

# Udacity Data Analysis Nanodegree

## Project 1: Exploring Weather Trends

### Global Temperature Increase Analysis

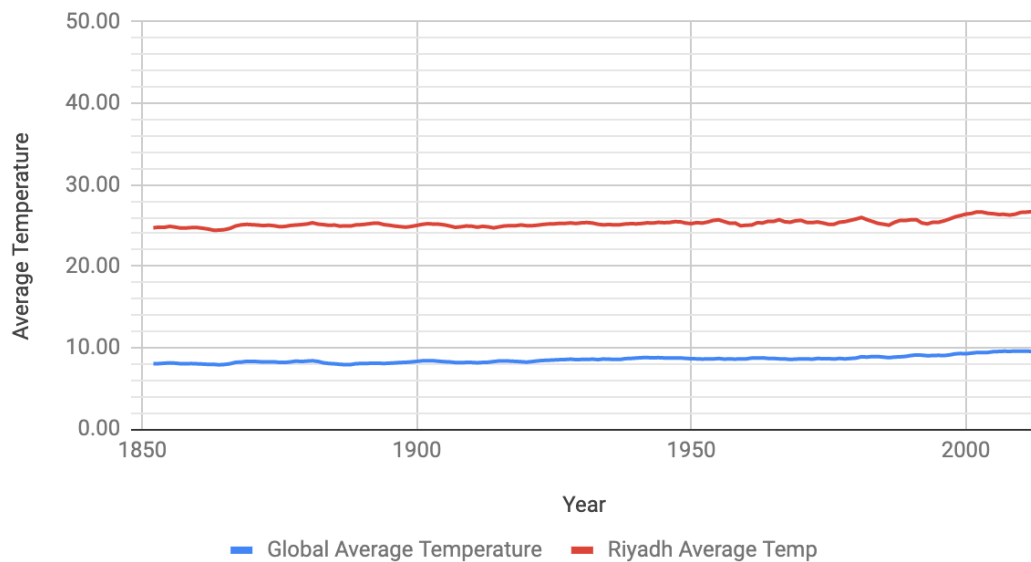
In this paper we will look into the increase in global temperatures in comparison to the temperatures in the city of Riyadh, my home city. In order to do this we used the historical data provided by Udacity from the tables `global_data` & `city_data` using the following query:

```
select g.year as year, c.avg_temp as Riyadh, g.avg_temp as Global
from global_data g
join city_data c on g.year = c.year
where c.city = 'Riyadh'
and g.year > 1847
```

As you can see the query gets global and Riyadh temperatures for each year by joining the 2 tables `global_data` & `city_data` on the year. I added a condition that the query should only retrieve records that are after the year 1847 since that there are empty records in the `city_data` table for the city of Riyadh before the year 1848.

Once I downloaded the the extracted data, I opened it in a Google sheet. I added 2 extra columns to calculate the 5 year moving average for the temperatures. Calculating the moving average was a matter of averaging the temperatures of the past 5 years for any given year. Since the data started on 1848, the first moving average we calculate is for the temperatures for 1852. With the moving averages I created the line graph below that shows the overall change in average temperatures throughout the years.

## Global Average Temperatures vs Riyadh Average Temperatures



The following were the observations I seen from the graph:

- Overall the average temperatures are steadily increasing throughout time both in Riyadh and Globally
- The average of Riyadh's Temperatures is higher than the average global temperatures by 296%
- The increase in Riyadh's Temperature was approximately 9% whereas globally the increase is about 19%
- The graph shows the overall fluctuation in average global temperatures is less than the fluctuation in average temperatures in Riyadh
- Both Global & Riyadh Average Temperatures started to show a general increase after the start of the 1900s