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DATA 3320 01

Dr. Brian Fischer

Does Seattle or St. Louis Receive More Rain?

Introduction

The original problem stems from Dr. Brian Fischer's parents believing that it rains too much in Seattle, Washington. Since they live in St. Louis, Missouri I wanted to investigate which city receives more rain.

Data Used

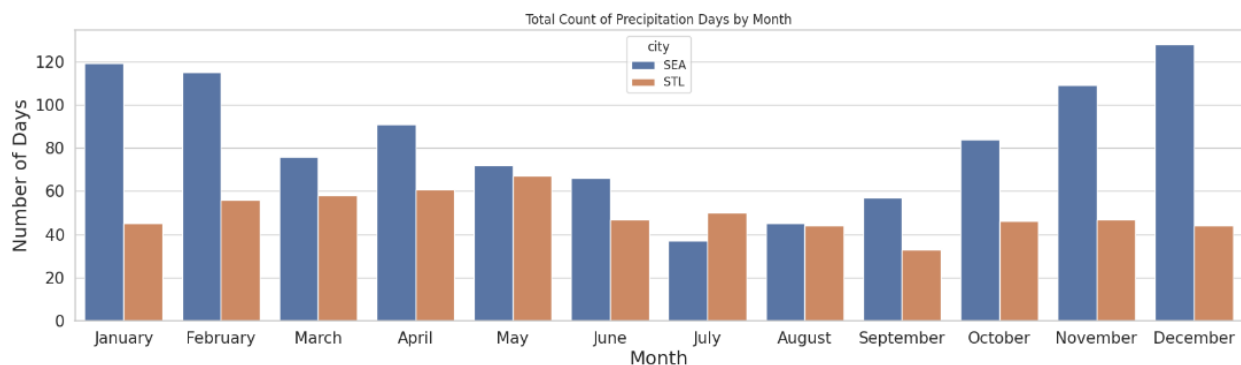
I used two data sets from the National Centers for Environmental Information located at [NOAA Climate Data](#). The [first data set](#) showcases values like daily precipitation in Seattle from 2018-2022, the [second data set](#) also showcases data like daily precipitation but in St. Louis from 2017-2022.

Analysis Methods

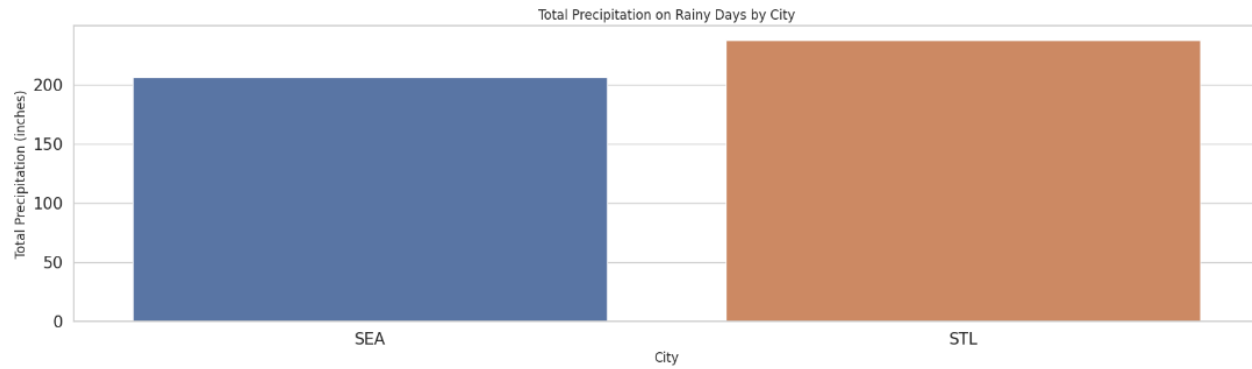
When looking at the clean data set the biggest question that I needed to answer was what does it mean by "more rain"? We have a precipitation value that shows how much it rained in inches per day from 2018-2022 after cleaning up the data into a [prepared data set](#) where you can see the steps to clean the data [here](#). So, to define more rain, I look at it two different ways. The first is the total number of days that it rains, and the second is the total amount of rain from the days that it rained.

So, to now answer this question, I needed to graph the data to visualize which city correlates to which definition of rain or maybe even both definitions. I created three different visualizations where I will walk through why I created it and what resulted from it.

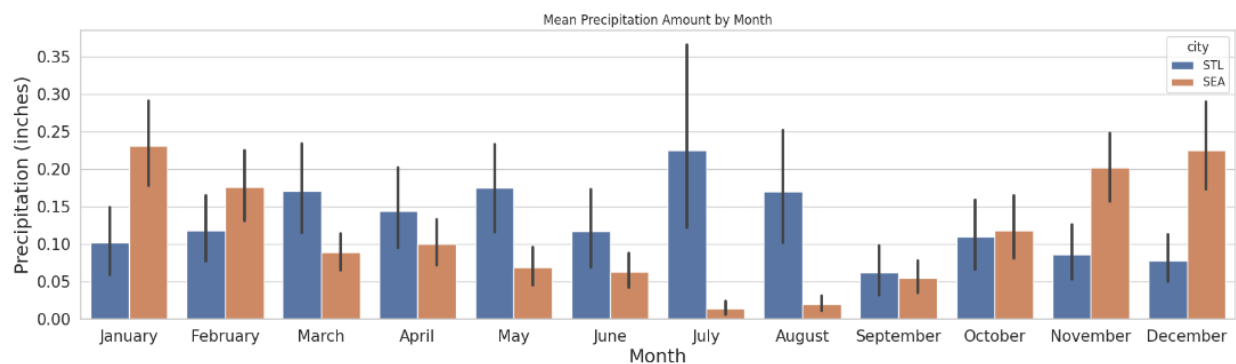
The first plot was created in hopes of seeing a total count of days that it rained by month. I ended up finding the sum of days that it rained from 2018-2022 for both Seattle and St. Louis and then visually split it up by the 12 months.



I now wanted to see the total amount of rain that happened in each city from the days that it did rain. So, I took the sum of precipitation values from 2018-2022 when rain occurred and showed the total value for both Seattle and St. Louis.



Finally, to solidify my findings I wanted to see the average amount of rain by month for both Seattle and St. Louis from 2018-2022.



Results

The results from plot one showcased that it rained more days in Seattle for every month between 2018 and 2022 other than July. July was the only month where St. Louis received more days where it rained. The results from plot two showcased that St. Louis had approximately 40 more total inches of rain between 2018-2022 from the days that it did rain, even though Seattle had more total rainy days. The results from plot three reinforced the results from plot two where it rained on average more from the months of March-September which is 7 out of 12 total months in St. Louis from the days that had rain.

Conclusion

In conclusion, from analyzing all the plots I created it seems that based on my definition of “more rain”, St. Louis and Seattle fall under one of the two categories I defined. My findings show that Seattle has a total of more days where it rained throughout 2018-2022, but St. Louis had more precipitation in total from the days that had rain from 2018-2022.