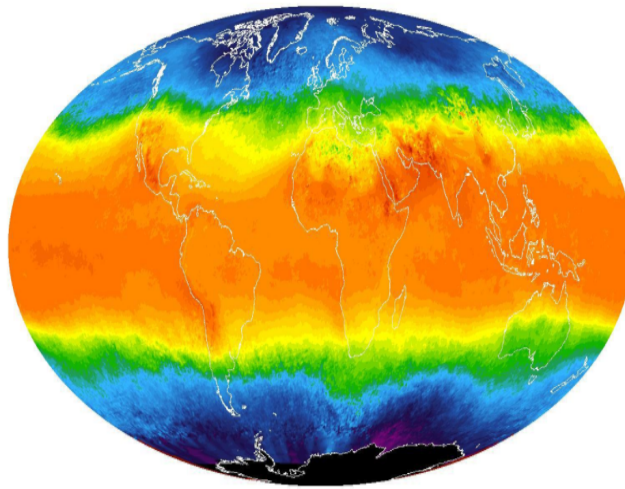U D A C I T Y

Exploring Weather Trends - Project Instructions

Data Analyst Nanodegree

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#Project 1

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Introduction

This report aims to analyze global temperatures with the temperatures of the region in which I live.

Udacity added a database related to global temperatures and temperatures for different regions, and the comparison between global temperatures and Riyadh region temperatures .

Was used, 9 years were used to calculate the Moving Averages between all years.

Tools

- Database Schema

There are three tables in the database:

- city_list - This contains a list of cities and countries in the database. Look through them in order to find the city nearest to you.
- city_data - This contains the average temperatures for each city by year (ºC).
- global_data - This contains the average global temperatures by year (ºC).

- SQL

Database language was used to extract data from public databases and use it in analysis

Extract data from database

- To select data from global_data database

    SELECT year , avg_temp from global_data;
- To select data from city_list database

   SELECT city_data.year , city_data.city, city_data.avg_temp from city_data where city ='Riyadh'

After using these commands to perform data extraction from databases, I now have CSV file that contain the required data between global temperatures and temperatures for the Riyadh region "the region near me".

- Moving Averages

	A	B	C	D	E	F
	year_global	city	avg_temp_riyadh	avg_temp_global	Move_avg_riyadh	Mov_avg_global
	1843	Riyadh	24.74	8.72	24.835	7.955
	1844	Riyadh	15.45	7.98	20.085	8.375
	1845	Riyadh	20.82	5.78	22.87	7.195
	1848	Riyadh	24.56	8.36	24.565	7.93
	1849	Riyadh	24.8	8.85	24.53	8.625
	1850	Riyadh	24.34	9.02	24.675	8.635
	1851	Riyadh	25.03	6.74	24.99	7.575
	1852	Riyadh	24.85	7.99	24.895	8.105
	1853	Riyadh	24.93	7.19	24.53	6.985
	1854	Riyadh	24.72	8.77	24.245	8.23
	1855	Riyadh	24.92	8.61	24.6	8.15
	1856	Riyadh	24.57	7.5	24.8	7.675
	1857	Riyadh	24.26	8.4	24.745	8.295
	1858	Riyadh	25.01	8.25	24.965	8.235
	1859	Riyadh	24.95	8.41	25.085	8.59
	1860	Riyadh	24.94	8.22	24.97	8.7
	1861	Riyadh	24.13	6.78	24.715	7.54
	1862	Riyadh	23.77	7.69	24.395	7.975
	1863	Riyadh	24.28	7.69	24.505	8.115
	1864	Riyadh	25.03	7.85	24.95	8.415
	1865	Riyadh	25.23	8.19	25.235	8.81
	1866	Riyadh	24.92	8.22	24.95	8.16
	1867	Riyadh	25.22	8.77	24.825	8.335
	1868	Riyadh	25	9.18	24.945	8.43
	1869	Riyadh	25.3	8.3	25.385	8.08
	1870	Riyadh	25.02	8.26	25.265	7.81
	1871	Riyadh	24.73	8.54	24.985	8.4
	1872	Riyadh	24.87	8.98	24.835	8.505
	1873	Riyadh	25.24	9.43	25.435	8.94

- Add a new field Move_avg_riyadh to carry out the process of calculating the average for the Riyadh region .

- Add a new field Mov_avg_global to carry out the process of calculating the average for the global temperatures .

- I used function AVERAGE(C2,C10) to see the result using 9-year Moving Averages in Riyadh region .

- I used function AVERAGE(D2,D10) to see the result using 9-year Moving Averages in global temperatures .

Moving Averages between global temperatures and temperatures for the Riyadh region

Average temperature between Riyadh and global temperature
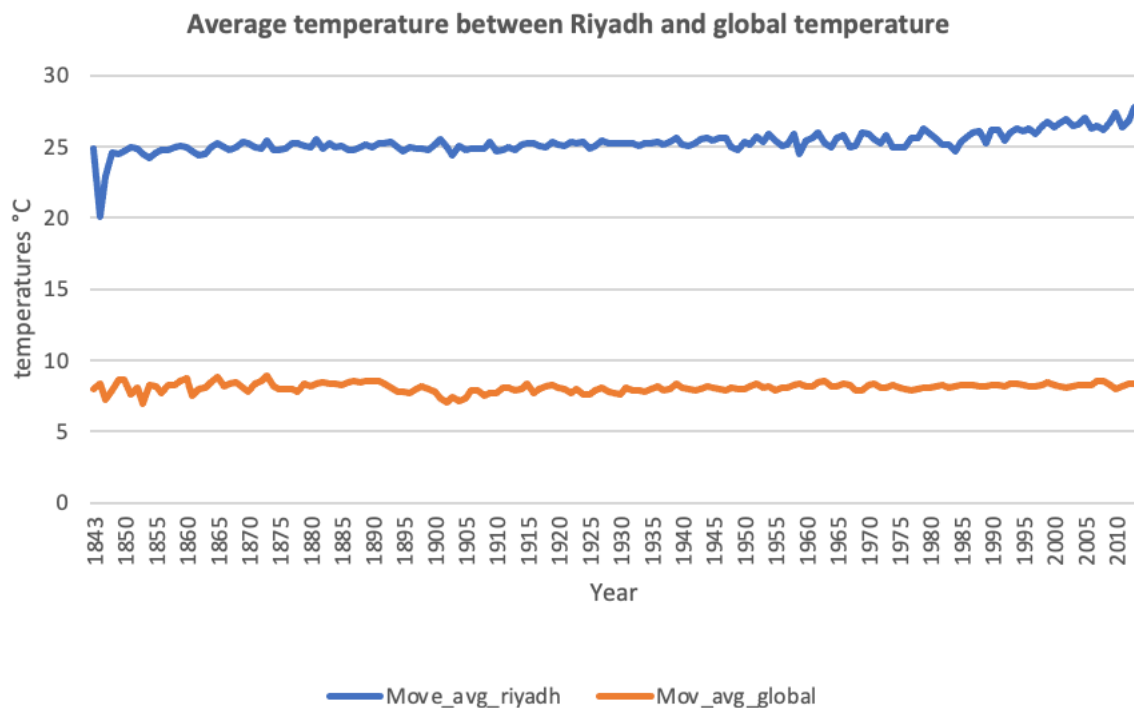
- Considerations
  - X-Axis : Years
  - Y-Axis : Temperature (°C)
  - The blue color describes the temperature °C of the Riyadh region
  - The orange color describes the temperature °C of the global region

- Observation

- We note the average temperature for the Riyadh region for 9 years ranges between 20.085 °C to 24.835 °C.

- The Riyadh region is considered high in temperatures, unlike the Global comparison.

- For 9 years, the Riyadh region has been below the same average temperature rise.

- We note the average temperature for the Global Average Temperature for 9 years between 6.985 °C to 8.635 °C.

- The global region is considered to have low temperatures for 9 years

- Global temperature below average temperature rise

- Comparing the global temperature and the Riyadh region, the Riyadh region is considered to bear the largest rise in the temperature level, unlike the global temperature, as it is considered much lower than the Riyadh region in the level of temperatures

- The Riyadh region, if we observe in recent years a rise in temperatures, which is considered to be on the increase, unlike the global temperature, It is considered the convergent level in r all years.

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Reference

https://www.statisticshowto.com/probability-and-statistics/statistics-definitions/moving-average/

https://www.youtube.com/watch?v=mC1ARrtkObc

https://www.youtube.com/watch?v=4gaymR1vrEE