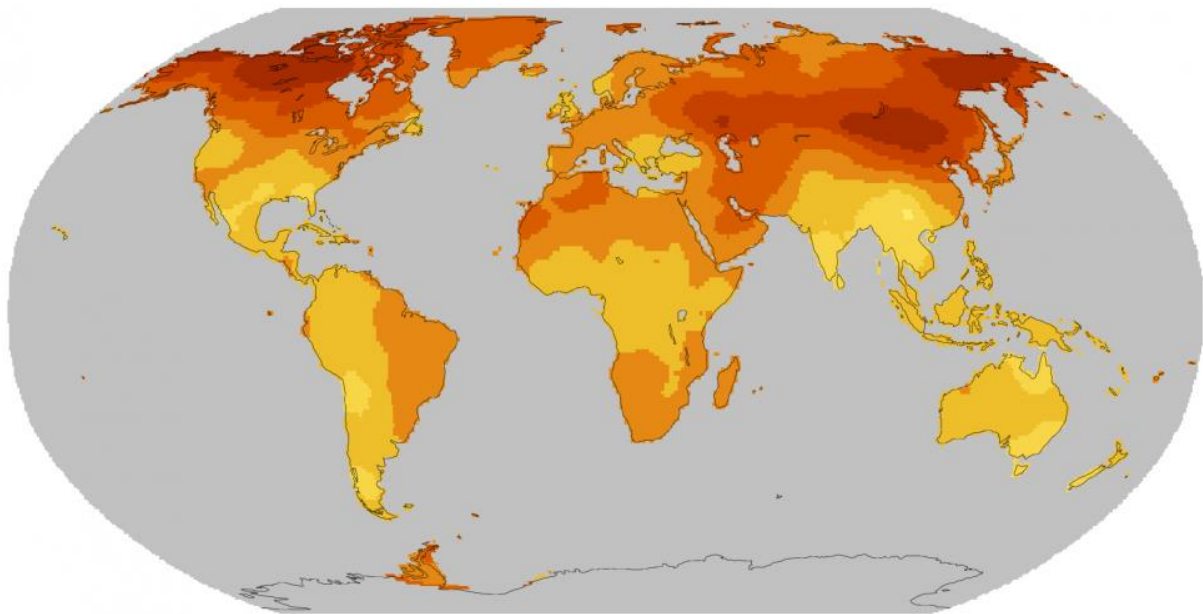


Project One

Explore Weather Trends



Done by:

Salsabeel Alhasasnh

INTRODUCTION

We will create a visualization to describe the difference and similarities between the global temperature trends and the Abu Dhabi temperature trends (The city was chosen is the Abu Dhabi because it is the closest city to us).

We use the UDACITY data to help us in analysing and draw the complete picture for the comparison.

SQL Queries

The SQL queries used to extract data and download it to CSV files to help us in creating a graph. First we will check if the Abu Dhabi exists or not by using this query.

```
select *  
from city_list  
where city like 'Abu %'
```

then I write a query to show the global temperature.

```
select *  
from global_data
```

The query below to show the Abu Dhabi temperature.

```
select *  
from city_data  
where city like '%Abu Dhabi%'
```

We write another query to put the two tables together

```
select    city_data.year,    city.country,    city_data.avg_temp    as    Abu_Dhabi_temp,  
global_data.avg_temp as global_temp  
from city_data  
join global_data  
on city_data.year = global_data.year  
where city like '%Abu Dhabi%'
```

Data Visualization

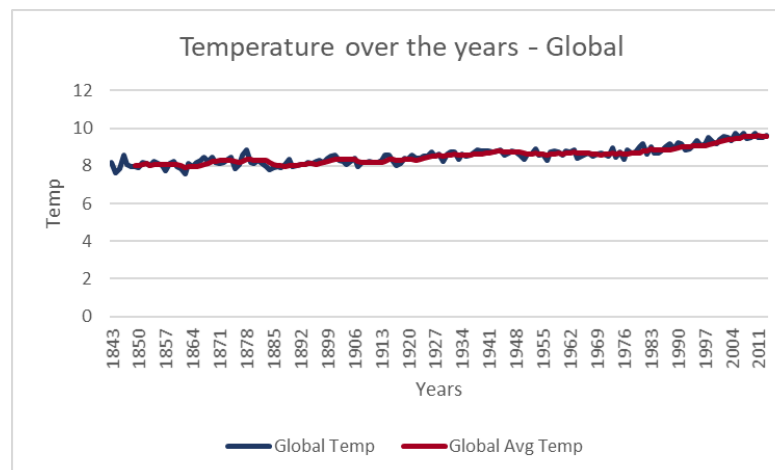
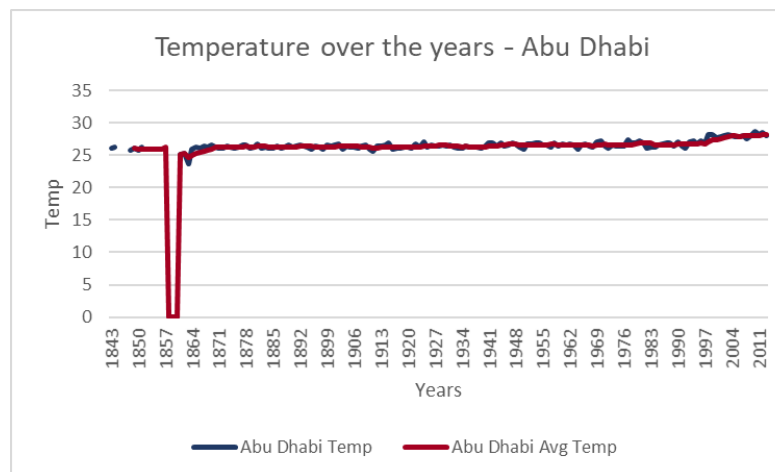
We use an Excel to draw the line chart and visualize the global and Abu Dhabi temperature trends. Note that data have some missing data, we will treat it by using moving average with interval = 7 years.

The moving average help us to smooth out data and make it easier to observe long term trends and not get lost in yearly fluctuations¹.

We calculate the moving average for both (global and Abu Dhabi) using the Data Analysis command in Excel.

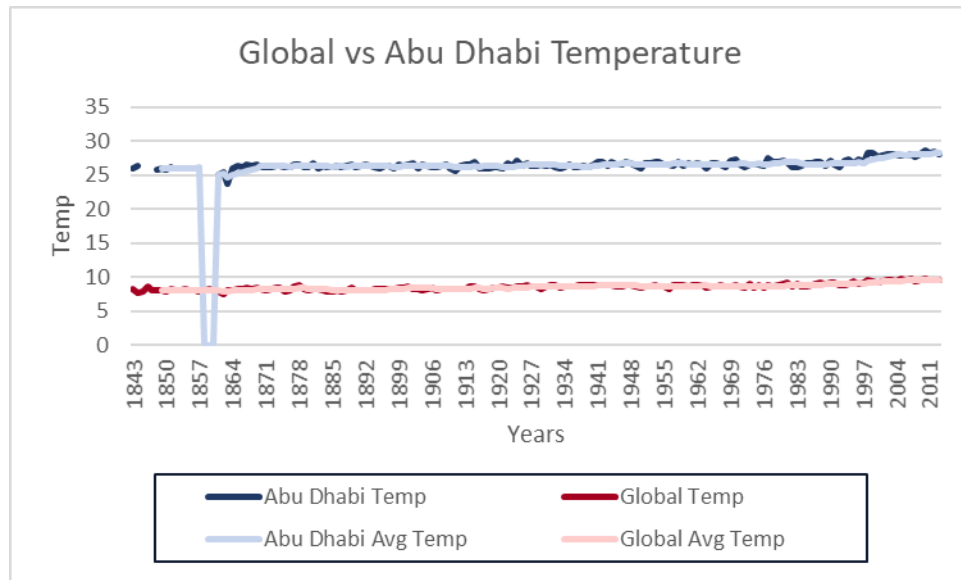
Then we represented it in Line Chart, we used Line Chart type because it is the most appropriate and the best representation of data that depend on time.

The figures below show the importance of moving average



¹ UDACITY lesson – moving average.

The global and Abu Dhabi temperatures shown as figure below:



Observations

From the above image, we can talk about the comparison between the temperature trends between the Global and Abu Dhabi

- In general, the weather in Abu Dhabi is hotter than the global temperature.
- The function of temperature (global and Abu Dhabi) is the closest to a constant function, if we neglect the early years in Abu Dhabi.
- In the last years we notice that the Abu Dhabi's temperature increasing.
- In some years as you look, we cannot calculate the moving average temperature because the database has a null value.