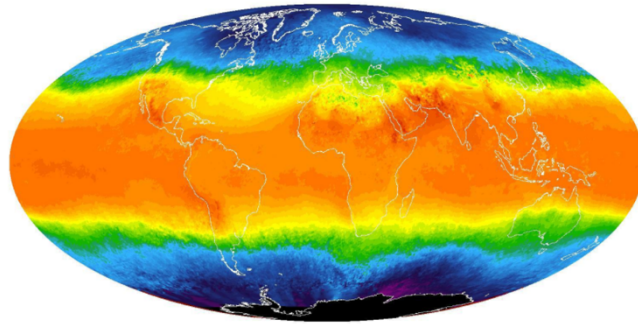Project 1

Exploring Weather Trends

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Introduction

In this report you will find my analysis of Riyadh city and global temperature data as well as a comparison of the temperature trends of both.

My main objective is to create a visualization that can represent the similarities and differences between global and Riyadh temperature trends.

In order to do so I used tools that helped me conduct the report that are:

- *Udacity Database where I extracted the data used in this report, using SQL Queries.*

- *Excel sheet in order to conduct a statistical analysis and visualization since many formulas are built-in in Microsoft Excel such as' =AVERAGE()'.*

The first step was to extract data from the database given by Udacity, throughout writing a SQL query to extract Riyadh and Global data. As shown in the figures bellow.
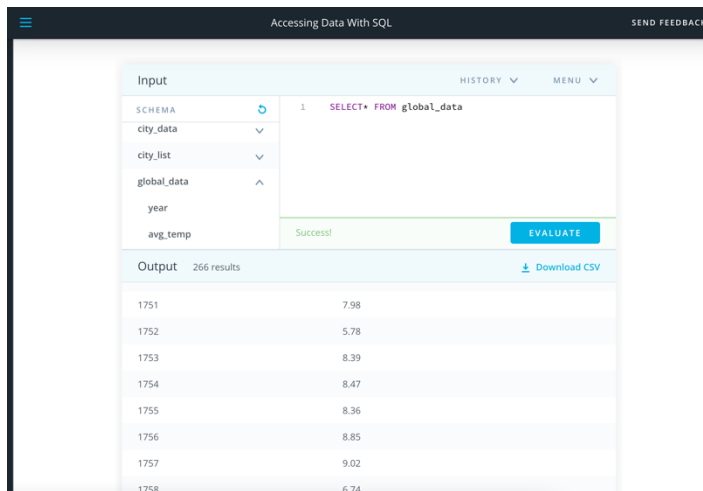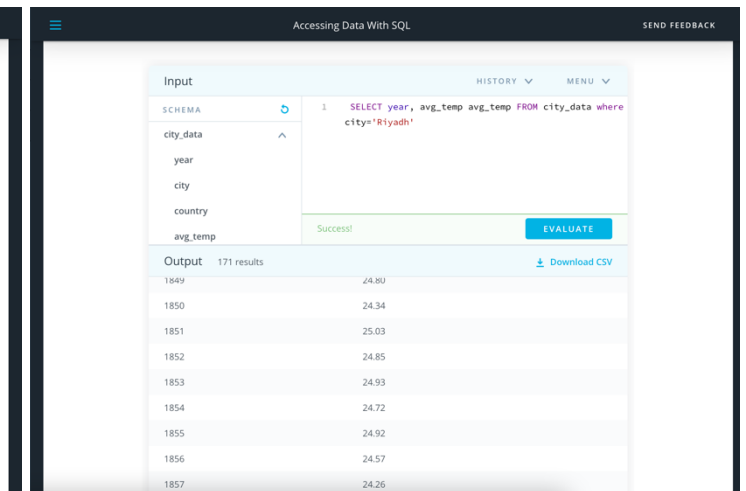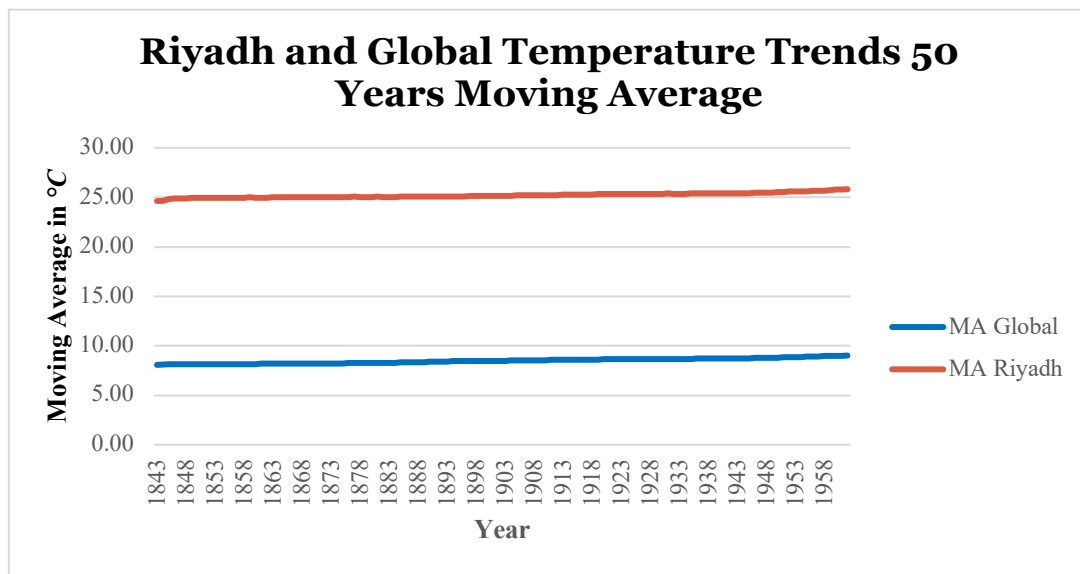

Figure 1Writing a query to extract global data

Figure 2Writing a query to extract Riyadh data

After extracting the data, I calculated the moving average by a plot of 50 years as to show the line graph more neat and smoother, by using '=AVERAGE('the array of average temperature')' for both. Moreover, I used 'Line Graph' to track temperature changes over short and long periods of time. In which I indicated Riyadh lines in warm color because It's considered hotter than the global temperature that is in cooler color.

Riyadh and Global Temperature Trends 50 Years Moving Average

Furthermore, I found out that there are some differences between the global and Riyadh averages. Therefore, Riyadh's temperature of 50 years moving average indicates that starting of 1891 Riyadh's temperature increase was constant, it was very slow, rising from about 25 ℃ to around 25.5% over the period. In the other hand, Global temperature Moving average figure has been rising steeply from 1891. From then on, it increases consistently to reach a peak of 9 ℃ over the years. Moreover, Riyadh appears to have a hotter temperature compared to the global temperature starting of the year of 1891 as in order 25 ℃ , 8 ℃. In addition, global temperature is considered cooler compared with Riyadh's temperature, however, it is gradually increasing and getting hot over time. Also, the difference has been increasing consistently for both over the years, where is Riyadh temperature has a soft increase to reach a peak around 25.5 ℃, but for global temperature has been steadily increasing to reach a peak at 9 ℃ over the years. Hence, there is an increase in the world temperature over the years, in which the world is getting hotter as time passes by.

Summary

The graph showed the moving average of temperature changes occurred in the globe and Riyadh, between the years 1843 and 2012. As seen in the figure, the years 1891 to 2012 saw the MA of temperatures in the globe and Riyadh increase and decrease by approximately the same directions. Nevertheless, it's clearly seen that in Riyadh, MA of temperatures have always been above the global rates expected for the early 1800s. So, Riyadh is hotter compared to the global average. Overall, the world has been consistently getting hotter since the late 1890s.