Airbnb 2019 Case Study

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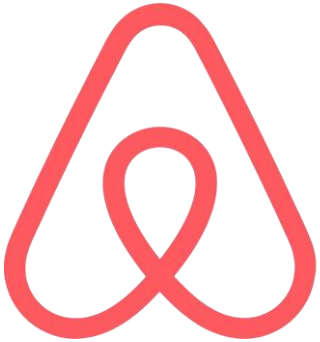
Case Study Understanding



Company

Airbnb is an online marketplace that connects homeowners with people looking for accommodations in specific locales.
Airbnb makes the bulk of its revenue by charging a service fee for each booking.

Problem statement

Airbnb saw a major decline in revenue as the number of bookings and travel activity dropped drastically.

Airbnb wants to make sure that it is fully prepared for this change.

Challenges deep-dive

Challenge 1

Business Understanding

The first step in our visualization project was to gain a clear understanding of the business problem and the objectives of the project.

Challenge 2

Data Wrangling

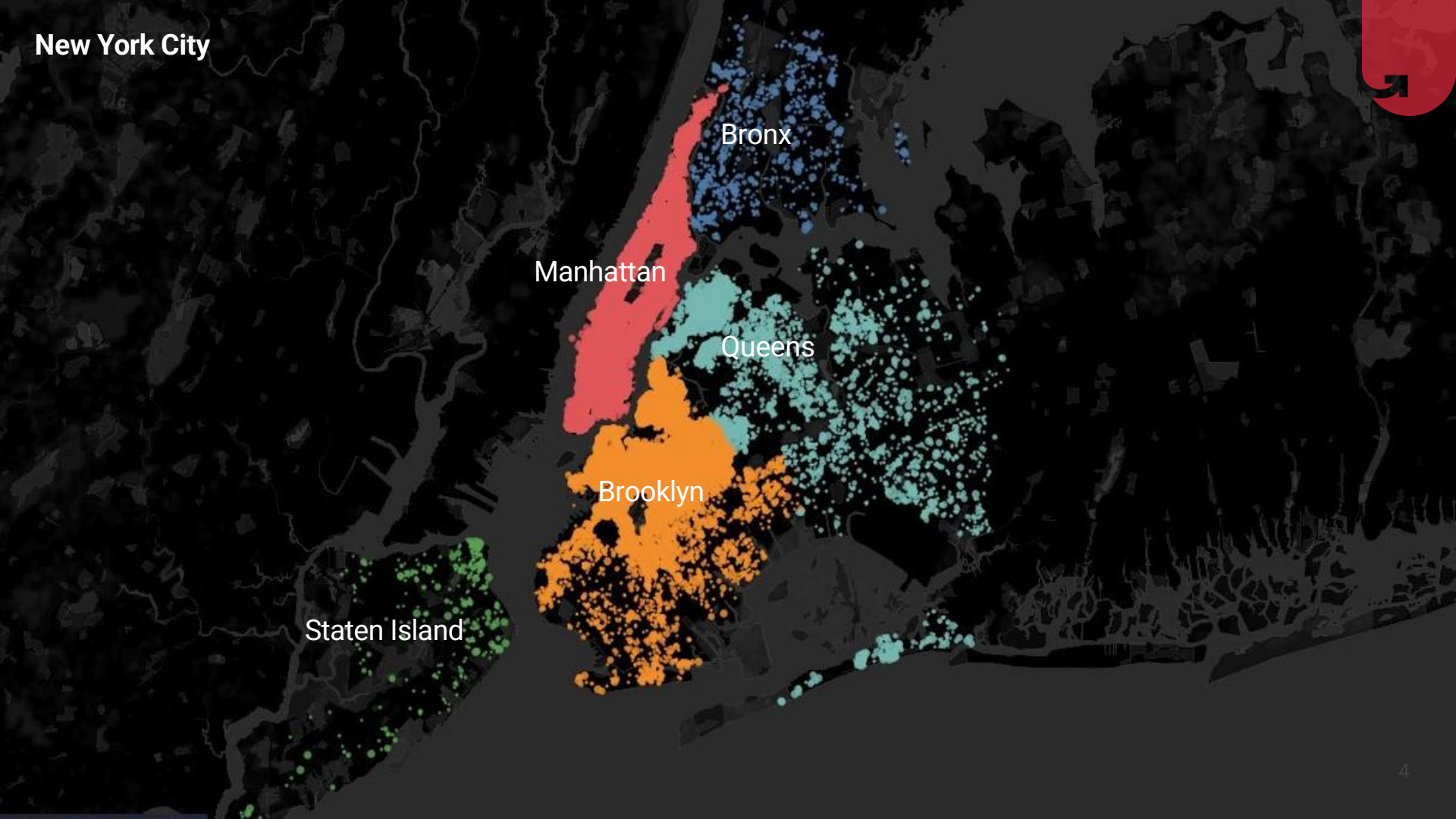
This involved collecting and exploring the dataset to gain a better understanding of the variables, data types, and distributions. We imported the data in Python for more clarity of the given data.

Challenge 3

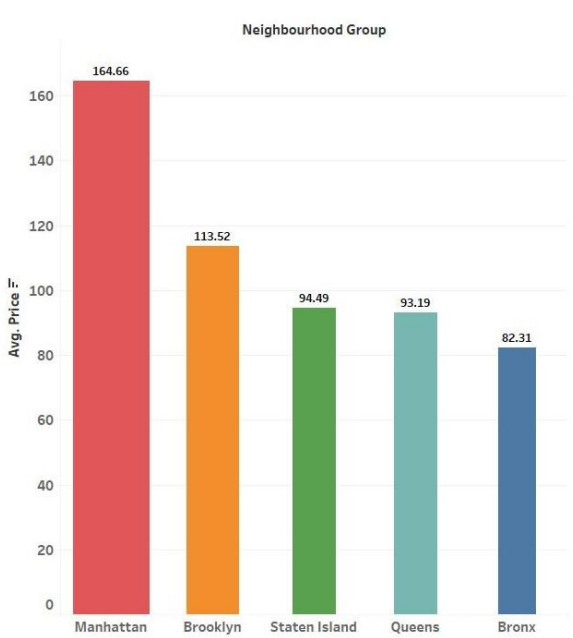
Visualization

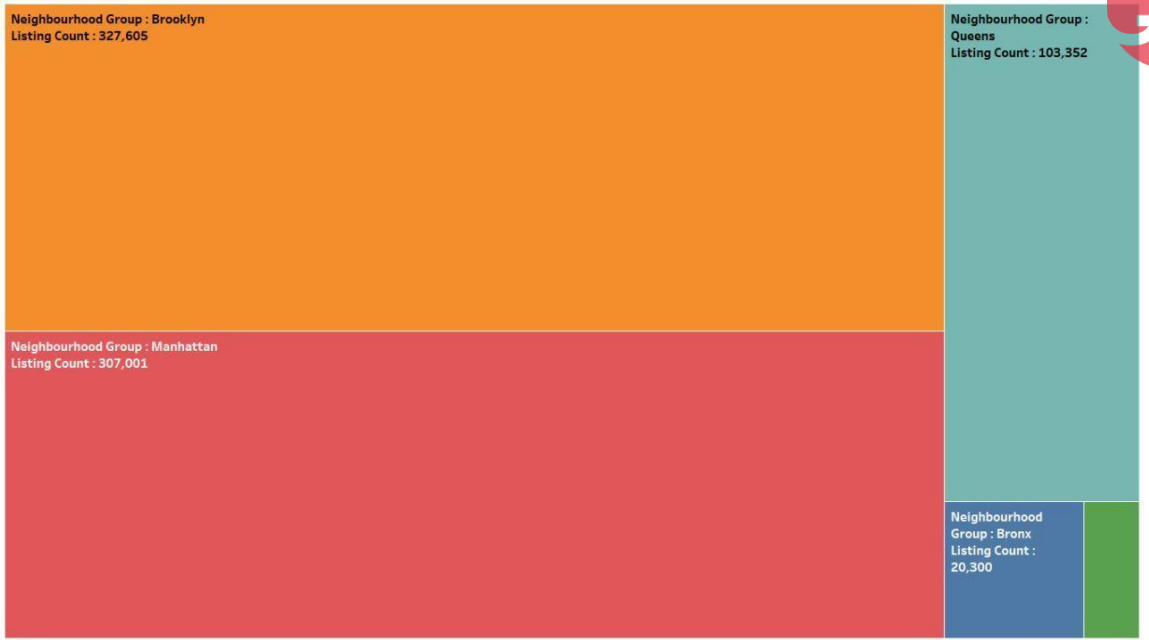
This involved in gaining insights into pricing trends and factors affecting Airbnb. Understanding graphs visually.

New York City



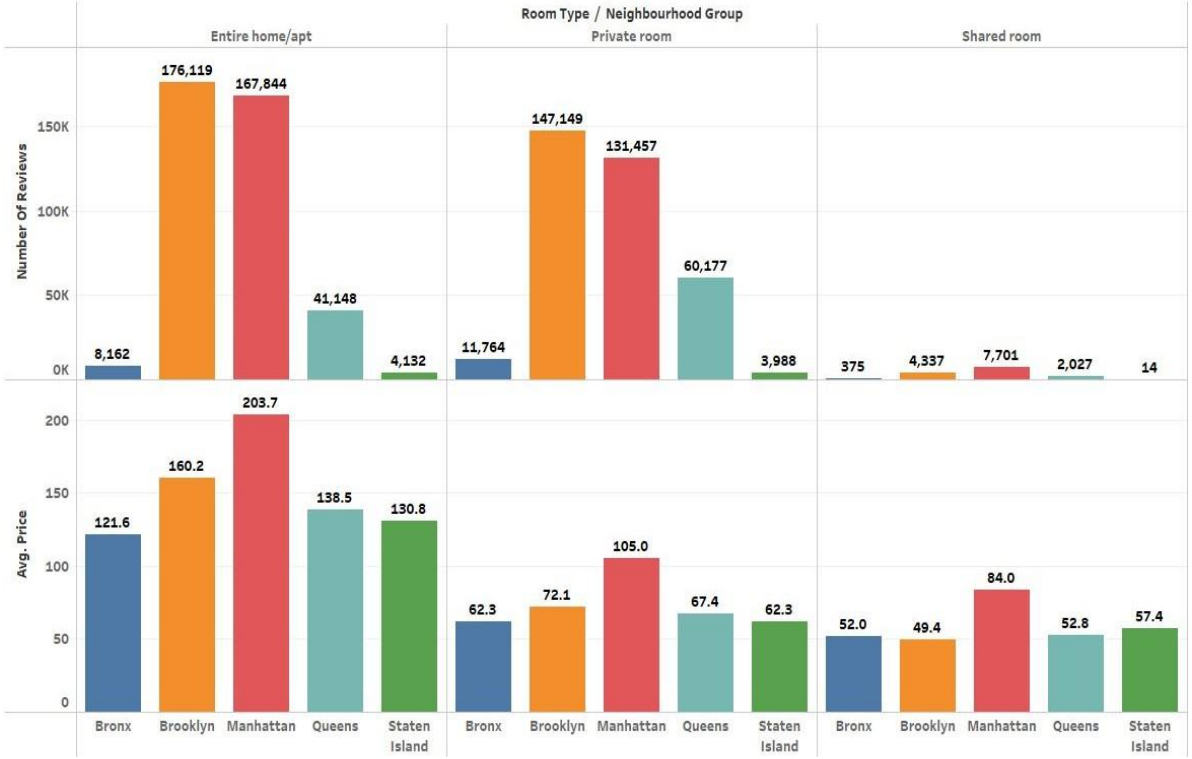
Neighbourhood group v/s pricing and listing count





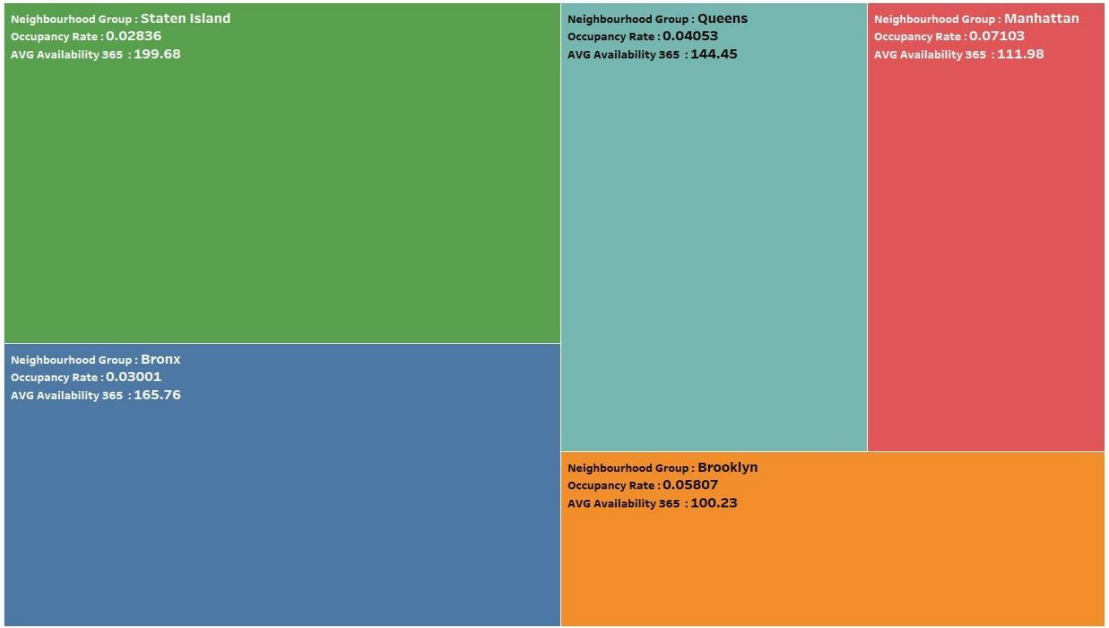
- The **tree map** displays the distribution of Airbnb listings across various neighborhood groups, with size and color indicating availability out of 365 days.
- The **bar graph** shows the number of listings for each neighborhood group, with Brooklyn having the highest count and Staten Island the lowest.

Reviews and pricing for room type and neighbourhood groups



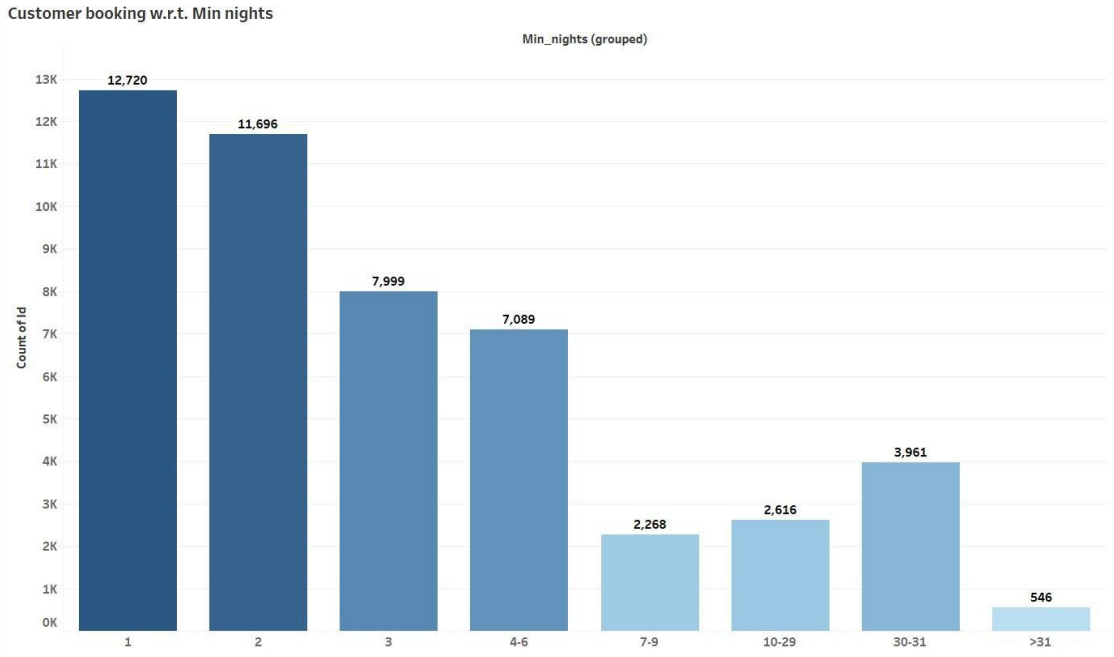
- Guests prefer booking entire homes despite the higher price. The Bronx has the most reviews for entire homes despite high pricing.
- Manhattan has the highest pricing and reviews for both entire homes and private rooms.
- Staten Island has the pricing value high despite of the least number of reviews.

Neighbourhood group wise Occupancy rate and availability

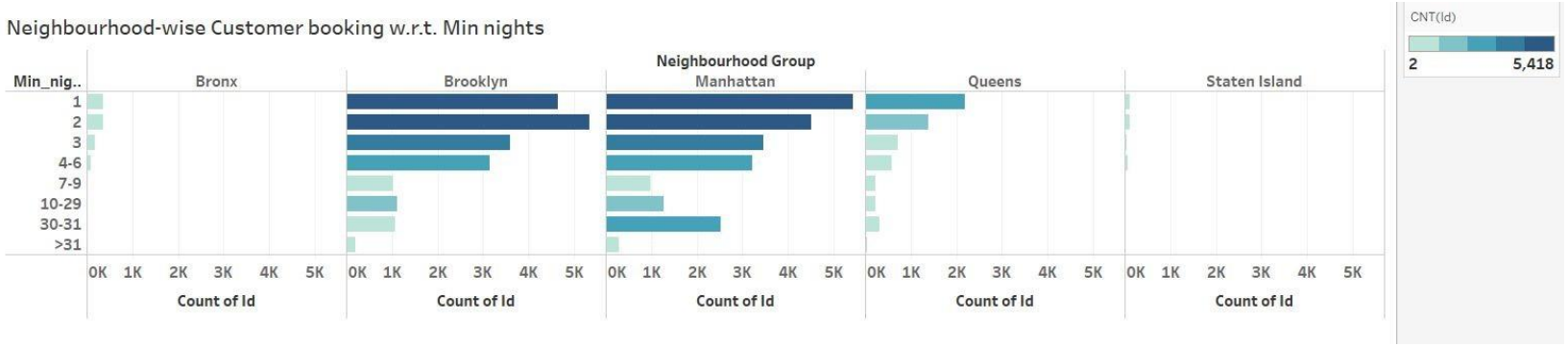


Calculated field: -
Occupancy Rate = ([SUM(Minimum Nights] * [Calculated Host listings count]) / SUM([Availability 365])

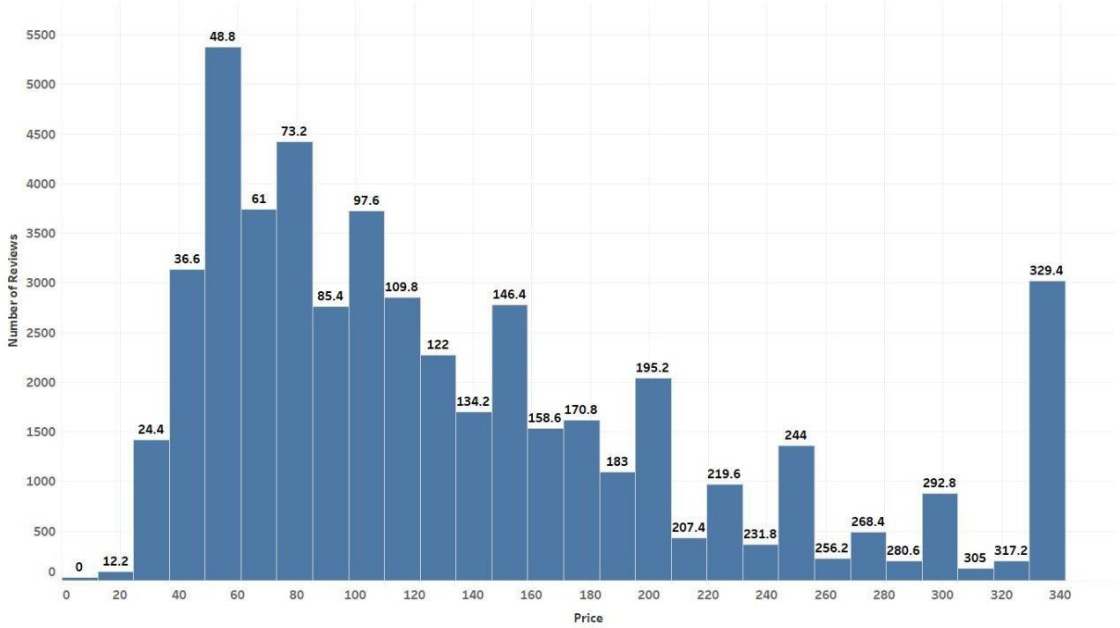
- The treemap shows that Staten Island has high availability but low occupancy, while Brooklyn has low availability but high occupancy.
- Manhattan has high occupancy despite low availability. To improve performance, businesses can optimize marketing strategies in Staten Island, encourage hosts to list more in Brooklyn, optimize prices based on demand, and diversify operations in emerging markets.



- The analysis reveals that customers prefer to book accommodations for 1-2 days, with bookings concentrated in Manhattan and Brooklyn.
- **The analysis is presented in two bar graphs - one vertical and one horizontal.**
- We can see a prominent **spike in 30 days**; this would be because customers would rent out on a monthly basis.

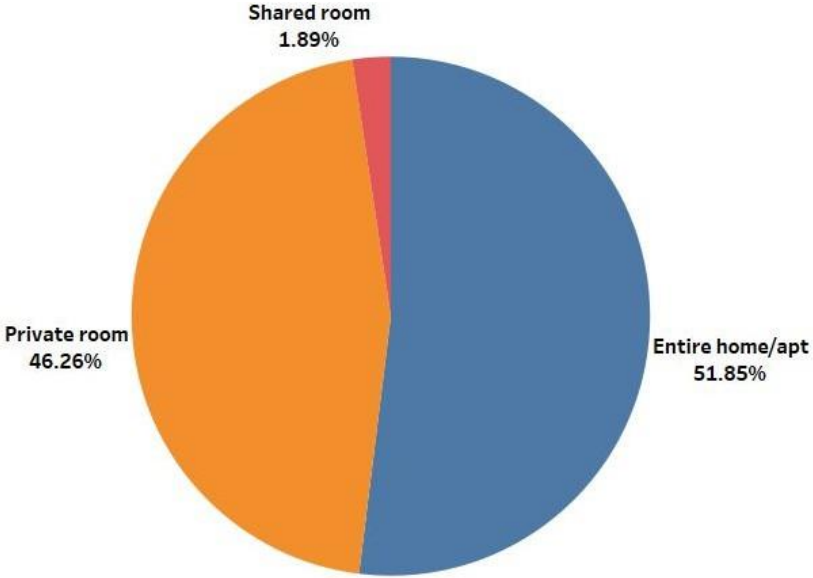


Pricing preferred by customers



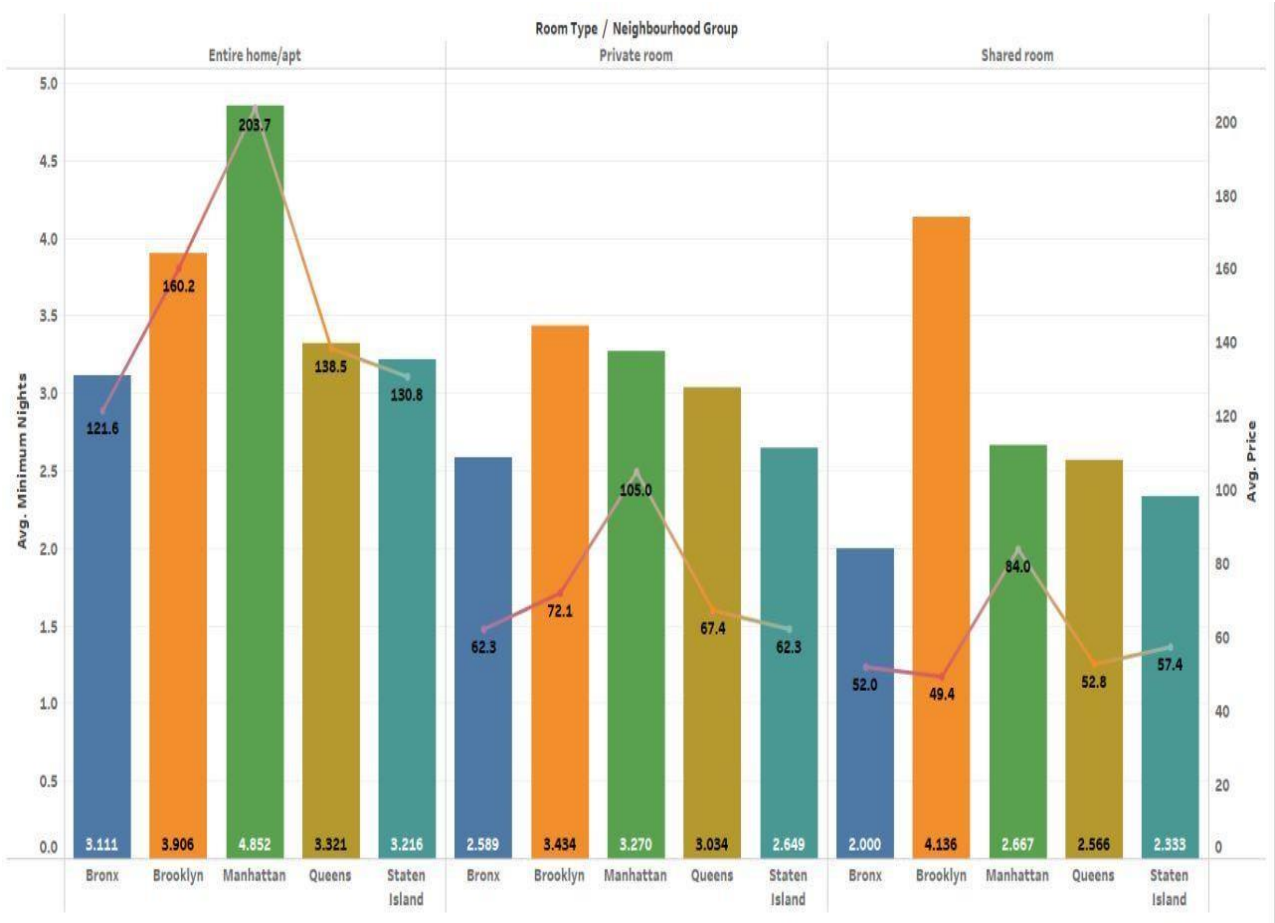
- The **histogram** chart shows that Airbnb rooms priced between $40-$80 and $320-$340 have a high number of positive reviews, indicating their popularity among customers.
- Pricing bins has been created for better understanding.

Percentage of visitors for each room type



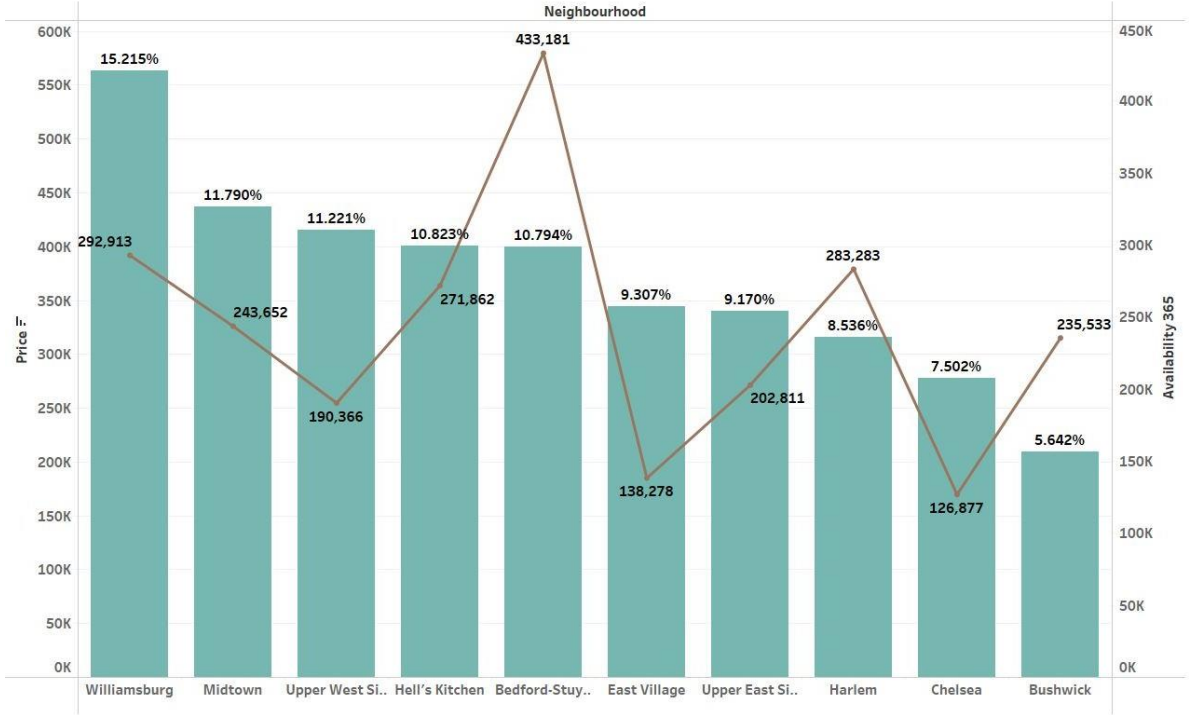
- 52% of customers prefer an **Entire home/ apartment** & 46% of customers prefer **private rooms**.
- Most visitors prefer booking private rooms or entire homes over shared rooms due to the privacy and comfort they offer.

Avg minimum nights and Avg price w.r.t room type and Neighbourhood group



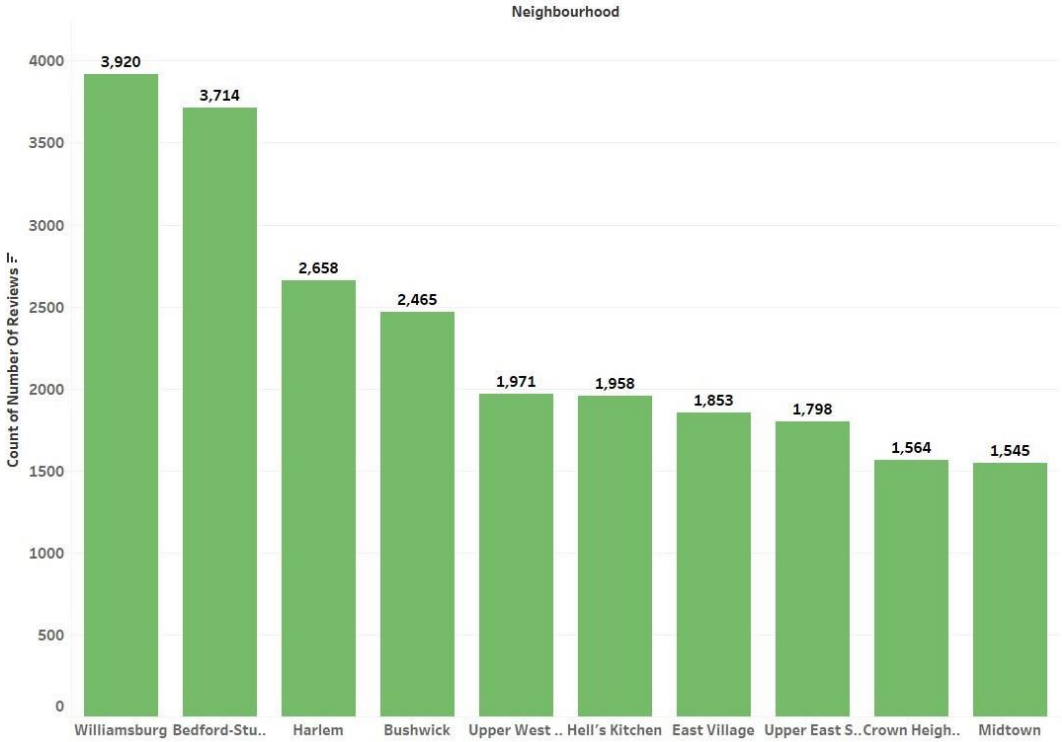
- The chart shows that private rooms and entire homes are more popular than shared rooms, and hosts in different neighborhoods should adjust their marketing and pricing strategies accordingly to optimize revenue.
- This **Dual-Axis Chart** uses a combination of Avg. Min.nights (bar graph) and of Avg. Price (line graph) to illustrate the relationship between variables.

Top 10 Neighbourhood w.r.t price and availability



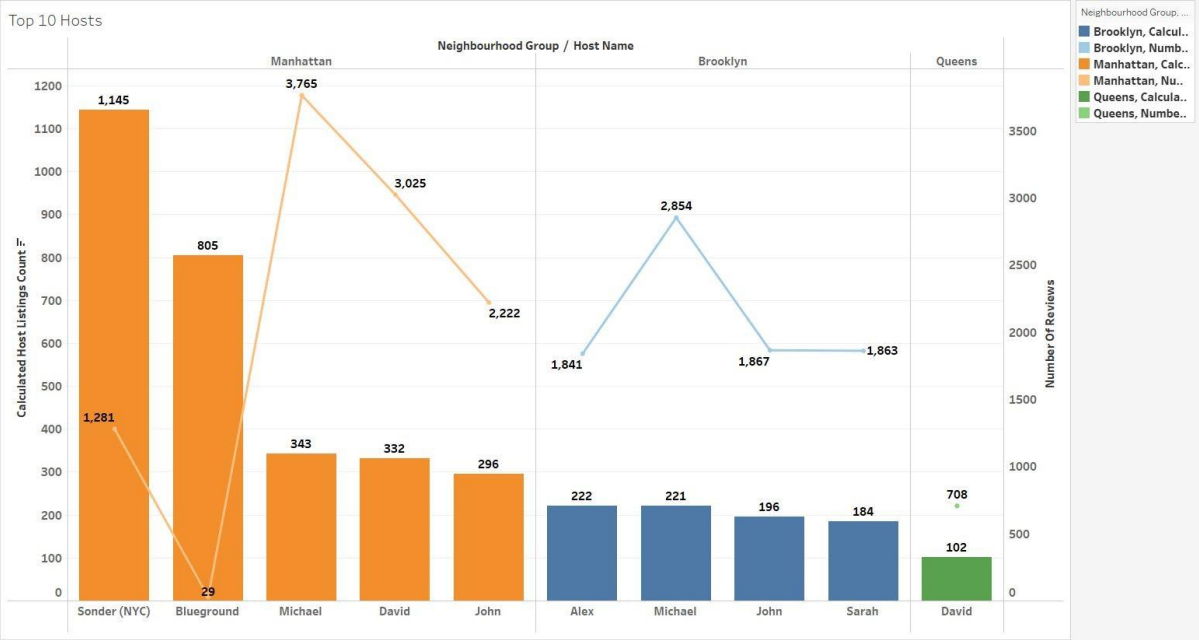
- This **dual-axis** graph shows the average property prices and availability in the top 10 neighborhoods.
- Williamsburg has high prices and availability, while Bedford has the highest prices but low availability, making it exclusive.

Top 10 Neighbourhoods w.r.t no. of reviews



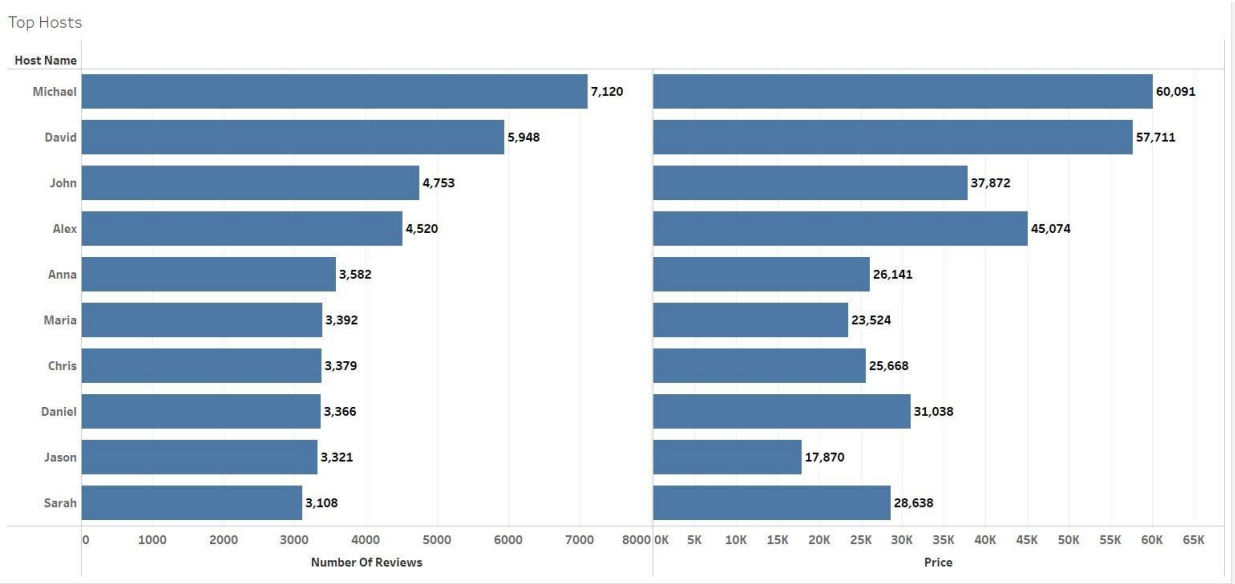
- This **vertical bar** graph shows the number of reviews for the top 10 neighborhoods, with Williamsburg, Bedford, and Harlem having the highest number of reviews and Midtown having the lowest.

Top 10 host w.r.t listing and reviews



- This is a **dual-axis** graph that shows the popularity and number of hosts in Manhattan, Brooklyn, and Queens.
- Sonder and Blue ground are the top 2 hosts who have the greatest count of listings. However, the Review given to them by the customers/visitors is way less than the other hosts in different neighborhood groups.
- Michael, David, John, Alex and Sarah are the top 5 hosts according to the reviews given to them by the visitors.

Top 10 host w.r.t No. of reviews and price



- This **horizontal bar** graph shows the relation between number of reviews and pricing for the top 10 Airbnb hosts.
- Michael, David, Alex, John, and Daniel are the Top 5 hosts that seem to have received the highest number of reviews for their listed sites and have also sites listed with a high price range.

Thank you !