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DATA 3320
Professor Egan
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Seattle and New York Precipitation Report

1. Introduction

The purpose of this report is to investigate whether it rains more in Seattle or New York City and communicate those results to Professor Egan's family. This weather information would help them decide whether to visit Seattle. This data comes from the National Oceanic and Atmospheric Administration (NOAA) which works to understand climate and weather. The data was found using NOAA's climate data online search tool which can be found here:

<https://www.ncei.noaa.gov/cdo-web/search?datasetid=GHCND>. Questions about the data that can help solve this larger problem are what is the average rainfall for each city, how frequently does it rain in each city and does rainfall vary greatly month-month or year-over-year?

2. Methodology and Analysis

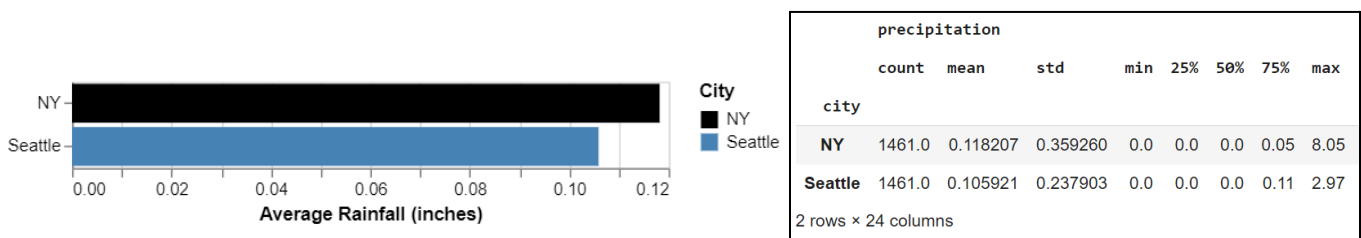


Figure 1: Central Tendency Values of Precipitation

This chart was created by separating the data between cities and then plotting the average precipitation from all days in the dataset. Examining the measures of central tendency for the data can provide valuable initial information. This chart gives us a visual representation of a single value from the table above. From the figure displayed above it's evident that the average precipitation is higher in New York City (0.118) than in Seattle (0.105). This tells us that on any given day it is more likely to rain in New York than in Seattle.

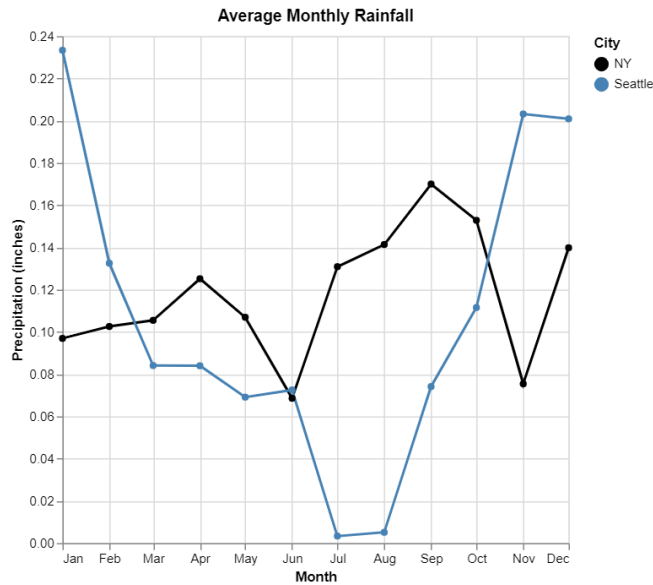


Figure 2: Comparing Average Monthly Rainfall

This chart looks at the average monthly rainfall for both cities. Identifying seasonal trends in rainfall allows us to give a better recommendation to Professor Egan’s family than the overall average alone. Since Seattle has close to no rainfall between July and August that would be the best time to visit. However, visiting in December or January would likely lead to visitors experiencing rain and would not be the optimal time to visit.

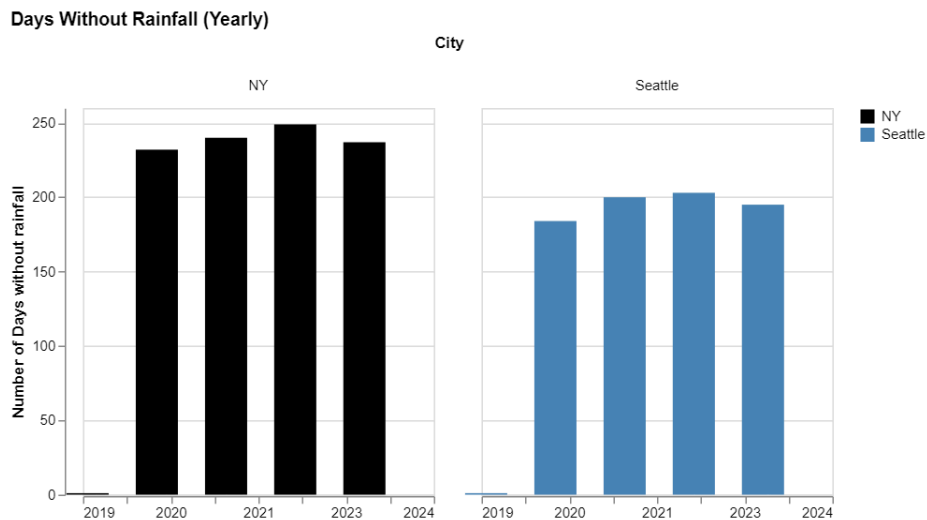


Figure 3: Days Without Rainfall year-over-year

This chart was created by filtering out days with precipitation over 0.00 and plotting the number of days left over for each city. The data was separated by year to see if there were any significant differences between annual rainfall. The chart shows that rainfall is fairly consistent

year over year for both cities. An important takeaway from this chart is that New York has more days without rainfall than Seattle despite having a higher average precipitation. This suggests that it rains harder but less often in New York.

3. Conclusion

Overall the findings within the data are that New York rains less often than Seattle but generally has higher precipitation on days when rainfall occurs. Looking at rainfall month-month however shows us that rainfall in Seattle is much lower than New York during the summer months (July-August) and if Professor Egan's family wanted to visit him while avoiding the rain this would be the driest time.