

Comparing Precipitation in Seattle and St. Louis

Introduction

The overarching question is: does it rain more in Seattle, WA or St. Louis, MO? We will use methodologies of data science to go from raw data as it was collected to more specific figures and values that can help us answer the question.

Data

The data used came from the NOAA National Centers for Environmental Information's daily measurements of precipitation (in inches). We used the measurements for Seattle, WA and St. Louis, MO from 2018-2022.

For any days without measurements, the average rainfall on the same day from the other years was used.

After cleaning up the raw data, the result was a table of amounts of rainfall for each day from 2018-2022 for both Seattle and St. Louis.

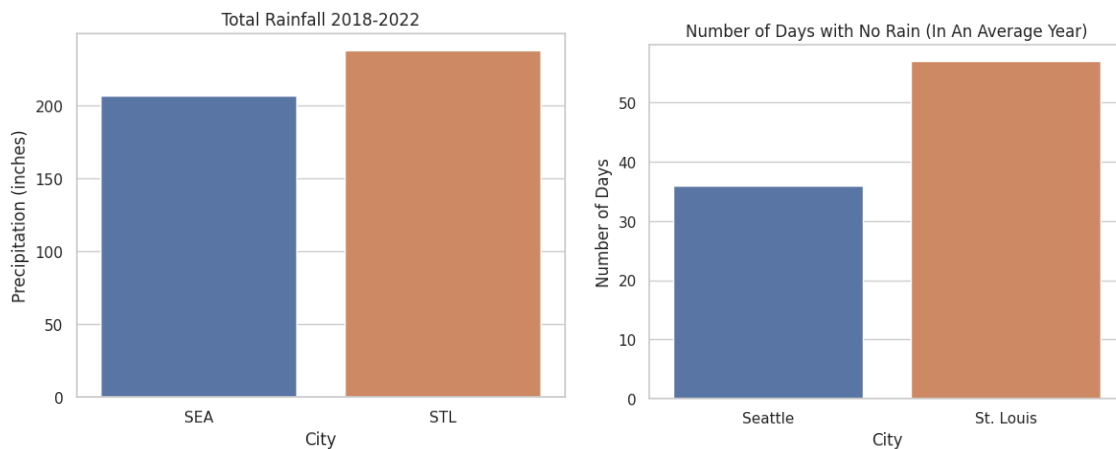
Data Analysis Methods

To answer the overarching question, sub-questions were derived to guide the data analysis. The sub-questions were:

- Where does it rain more by volume?
- Which city has more rainy days than non-rainy days?
- What city has more heavy rain days?

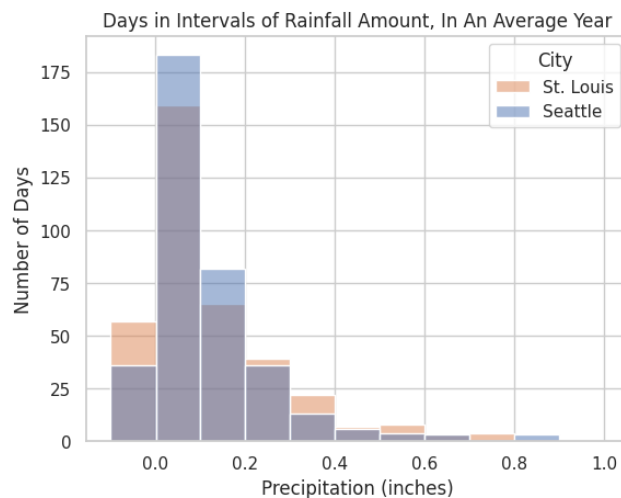
To answer these questions, the cleaned-up data was used to find amounts of rain over the years and volume, the number of days it did not rain in each city, etc. Graphs were constructed based on these data sets.

Results



Based on the left graph above. St. Louis had more inches of rain observed over 2018-2022.

The right graph above shows that, in an average year St. Louis will have a considerably higher number of days without rain compared to Seattle.



Based on the graph above, in an average year, Seattle will have fewer non rainy days and more days with very little rain (0.001-0.2). In the higher intervals, it is pretty split between the two cities on which has more days with that amount. With this visualization, we can support the conclusion that often when it does rain, it rains very little in both Seattle and St. Louis, with Seattle more often raining very little when it rains.

In conclusion, if you are most concerned with volume, St. Louis rains more by amount in general and it tends to rain in higher amounts when it does rain.

If you are most concerned with the number of rainy days, Seattle has more rainy days versus days it does not.

Overall, it rains more days in Seattle, but those tend to be days with a low amount of rain. There are more non-rainy days in St. Louis, but it tends to rain more when it does rain compared to Seattle.