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### The Seattle-St.Louis Weather Problem

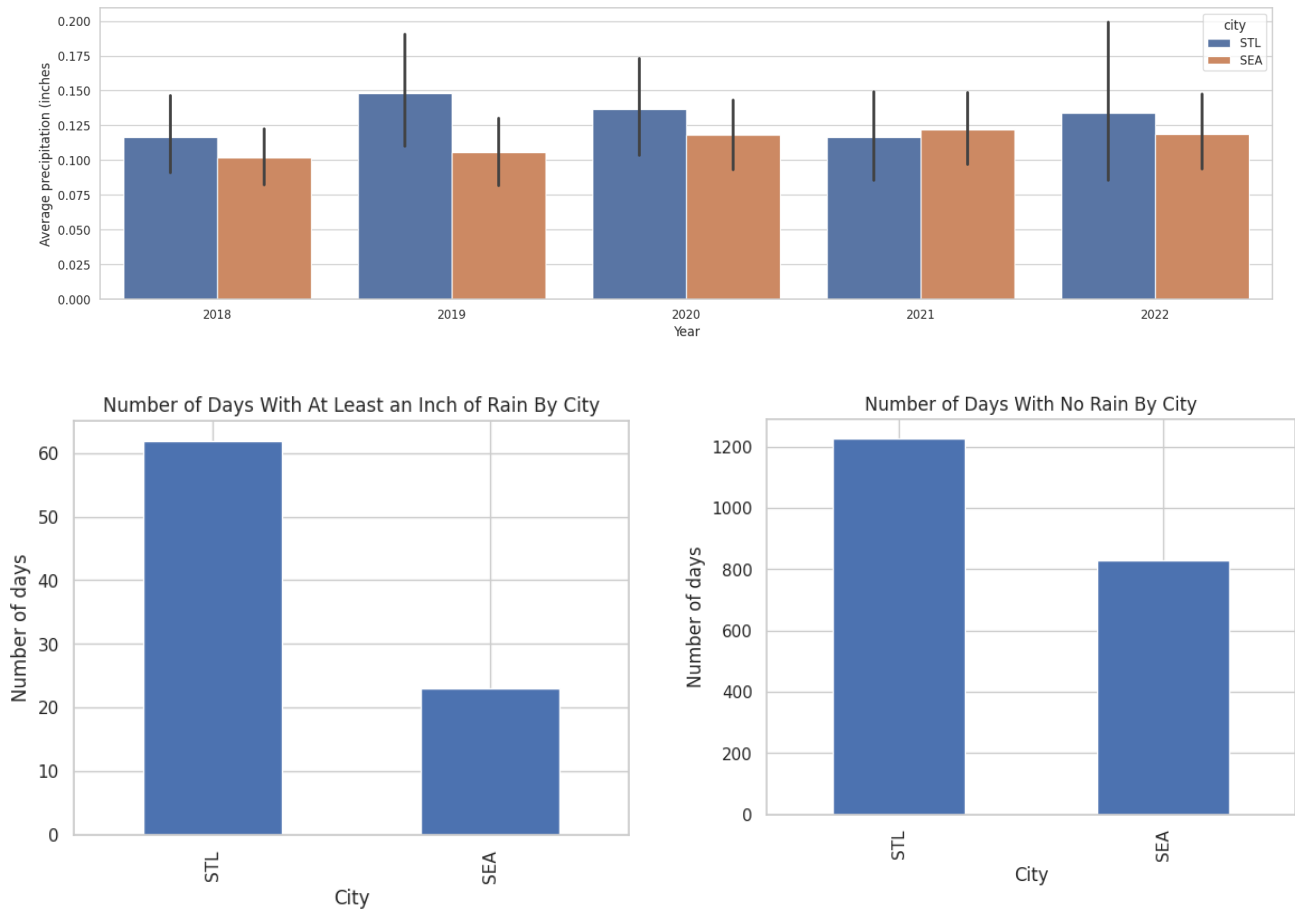
The problem at hand had to do with solving the question of whether it rains more in Seattle, WA where this class takes place or in St. Louis, MO where the professor's parents live. While the professor's parents think that it rains too much in Seattle, we set out to try and answer this question using real life data from both cities.

The data we used for this project came from The [NOAA](#), which allowed us to download files containing weather data for both Seattle and St. Louis. While the data itself contained multiple different recordings of different types, we were mainly focused on the precipitation column, which kept track of how much rain, in inches, was recorded at the different sites. After cleaning up the data so we had matching time frames and number of observations and filling in missing days with an average from that same day across the remaining years, we were left with a data frame documenting the precipitation amounts for both cities from the years 2018 to 2022.

To analyze the data, I first looked at the average precipitation from three different time perspectives, two of which created graphs of interest to answer this question. The first was on a monthly basis, which averaged the rainfall for each month over the 5 years for both cities. I also looked at the average rainfall from a yearly perspective, which further solidified the findings from the monthly perspective. I also wanted to look at the number of days with a considerable amount of rain versus days with no rain. I chose a considerable amount of rain to be any day with at least an inch of rain recorded.

From my analysis of the data, I produced the following graphs. The first graph shows that throughout the five years, St. Louis received a higher average rainfall for four of those years. The second and third graphs show that while St. Louis recorded more days with no precipitation, it

also recorded more days with at least an inch of rain or more recorded. This led me to believe that while it may rain slightly more days out of the year in Seattle, it rains more heavily in St. Louis.



After analyzing this data, I have come to the conclusion that it rains more in St. Louis than in Seattle. While in a calendar year Seattle may document more days with precipitation of any amount, it seems that the slightly less often amount of days that it rains in St. Louis, the amount of precipitation is larger than in Seattle. The question was not whether it rains more *often* in one city, but more generalized to if it rains more in one city versus the other. So while you might see rain clouds in Seattle more often than in St. Louis, chances are you'll be more regretful of not grabbing your raincoat in St. Louis when it starts to really rain, and not just sprinkle.