

SEATTLE VS ST. LOUIS RAIN FALL

DATA METHODOLOGY

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INTRODUCTION

Rainfall, or precipitation, is a fundamental component of the Earth's climate system, influencing various aspects of the environment, such as agriculture, water resources, and urban infrastructure. Understanding patterns of rainfall and comparing them across different regions is important for studying regional climate dynamics and impacts. In this report, we investigate the rainfall patterns in two major cities in the United States, Seattle and St. Louis, and compare their precipitation data to determine if one city receives more rainfall than the other.

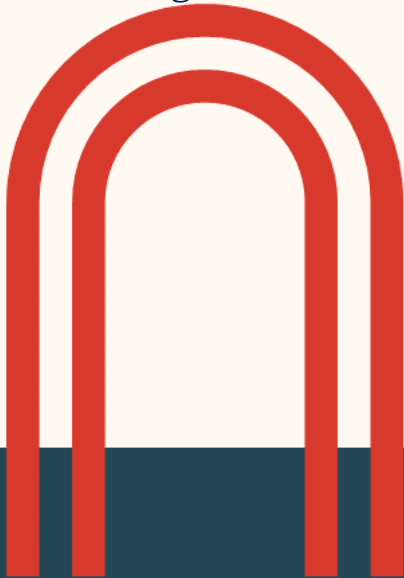
The cities of Seattle, located in the Pacific Northwest, and St. Louis, located in the Midwest, represent two distinct regions with different climates. Seattle is known for its reputation as a rainy city, with frequent precipitation throughout the year, while St. Louis experiences a more moderate continental climate with distinct seasons.

We aim to determine if there are any significant differences in precipitation patterns and to identify which city receives more rainfall on average. The data used in this report was collected and cleaned as part of a comprehensive analysis. We utilized various methods and demographics to come up with plots and charts, to analyze the rainfall data and draw meaningful conclusions. The report presents the findings from the data analysis and discusses the implications of the results in the context of Seattle and St. Louis.

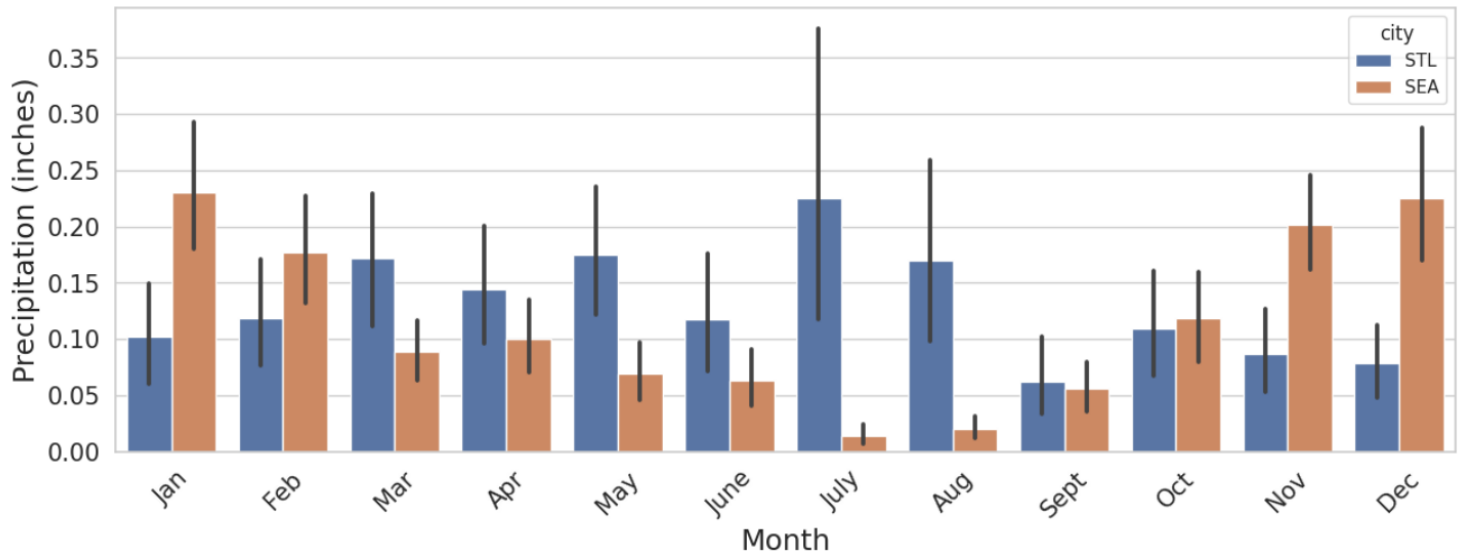
METHODOLOGY

To ensure the accuracy and reliability of the final analysis, a thorough and organized approach was taken in preparing and analyzing the data. The data preparation phase involved several specific steps aimed at improving the quality and relevance of the data. Firstly, the data types were converted to a format suitable for analysis, ensuring consistency and coherence across the entire dataset. Relevant subsets were then selected, and unnecessary parts of the data were removed to reduce noise and improve signal-to-noise ratio. Furthermore, NaN/missing values were identified and dealt with in a comprehensive manner, to ensure that no data points were lost or distorted. The two sets of data were then merged, and the columns were renamed to enhance clarity and facilitate analysis. Finally, derived variables were created to provide additional insights into the data and help inform the final analysis. This approach ensured that the data was in the best possible shape for analysis, allowing for robust conclusions to be drawn.

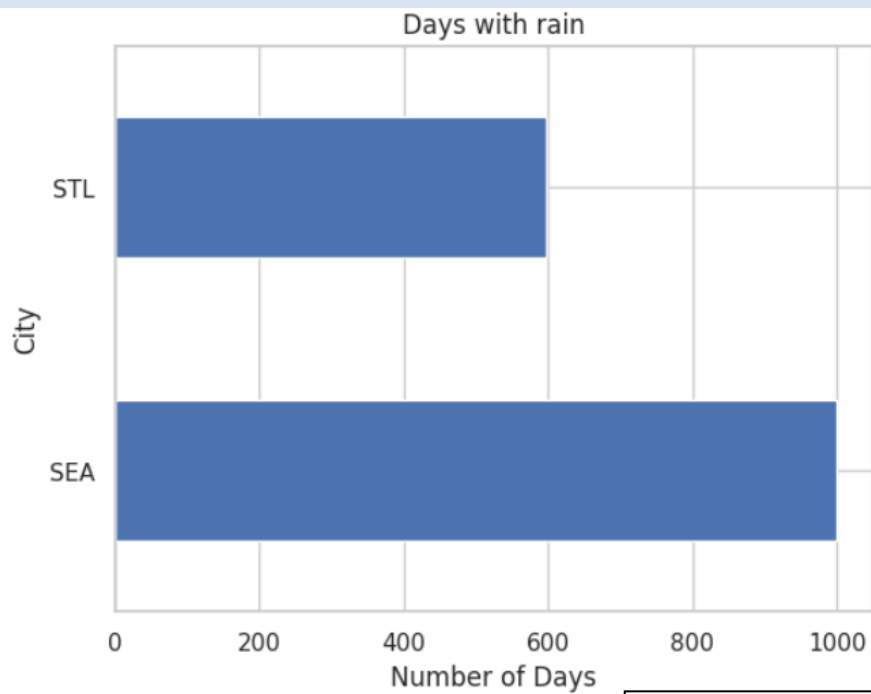
During the analysis phase, specific steps were taken to break the problem into smaller subproblems, making it easier to identify trends and patterns in the data. Plots were created to visualize these subproblems, providing a clear and concise overview of the data. To ensure that the plots were meaningful and informative, labels and descriptions were added, providing context and aiding interpretation. To further enhance the analysis, a new dataset was created called `df_more`, which limited the range for precipitation, enabling more accurate and precise insights into the data.



VISUAL DATA



Plot 5.1



Plot 5.2

CONCLUSION

The analysis of the aggregated and cleaned data sets shows that there is a notable difference in the rainfall patterns between Seattle and St. Louis.

While Seattle experiences more rainy days, St. Louis has a higher volume of rainfall. This dichotomy between Quality and Quantity of rainfall presents an interesting contrast. It is important to note that these findings are based on the available data sets and the analysis conducted.

Visualization 5.2 depicts a clear contrast between the number of rainy days in each city. The graph illustrates that Seattle has a higher frequency of rainy days than St. Louis. On the other hand, Visualization 5.1 shows the distribution of rainfall in both cities across different months. This visualization highlights that St. Louis receives a higher volume of total rainfall as compared to Seattle. Therefore, we can conclude that while Seattle has more rainy days, St. Louis experiences a greater overall amount of rainfall.