New York - Airbnb Data Analysis

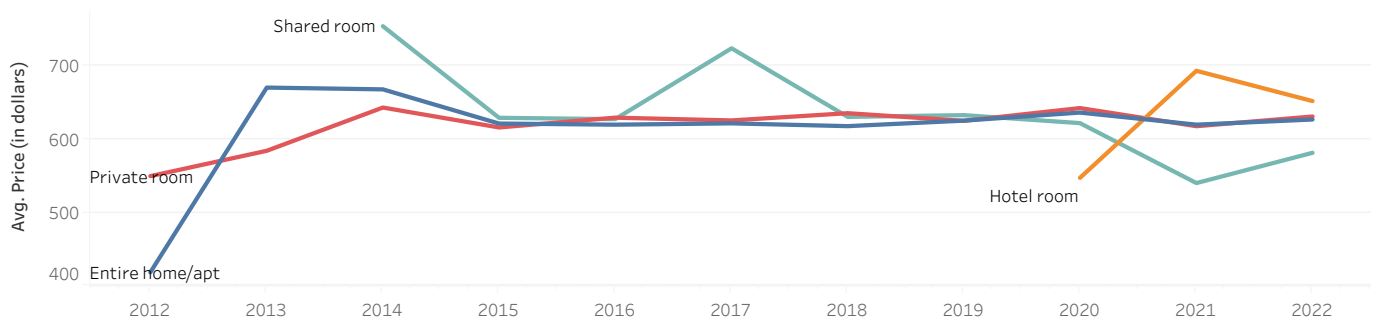## A. Airbnb properties listed in different neighborhoods in NYC

B. Top 5 Neighborhoods with Higher Average Price in NYC
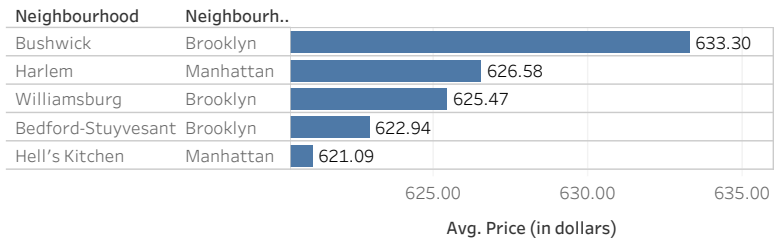
C. Average Price trends for different room types year-wise

The story provides insights on the New York Airbnb data. The first dashboard provides Airbnb exploratory data analysis for the entire New York.

Plot A: The bar graph illustrates the number of Airbnb properties listed in each New York borough. Manhattan has the highest number of properties, followed by Brooklyn, Queens, the Bronx, and Staten Island. The variables in the order of importance are "Neighborhood Group" and "Number of Airbnb properties". The nominal variable "Neighborhood Group" and the quantitative variable "Number of Airbnb properties" are prioritized and given x and y position encoding, respectively. This graph's text encoding makes it simple to determine the number of Airbnb properties listed in a specific borough.
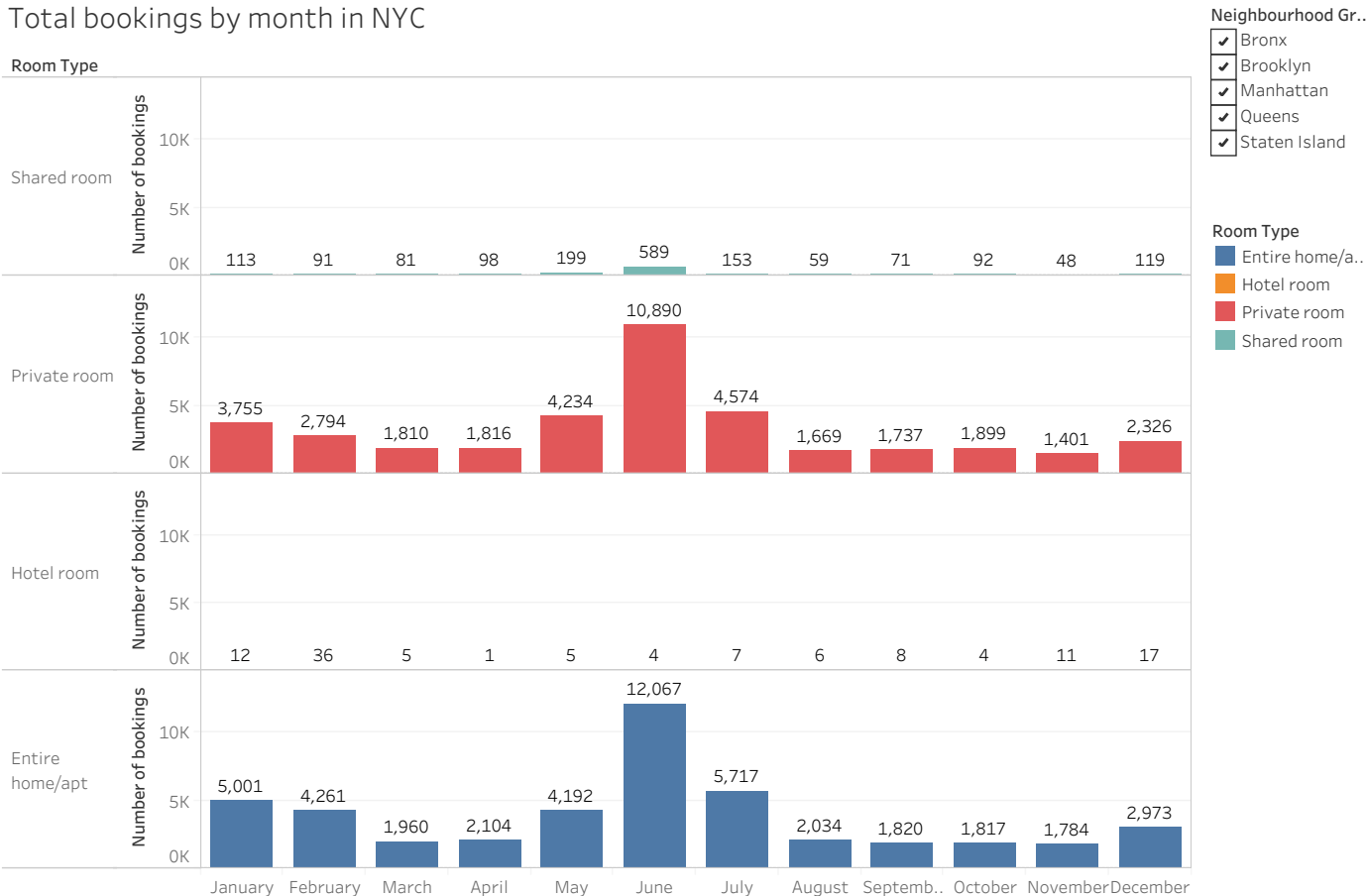
Plot B: The bar graph shows the top 5 neighborhoods with higher average prices in New York. The highest average price of $633.30 is observed in Bushwick. It can be observed that 2 neighborhoods with higher average prices are from the Manhattan borough and the 3 neighborhoods are from the Brooklyn borough. The variables in the order of importance are "Average price (in dollars)" and "Neighborhood". The quantitative variable "Average price (in dollars)" and the nominal variable "Neighborhood" are prioritized and given x and y position encoding, respectively. This graph's text encoding makes it simple to determine the average price of an Airbnb property in a specific Neighborhood.

Plot C: The multi-line graph displays the year-wise average pricing trends for different room types in New York. The variables in order of importance are "Year", "Average Price", and "Room type". The nominal variable "Year" and the quantitative variable "Average Price" are prioritized and given x and y position encoding, respectively. There are four categories for the "Room type" Nominal variable: Shared Room, Private Room, Entire home/apt, and Hotel room. Thus, the " Room type" variable is least prioritized and is encoded using a color channel. It is evident that the average price for "Entire home/apt" increased significantly between 2012 and 2013. It's also noticeable that there are no properties marked as "Hotel rooms" till 2020. The average price for "Hotel rooms" increased between 2020 and 2021, and then it decreased between 2021 and 2022. Currently, the average cost of a shared room, private room, entire house/apt, and hotel room is $581.87, $631.45, $627.36, and $652.51, respectively.

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Total bookings by month in NYC

Neighbourhood Gr..
- ☑ Bronx
- ☑ Brooklyn
- ☑ Manhattan
- ☑ Queens
- ☑ Staten Island

Room Type
- ■ Entire home/a..
- ■ Hotel room
- ■ Private room
- ■ Shared room

Room Type

Shared room
January	February	March	April	May	June	July	August	September	October	November	December
113	91	81	98	199	589	153	59	71	92	48	119

Private room
January	February	March	April	May	June	July	August	September	October	November	December
3,755	2,794	1,810	1,816	4,234	10,890	4,574	1,669	1,737	1,899	1,401	2,326

Hotel room
January	February	March	April	May	June	July	August	September	October	November	December
12	36	5	1	5	4	7	6	8	4	11	17

Entire home/apt
January	February	March	April	May	June	July	August	September	October	November	December
5,001	4,261	1,960	2,104	4,192	12,067	5,717	2,034	1,820	1,817	1,784	2,973

The total bookings by month in New York is demonstrated using a facetted bar graph. The variables in order of importance are "Month", "Number of bookings" and "Room Type". The nominal variable "Month" and the quantitative variable "Number of bookings" are prioritized and given x and y position encoding, respectively. There are four categories for the "Room type" Nominal variable: Shared Room, Private Room, Entire home/apt, and Hotel room. As a result, the " Room type" variable is least prioritized and is encoded using a color channel. The plot is facetted by the "Room type". Consequently, each subplot contains information about that specific "Room type", making it simpler to comprehend the total bookings by month for that specific room type. Additionally, color encoding is added for "Room type " to ensure that the story's color scheme is maintained. It can be observed that the number of bookings is higher in June and are least during November for most of the room types.
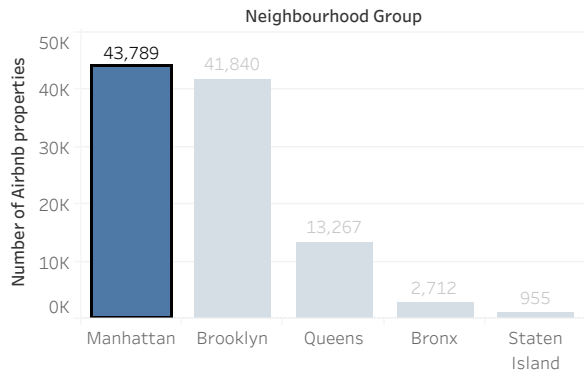
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A. Airbnb properties listed in different neighborhoods in NYC

Neighbourhood Group

B. Popular hosts

C. Average Price trends for different room types year-wise

The next three dashboards show the Airbnb data analysis for Manhattan, Brooklyn, and Queens, the top three boroughs with the highest number of Airbnb properties.
Plot A highlights the Airbnb properties listed in Manhattan and dynamically selects or filters the popular hosts in Manhattan and the yearly average pricing trends for different room types in the other two plots.
The scatterplot in **Plot B** shows the top 10 popular hosts in Manhattan. The variables in order of importance are "Number of Reviews", "Average Review Rating", and "Host Name". The quantitative variables "Number of Reviews" and "Average Review Rating" are prioritized and given x and y position encoding, respectively. The "Host Name" variable is the least prioritized and is encoded using a color channel. As a result, each "Host Name" now has its unique color. It can be observed that "Sonder (NYC)" is the popular host in the Manhattan borough.
Finally, **Plot C** shows the yearly average pricing trends for different room types from 2012 to 2022 in Manhattan. From 2012 to 2015, the average price fluctuated significantly, and after that, there was no noticeable rise or drop in price.
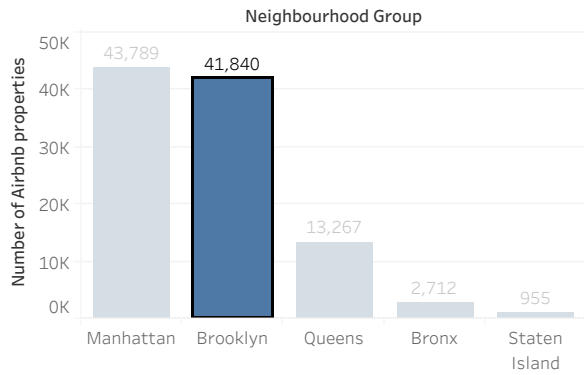
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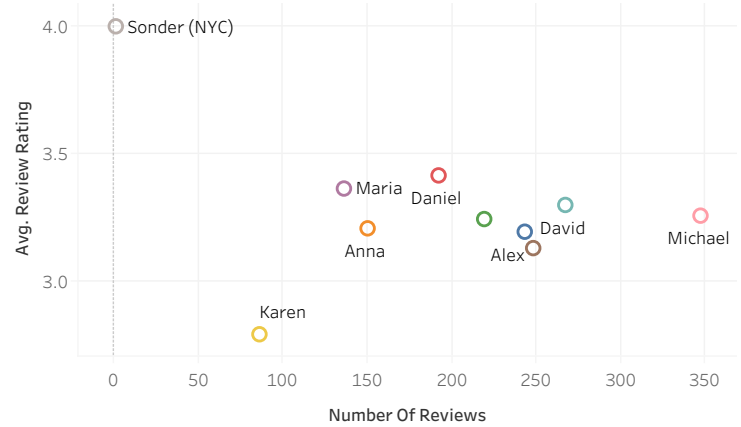
B. Popular hosts

C. Average Price trends for different room types year-wise
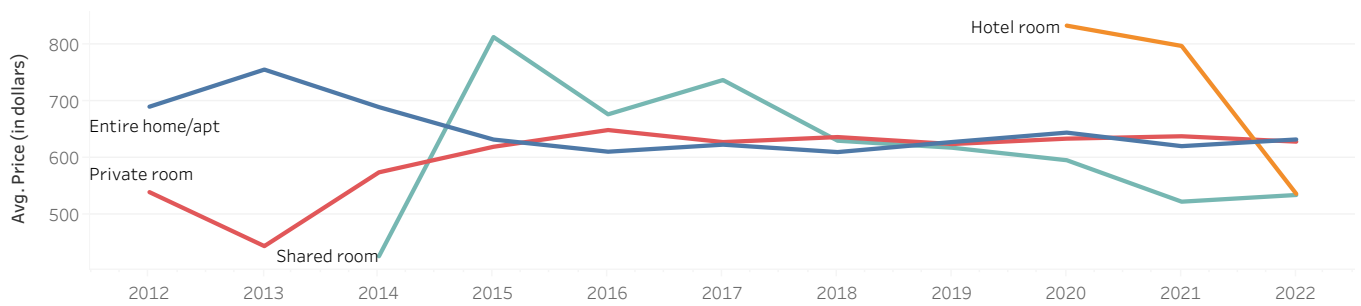
Plot A highlights the Airbnb properties listed in Brooklyn and dynamically selects or filters the popular hosts in Brooklyn and the yearly average pricing trends for different room types shown in the other two plots.

From the scatterplot in **Plot B**, it can be seen that if the number of reviews is considered then "Micheal" is the most popular host, and if the average review rating is considered then "Sonder (NYC)" is the most popular host.

The multi-line plot in **Plot C** shows the yearly average pricing trends for different room types from 2012 to 2022 in Brooklyn. It can be noted that currently there is a rapid drop in the prices of hotel rooms in the Brooklyn borough.
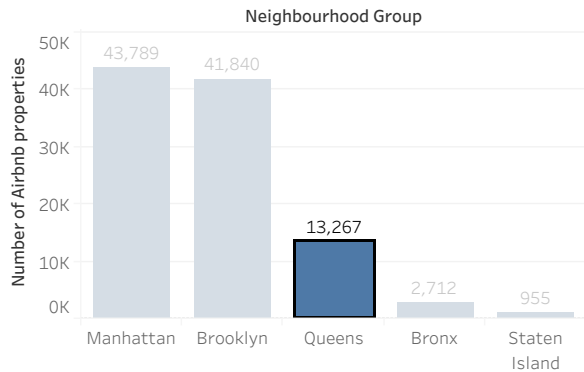
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Neighbourhood Group
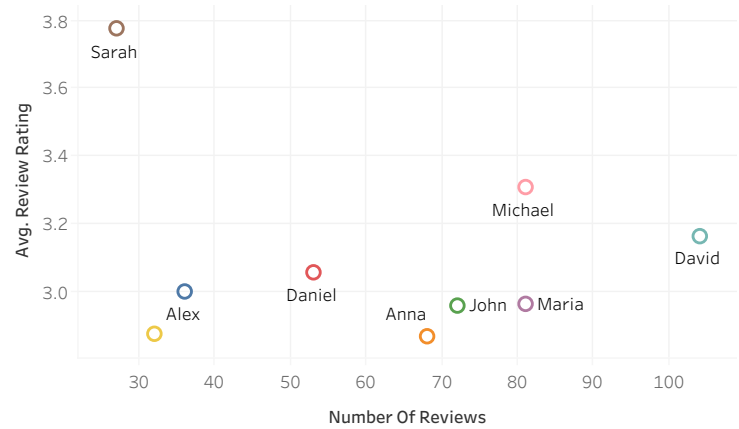
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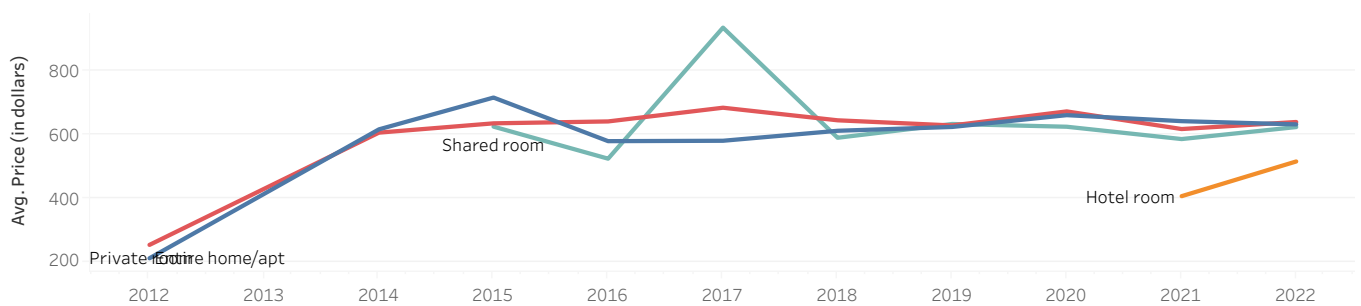
Plot A highlights the Airbnb properties listed in Queens and dynamically selects or filters the popular hosts in Queens and the yearly average pricing trends for different room types shown in the other two plots.

From the scatterplot in **Plot B**, it can be seen that if the number of reviews is considered then "David" is the most popular host, and if the average review rating is considered then "Sarah" is the most popular host.

The multi-line plot in **Plot C** shows the yearly average pricing trends for different room types from 2012 to 2022 in Queens. It can be noted that the prices were extremely low until 2012, and from 2012 to 2014 the prices have drastically increased. Prices after that typically fall between $500 and $650. In 2017, there was a notable increase in the price of "shared rooms". Again in 2018, the prices of shared rooms are similar to those of a "private room" or an "entire home/apt."