Udacity

Data Analyst Nanodegree Program
Project 1
Exploring Weather Trends

First, extracting the data from database: -

After seeing the data in the database, I decided to analysis the temperature from 1848 and after since there is a missing data in 1846 and 1847 that might affect the analysis.

Also, after checking the dates of Riyadh's data and global's data, I have notice that there is no data about Riyadh's temps in 2014 and 2015 unlike the global data, so I decided to remove the last two years of global data to match Riyadh's recorded data (1848-2013).

My SQL for extracting global's data: -

> *Select avg_temp, year*
> *From global_data*
> *Where year > 1847 and year <2014;*

My SQL for extracting Riyadh's data: -

> *Select avg_temp, year*
> *From city_data*
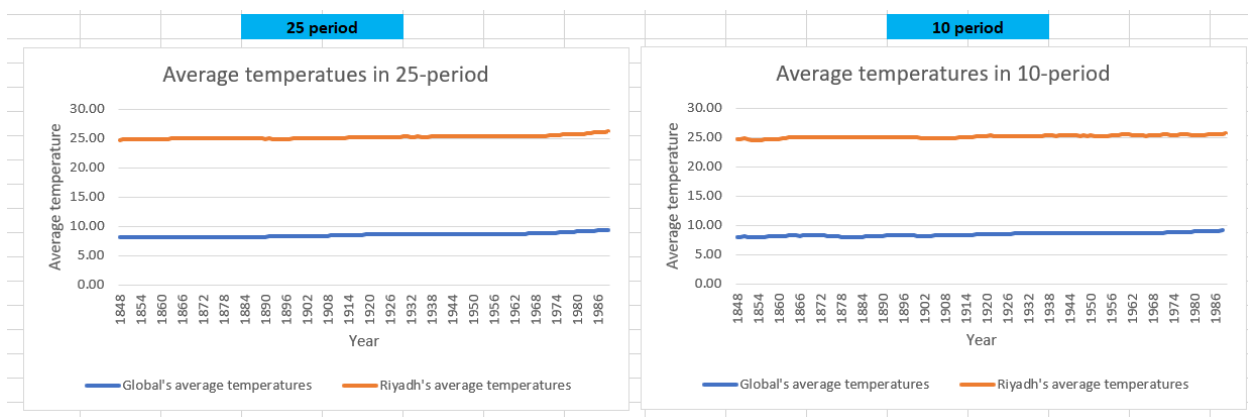> *Where city = 'Riyadh' and year > 1847;*

Calculating the moving average: -

- After deep search on the internet and how to decide to choose the period of your SMA (Simple Moving Average), I have come to a conclusion that the slower (longer) your period is, the smother your line graph is and vice versa. I chose my period to be 10 and 25 years as to represent a decade and quarter of a century in data.

Pic1

Line chart: -

Pic2

- So, the X axis represent the year, and Y axis represent the average temperature of a year.
- The blue line represents the moving average for global average temperature and the orange line represent the moving average for Riyadh average temperature.
- And because the merging of the two moving averages in one chart deletes some details, I separate it to observe these details.

Average temperatues in 25-period
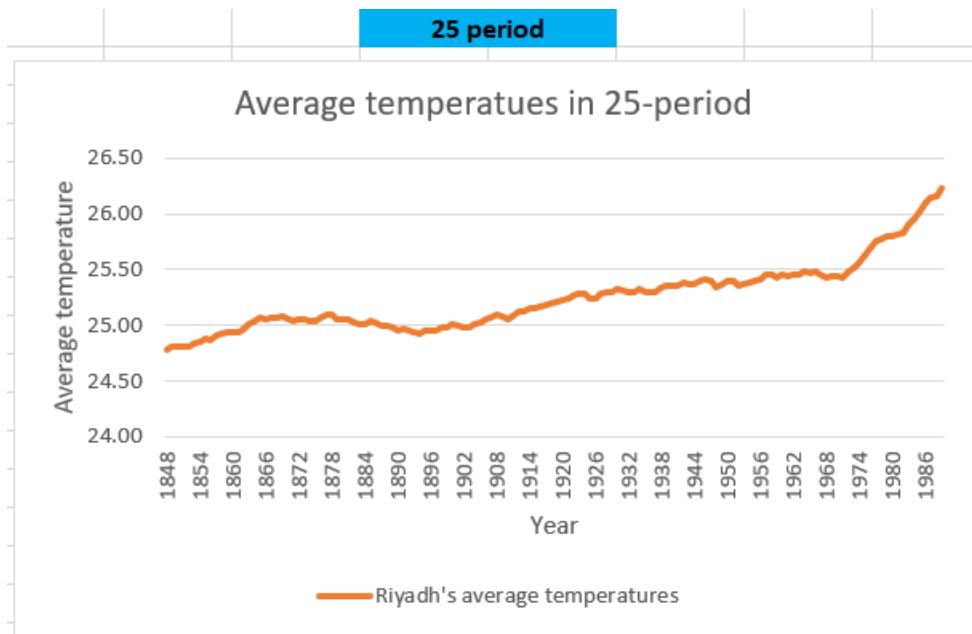
Pic3

My observations: -

1- (Pic2) Riyadh's temperatures are higher the global temperature by almost 50 – 60% which speaks a volume about the Riyadh desert climates.

2- (Pic2) In general, Riyadh and global temperatures are increasing due to the global warming issue that the governments are fighting hard to reduce it by making environment rules for manufacture smoking and cars.

3- (Pic3) There was a small decreasing in temperatures in the 1890s on Riyadh's temperatures.

4- (Pic2) in the 25-period chart for Riyadh's temperatures line, you can notice a higher increasing in temperatures compare to global temperatures, which is hard to notice in the 10-period chart. In general, you can notice the increasing in 25-period chart way more than in 10-period chart.

5- In 1848, average global temperature recorded was 7.98 and in 2013 it was 9.61, with 1.63 increasing in average temperatures. Where in Riyadh, the average recorded temperature in 1848 was 24.56 and 2013 it was 27.78, with 3.22 increasing in average temperatures.

6- In point 5 above, Riyadh recorded an increasing on temperatures more than 50.6% that was recorded for global temperatures.