



Exploring Weather Trends

During the past few decades the topic of climate change has received ample attention in the scientific, public and political arenas. Over the past century, for example the global average temperature has risen 0.85°C ,¹ with the strongest impact felt disproportionately in the Arctic region.^{2,3} Across the United States, the average temperature has increased about 1°C since 1895, with the majority coming since 1970, and the rate of the rise has been increasing over that time.⁴ Rising temperatures have ushered in greater evaporation rates, giving rise to an overall increase in land-based precipitation in the mid-latitudes,¹ though with much greater spatial variability than the changes generally noted with temperature⁽¹⁾.

In this project I will analyze the temperature of Wellington city - New Zealand- and the temperature of the global over more than 100 years by calculate the moving average then and compare between them.

step 1 :

Extract the data from the database using SQL.

1- Extract the average temperatures for Wellington by year (°C)

Input

SCHHEMA

city_data

city_list

global_data

```
1 SELECT*
2 FROM city_data where city='Wellington'
```

Success!

EVALUATE

Output 161 results

Download CSV

year	city	country	avg_temp
1853	Wellington	New Zealand	11.21

2- Extract the average global temperatures by year (°C).

Input

SCHHEMA

city_data

city_list

global_data

```
1 SELECT*
2 FROM global_data
```

Success!

EVALUATE

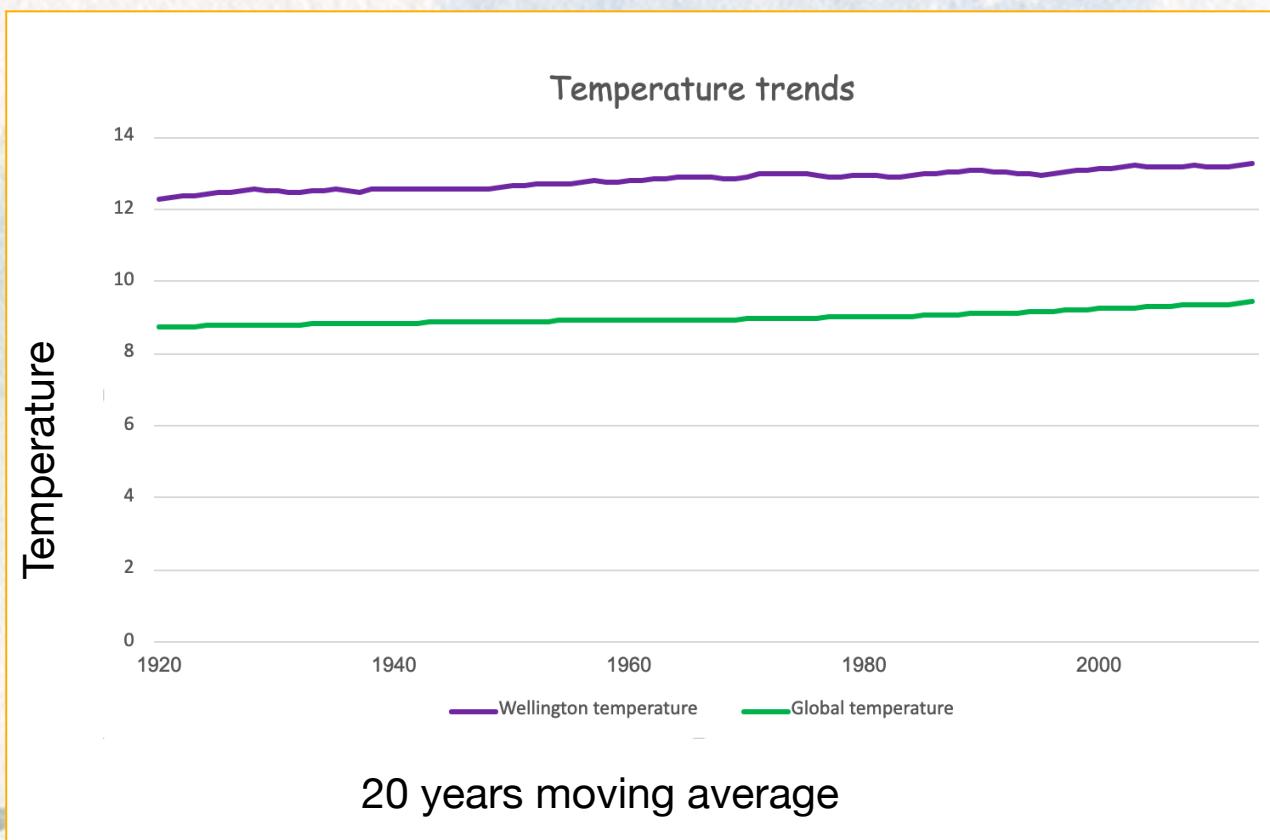
Output 266 results

Download CSV

year	avg_temp
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Step 2:

calculate the moving average for the data using Excel.
Here I calculated the moving average of 20 years,
starting from 1920.



step 3:

Observation of similarities and differences in the temperature of Wellington and the world.

similarities:

- Wellington temperature and global temperature change at a fairly stable rate over the years.
- Wellington temperature and global temperature have been rising steadily over the years

differences:

- Wellington temperature has been higher than the global average over the years.
- The global average temperature has been increasing faster than the Wellington over the years.

Then, according to the graph and observations, we conclude that the global temperature is increasing with the passage of time



FINALLY...

When It is December 30th while someone prepares to take out his diary and write in it how sunny, warm, and beautiful this day was in Wellington..

At the same moment, thousands of miles away, specifically in Madrid,

someone else would have written how snowy and cold this day was and they hadn't

seen the sunlight for a few days...and how it's gloomy that was! ! It's the spatial dimension Which led to the difference in the weather at the same moment.. that makes a difference for us even in our little diary.



Reference

(1) <https://www.nature.com/articles/s41612-018-0051-7>