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**Project 1: Exploring Weather Trends**

**Udacity Data Analysis Naodegree**

## Introduction:

First of all, I used SQL queries to extract the data from workspace. Also, I used a query to filter the city that I live in which is Riyadh City. Then, I exported the data as CSV files. Finally, I analyzed the data using Python programming language and Anaconda for Jupyter.

## Analysis:

1. Sql Queries: Queries that used to export data to CSV files
    a. Query to get global data: SELECT * FROM global_data;
    b. query to get the data and cleaning them in Python:
    SELECT year,city,avg_temp from city_data WHERE city ='Riyadh'

## 2. Python :

```
#Imports Libraries To be used for analyse data and data visulaization
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```
#Read csv files using pandas library
globalTemp= pd.read_csv('global_data.csv')
riyadhTemp = pd.read_csv('riyadh_city.csv')
```

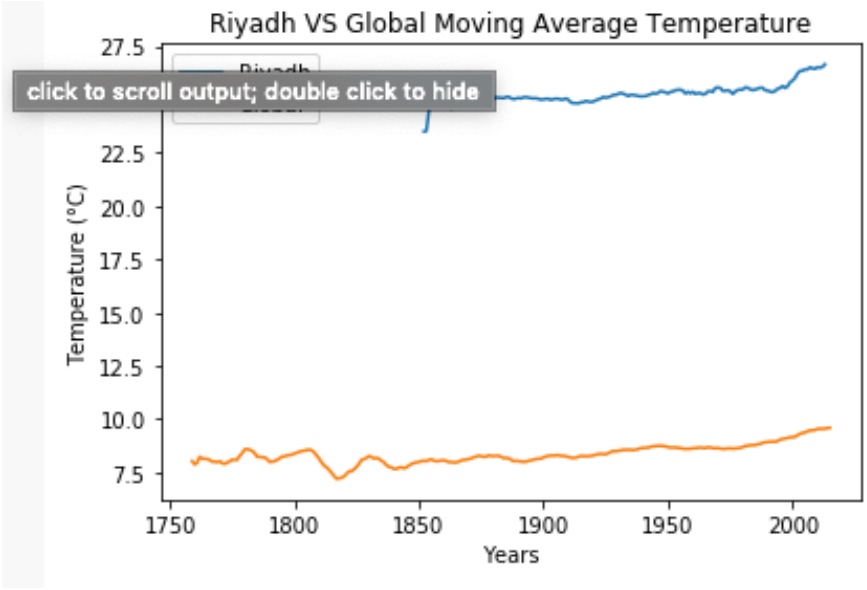
```
#First cleaning data
city_avg_mean = riyadhTemp['avg_temp'].mean()
riyadhTemp['avg_temp'].fillna(city_avg_mean,inplace =True)
#Caluclate Moving average using rolling and mean methods
glb_mavg = globalTemp['avg_temp'].rolling(window=10).mean()
city_mavg= riyadhTemp['avg_temp'].rolling(window=10).mean()
```

## 3. Moving Average:

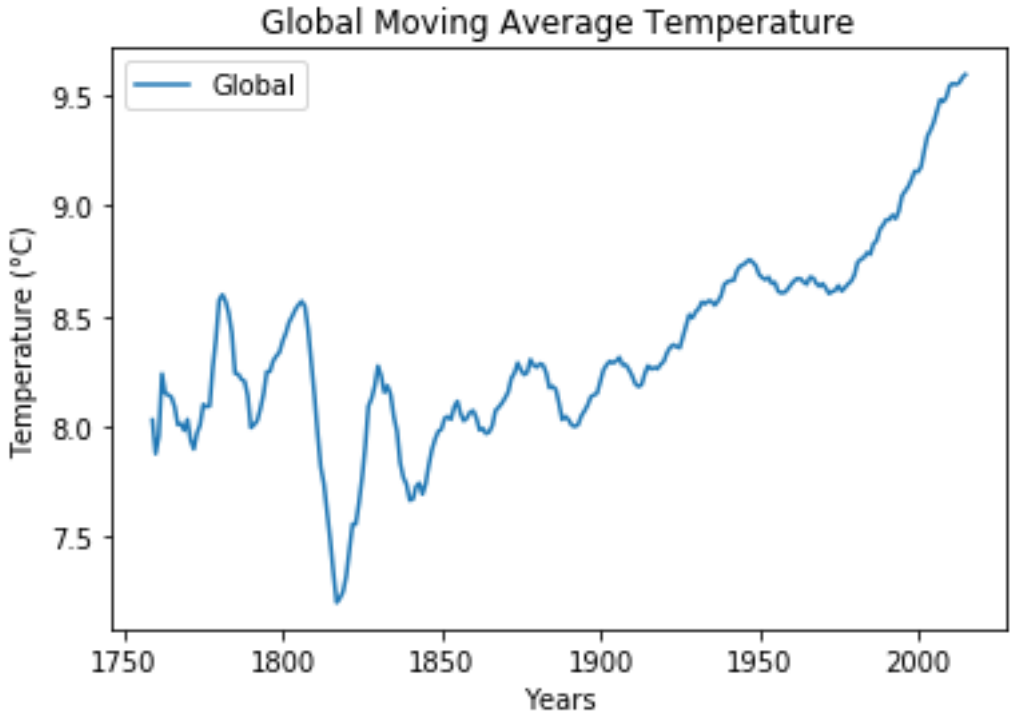
a. Moving Average is calculated to weave out the data and to make it look easy to read.
b. Moving average is calculated for 10 years.
c. Using Python functions to calculate moving average. (rolling, mean)

## 4. Line Charts :

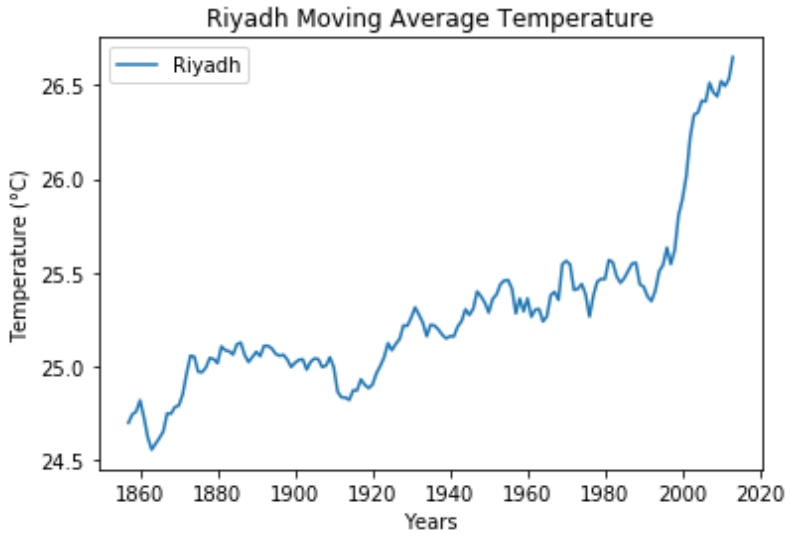
a.




b.



c.




**Observations:**

- Charts shows that tempreture has been raising over the years .
- In Riyadhe city, tempreture has been rasing after 1920 till today.
- In global, tempreture has been changeable sine 1750 – 1850.
- In global, tempreture hase been increased since the middle of 1850
- Comparing Riyadh city to global, tempretures have been increased.
- We notice that in Riyadh sity, tempreture has be extermly increased after 1990.

## Cunclusion :

The world is getting hotter .