UDACITY

< Return to Classroom

Explore Weather Trends

REVIEW

HISTORY

Meets Specifications

Congratulations 🎓

You've made it!!
This is a fantastic submission!

You used the SQL queries to extract the data and did an excellent job of systematically exploring it by calculating moving averages and then coming up with some interesting findings. I've really liked the way you've structured your project!

Be a lifelong learner.
Stay Safe and Stay Udacious!

Study Drills

1. Try implementing the same now using python, numpy and pandas library. You will learn all about basic data analysis via code in your next module involving project `Investigate a Dataset`
2. Select your top 5 cities around the world (or the cities in your travel bucket list 😍) and plot their graphs simultaneous to the global averages and see how the tempratures in your favorite cities is varying.
3. You can check the correlation coefficient among average temperatures of global and local temperatures and do some linear regression on the same. You can read on how to perform linear regression in Excel here

Further Readings for the curious YOU:
Ultimate Guide To Data Analysis with Excel

Excel Tricks for Data Analysis
Value of Exploratory Data Analysis
Why Exploratory Data Analysis is important

Analysis

- The SQL query used to extract the data is included.
- The query runs without error and pulls the intended data.

Great work here in extracting the data for your local city and comparing that to global temperatures. Your queries were spot on!

If you're interested in bolstering your SQL mastery with more questions and puzzles, here are a couple websites I often enjoy to looking for extra coding practice for SQL:

https://www.hackerrank.com/domains/sql/select
https://lagunita.stanford.edu/courses/DB/SQL/SelfPaced/courseware/ch-sql/seq-vid-introduction_to_sql/

You'll get a chance to practice increasingly difficult questions and learn how to interact with multiple tables at once.

As an example, here is another way to get the data that you want for both a city (e.g. Hanoi) and Global while excluding the empty years in one table output with moving averages calculated from the SQL query!

```
SELECT g.year, c.city, g.avg_temp global_avg_temp, c.avg_temp city_avg_temp,
AVG(g.avg_temp)
OVER(ORDER BY g.year ROWS BETWEEN 5 PRECEDING AND CURRENT ROW) AS global_temp_moving
_avg,
AVG(c.avg_temp)
OVER(ORDER BY g.year ROWS BETWEEN 5 PRECEDING AND CURRENT ROW) AS city_temp_moving_a
vg
FROM global_data g
JOIN city_data c
ON c.year = g.year
WHERE c.city = 'Hanoi'
```

Moving averages are calculated to be used in the line chart.

Excellent work here in calculating the moving average for both your city and Global temperatures.

Just one suggestion: Try to play with different window while calculating Moving Averages and then plot their graph observing how the graph changes for higher/lower windows.

One thing that came into my mind is data usually in Data Analysis, in situations like that, you may face missing data issues. There are several ways to deal with it. If you're interested in learning more, here's a link to a blog that details a number of techniques we can use when dealing with missing data. I encourage you to check it out in your free time!

https://www.iriseekhout.com/missing-data/missing-data-methods/

- **A line chart is included in the submission.**
- **The chart and its axes have titles, and there's a clear legend (if applicable).**

The line chart included in your submission looks fantastic! The chart contains a clearly represented title that explains the details of the presented line graph. It also includes a well place legend, intuitive axis labels and clear tick labels.

One of the most important steps in creating an impactful visualization is making sure all of its elements are labeled appropriately. The text components of a graph give your reader visual clues that help your data tell a story and should allow your graph to stand alone, outside of any supporting narrative.

- **The student includes four observations about their provided data visualization.**
- **The four observations are accurate.**

Well done coming up with four summary insights from your moving average data series generated previously. The results of your observations align well with the plot, and you've given accurate output consistent with the data

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