

A photograph of a forest path. Sunlight filters through the dense canopy of evergreen trees, creating a dappled pattern of light and shadow on the ground. The path is covered in dry leaves and pine needles. The trees are tall and slender, with some showing signs of age or damage. The overall atmosphere is serene and natural.

# Exploring Weather Trends

The first project

By Nasser Abdulaziz Alateeq

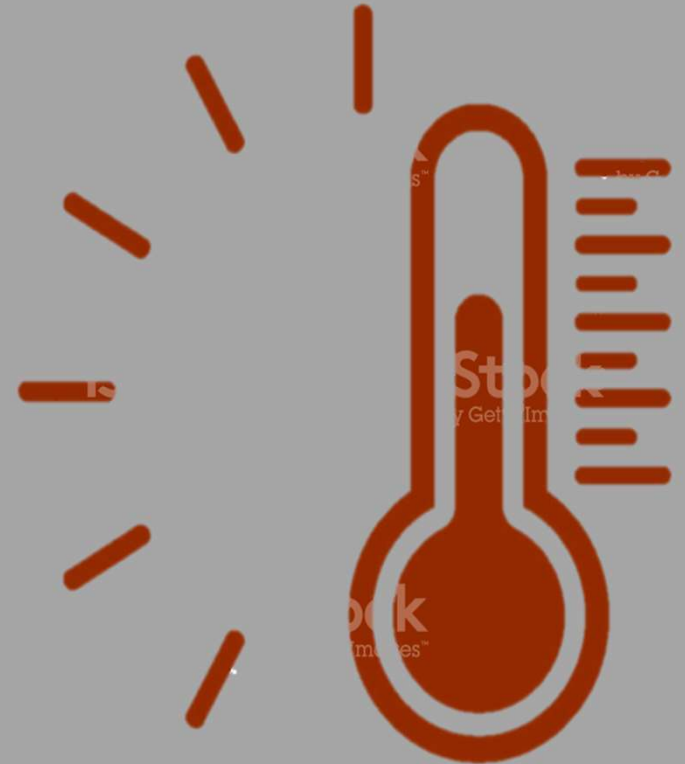




# Exploring Weather Trends

## First Report

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## Introduction:

This offer is submitted to UDACTIY Center to fulfill the requirements of the first project in a cycle data analyst Nanodegree, It is titled (Exploring Weather Trends), this project is comparing data between Riyadh temperature and global temperature Whereas temperatures are one of the indicators for measuring the weather in a place in the long term, and are affected by geographical location, height above sea level and a number of other factors.

❖ Excel was used in all mathematical and statistical operations.

❖ Translated by my brother.

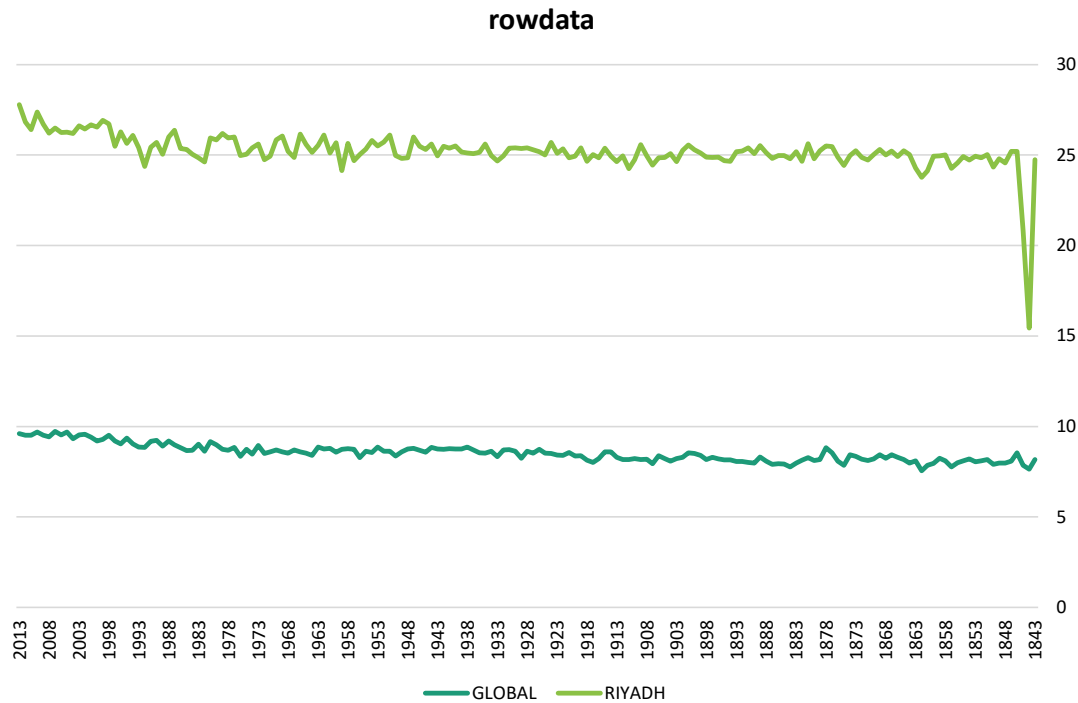


## Descriptive statistics

*	n	mean	Standard Error	Median	Range	Minimum	Maximum
global	266	8.37	0.04	8.38	4.05	5.78	9.83
Riyadh	169	25.21	0.08	25.15	12.33	15.45	27.78



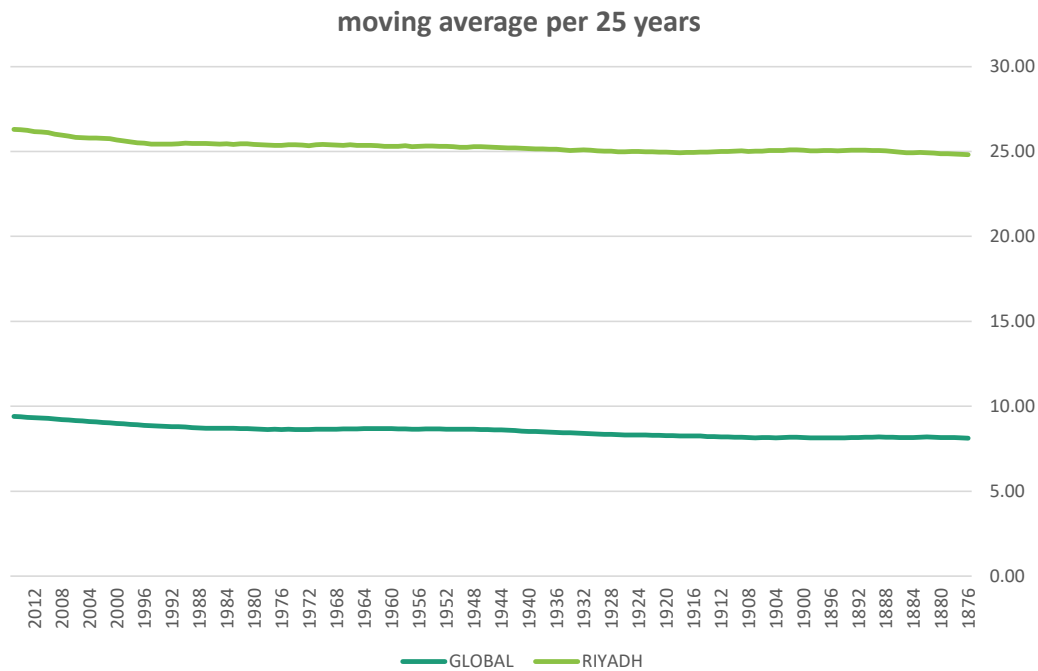
## Row data



- It shown that the graph is affected by outliers and losing solutions with missing values.



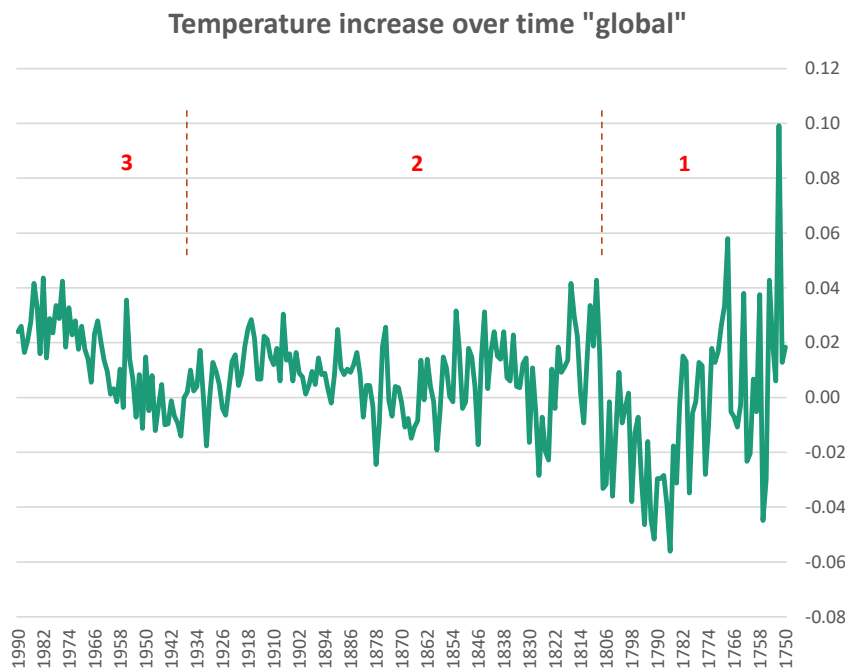
# Moving average per 25 years



- Using a moving average, the data is more clear and less affected by outliers as well as missing data.
- The average of local temperature is higher than the global temperature because Riyadh located on the desert.
- The range of local temperature was higher than the global temperature with 12.33 when the global was 4.05



# Temperature increase over time “global”



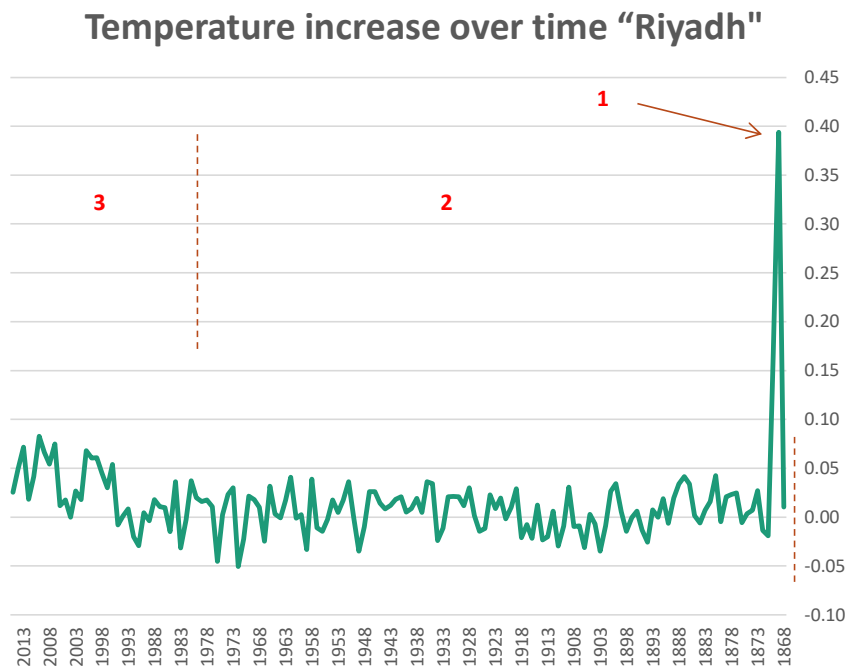
From the graph we find that:

- The data for the years referred to by number 1 is more volatile than other years, and this may require examining the reasons for this, which may be that the temperature devices were not accurate at that time.
- The stability of the data for the years referred to in No. 2 with less variation than the previous period.
- we can predict on figure 3, the temperature will be higher worldwide.





# Temperature increase over time “Riyadh”

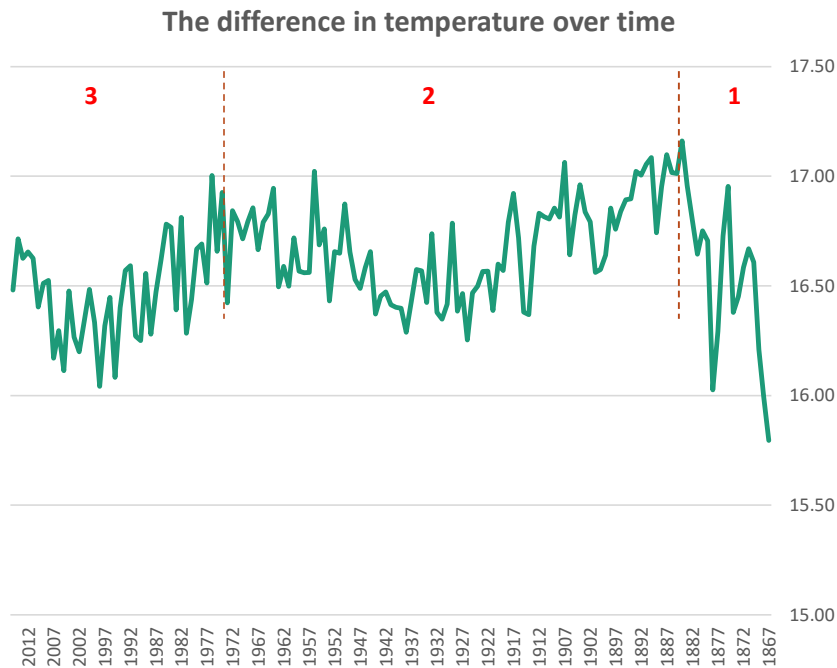


The line chart shown that:

- ❖ The data referred to as number (1) shows how the anomalous temperature on 1844 with (15.45) effected on the graph.
- ❖ The data is relatively stable with a slight increase over time.
- ❖ we can predict on figure 3, the temperature will be higher on Riyadh.



# The difference in temperature over time



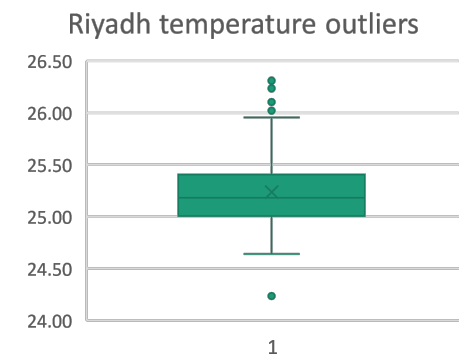
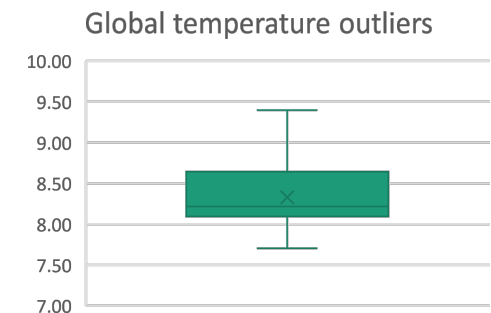
From the graph we find that.

- ❖ The data referred to by number (1) show a huge variance if we compare it with other period of time.
- ❖ The data referred to as number (2) show less variation in recent years, so the stability of the difference between global and local temperatures, giving a positive perception of the improvement in the accuracy of measuring devices with the passage.
- ❖ last 50 years, the gap of temperatures had been more closer between Riyadh and Worldwide.



# Differences

- ❖ Riyadh located on desert area when some of other cities located near to North Pole or South Pole.
- ❖ in general, the temperature in the last 70 years was increase with comparing with whole period, which was the local climb to 0.95% and the global rocket to 3.76%.
- ❖ There were different between local and global range. The local range was (12.33) and the global (4.05).
- ❖ using a moving average per each 25 years of the data of temperatures, the global didn't contain anomalous value, while the local has outliers.





## Similarity

- ❖ All temperatures were increasing with the passage of time.
- ❖ The observed increase in global and local temperatures during the last (30) year.
- ❖ there were high variance on the first years on the both side.
- ❖ the means were close to the medians on locally and globally.