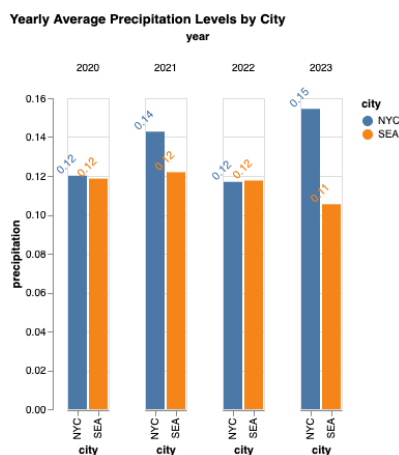


Comparison between Seattle and New York City precipitation levels

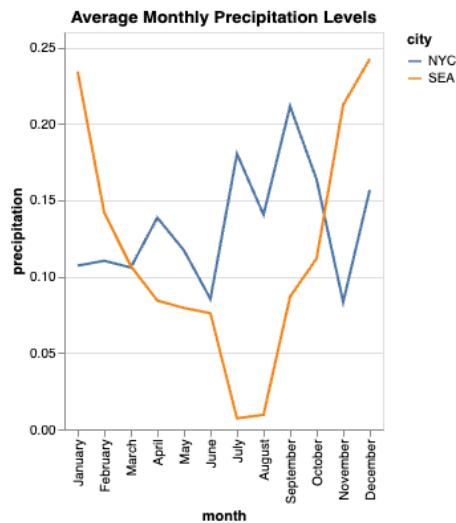
The goal of this analysis of Seattle and New York City's precipitation levels was to help Dr. Egan convince his family to come visit him in Seattle. Since the biggest thing stopping them is the fact that they believe it rains too much in Seattle. Seeing that Dr. Egan is a data scientist, he wanted to do this through statistical analysis. So, he downloaded weather data for Seattle and New York City from [National Centers for Environmental Information's](#) online search tool.

To fully analyze the problem we broke it down into these questions: On average does Seattle or New York City rain more? In what months does Seattle rain more, and vice versa. To answer the first question a bar graph was created by taking the average precipitation levels of each year. To do this we had to make sure the date column was in a date-time data type so that we could extrapolate the year from that column. Then we used the mean() function and calculated the mean for every year and every city, which in this case is just Seattle and New York City. Pandas knew which rows of data belonged to which year and city because we used a groupby function which groups those rows together. This resulted in the chart shown titled, "Yearly Average Precipitation Levels by City."



To answer the question, in what months does Seattle rain more, and vice versa. A line chart was created to showcase this. To prepare the dataset to be able to plot this a similar process as above was used by first using groupby to group the rows that were within the same month for each city. Then using the mean function to calculate the

mean or average of those rows. This resulted in the table titled, “Average Monthly Precipitation Levels.”



After a thorough analysis of the data we can see that the annual average rainfall In New York City is actually exactly the same or higher than Seattle. However, when taking a look at the monthly averages we see that from October to March the average rainfall level in Seattle is much higher than New York City. Therefore, if Dr. Egan’s parents were to visit and want to avoid Seattle’s rain and escape New York City’s rain, they should come between March and October.