



AIRBNB PROPERTY MANAGEMENT OPTIMIZATION

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STRATEGY FOR
SUSTAINABLE SUCCESS

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ABOUT...

Founded in 2008, Airbnb has grown into a worldwide community that connects travelers with hosts offering distinctive places to stay. From cozy apartments to stylish boutique getaways, the platform serves a wide range of preferences and budgets across more than 220 countries.

Driven by its mission to help people feel at home anywhere in the world, Airbnb goes beyond just stays—it also offers “Experiences,” giving guests the chance to participate in locally led activities. With a secure payment system and round-the-clock customer support, Airbnb continues to be a reliable and popular choice for millions around the globe.



PROBLEM STATEMENT :

As a Data Analyst at Airbnb, the mission is to design an insightful Tableau dashboard that drives smarter rental strategies, boosts guest satisfaction, and increases profitability for hosts. Leveraging Airbnb's rich dataset, the focus is on uncovering meaningful trends and actionable insights that empower data-driven decisions.

This analysis aims to support both Airbnb and its hosting community in enhancing the rental experience and achieving stronger business results.



DATA CLEANING & TRANSFORMATION PROCESS :

Error Handling:-

Removed rows containing errors using the "Home > Remove Rows > Remove Errors" function to ensure data integrity.

Column Formatting:-

Name: Standardized the format of entries in the "Name" column to ensure uniformity and improve readability.

Handling Missing Data:-

Host ID, Host Name, Neighbourhood, Neighbourhood Group, Latitude, Longitude: These columns contained random null or blank values. As the missing values could not be accurately imputed, they were retained without modification.

Country Column:-

Replaced all occurrences of "United States" with blank entries using the "Transform > Replace Values" function for data consistency.

Neighbourhood Group:-

Applied title casing and corrected spelling errors to maintain consistency across entries.

DATA CLEANING & TRANSFORMATION PROCESS :

Last Review Date:-

Converted the "Last Review Date" column to the Date data type using "Using Locale > English (United States)" to ensure proper date formatting.

License Column:-

Removed the "License" column entirely, as it contained only null values and provided no usable information.

Review Date Assumption:-

Due to the absence of explicit booking dates, the "Last Review Date" was used as a proxy for booking date in the analysis.

Neighbourhood Group Analysis:-

Excluded null entries when calculating the number of host listings by room type within each neighbourhood group to maintain accuracy.

Price and Service Fee Columns:-

Extracted numerical values by removing the "\$" symbol.

Converted both columns to the Currency data type to enable financial analysis and calculations.

ANALYSIS BY NEIGHBOURHOOD GROUP

Airbnb Property Management Optimization

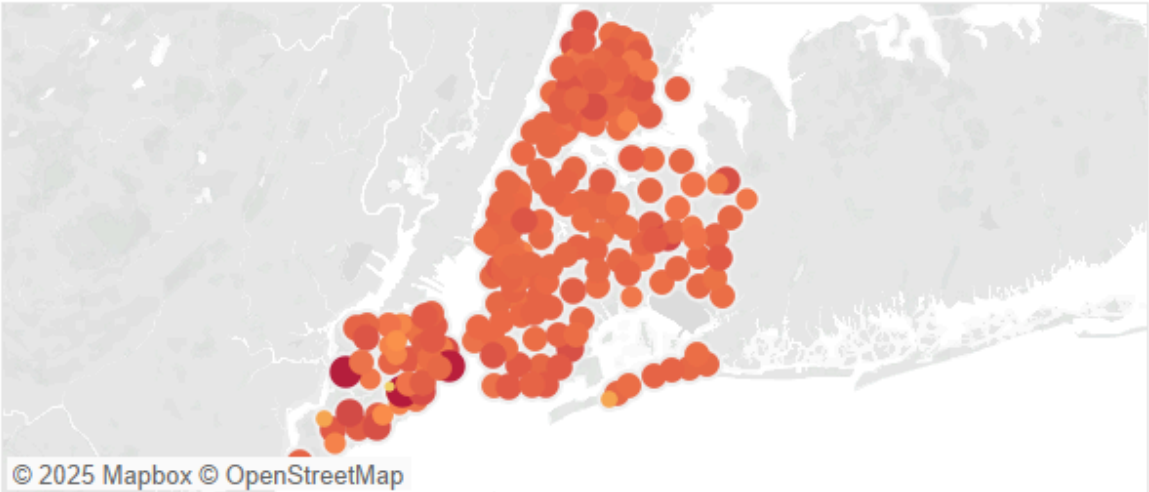


Host listings by Room type for each neighbourhood

Neighbourh..	Room Type			
	Entire home/..	Hotel room	Private room	Shared room
Bronx	3.3545		3.3258	3.2650
Brooklyn	3.2500	3.7500	3.2651	3.3370
Manhattan	3.2757	3.5000	3.2768	3.2597
Queens	3.3520	3.7500	3.3126	3.3911
Staten Island	3.3262		3.4738	3.5333



Price range by Neighbourhood group



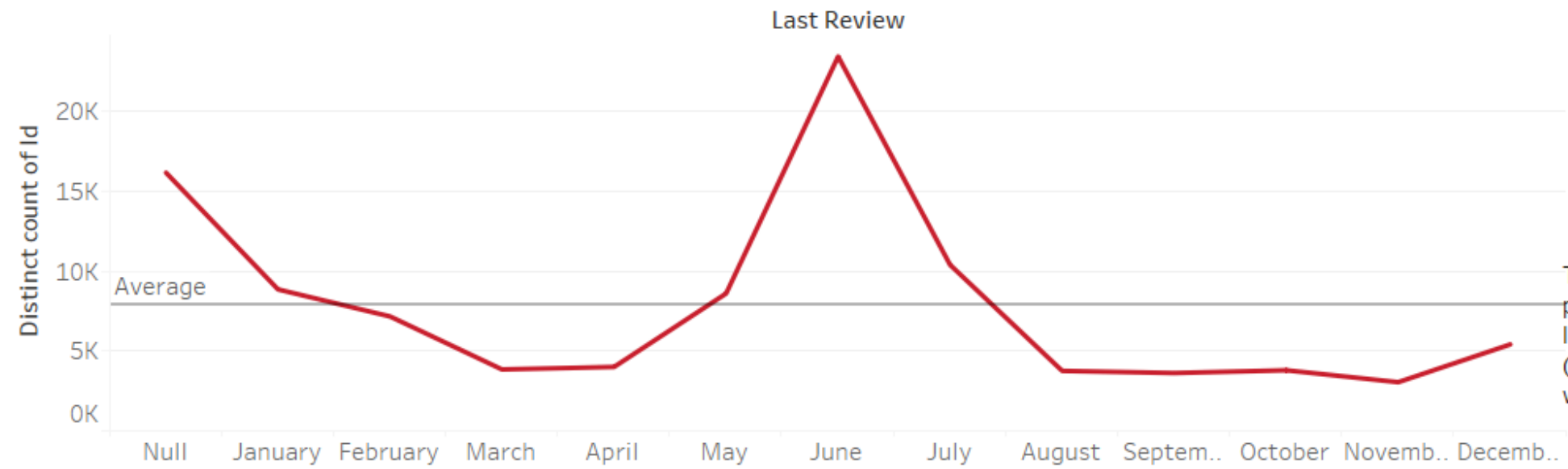
Year of Last Review

(All)

Neighbourhood Gr..

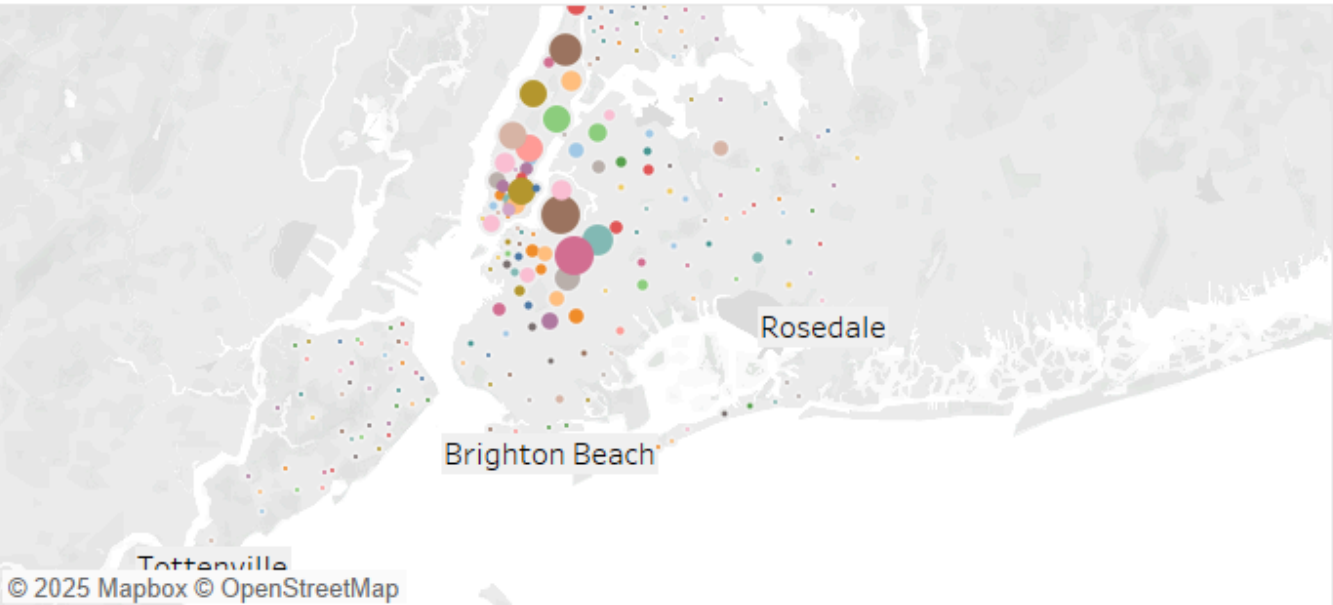
(All)

Seasonality and Booking Trends



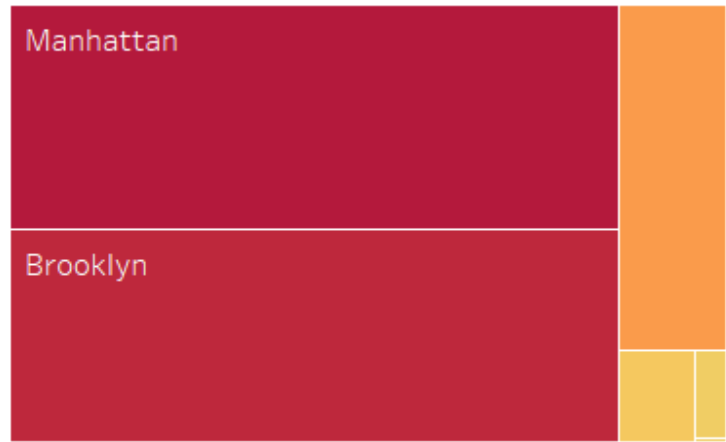
Corr_pr
ce_av
host
listings
-0.00008811
The correlation b/w
price and av host
listings is
(-0.00008811)
which is negligible.

Most Popular Airbnb Listings by Neighbourhood Group



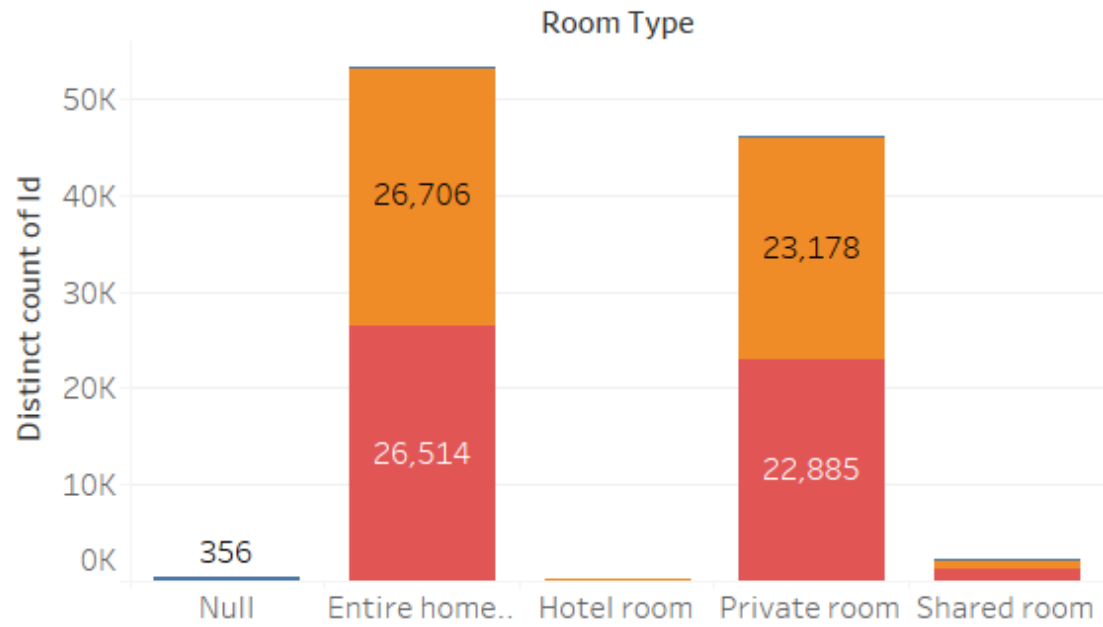
Count of .. 22

House rules by Neighbourhood group

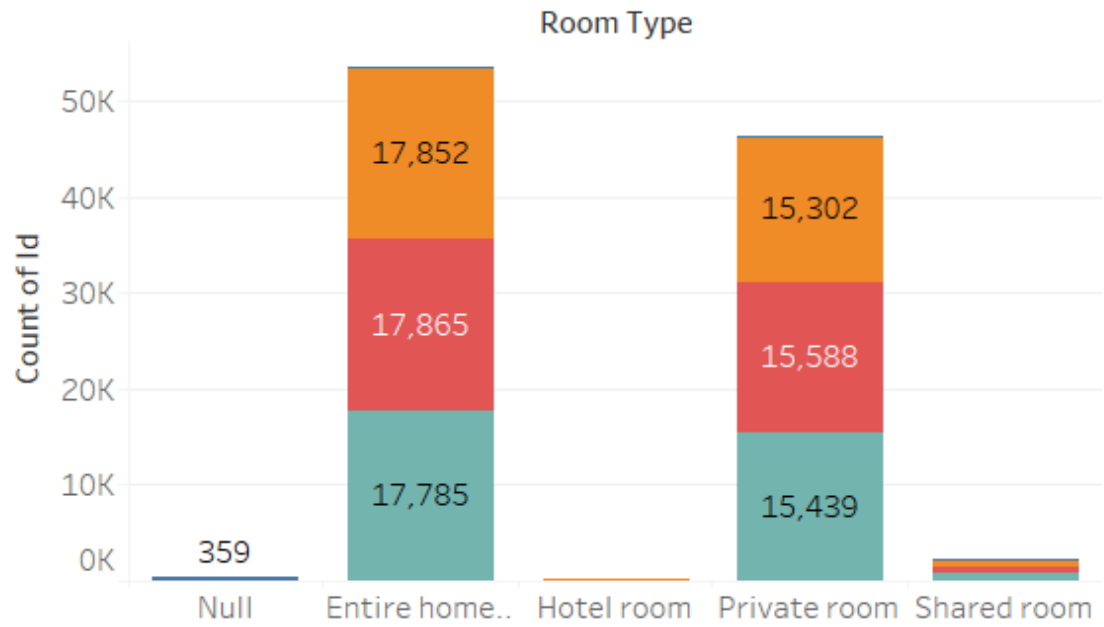


FACTORS FOR BOOKING

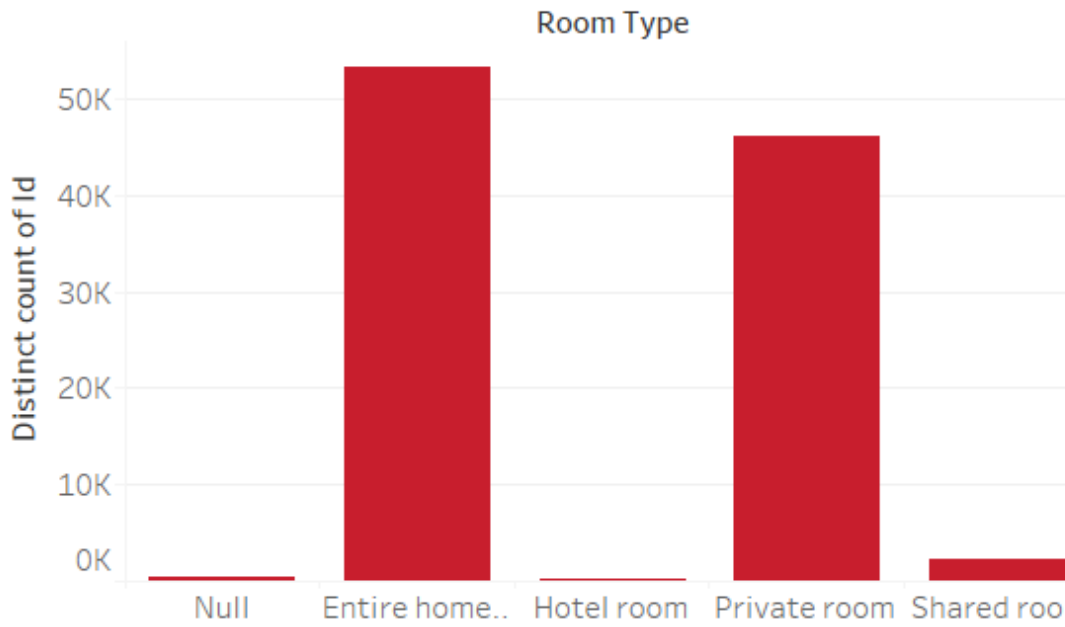
If room type is instantly bookable



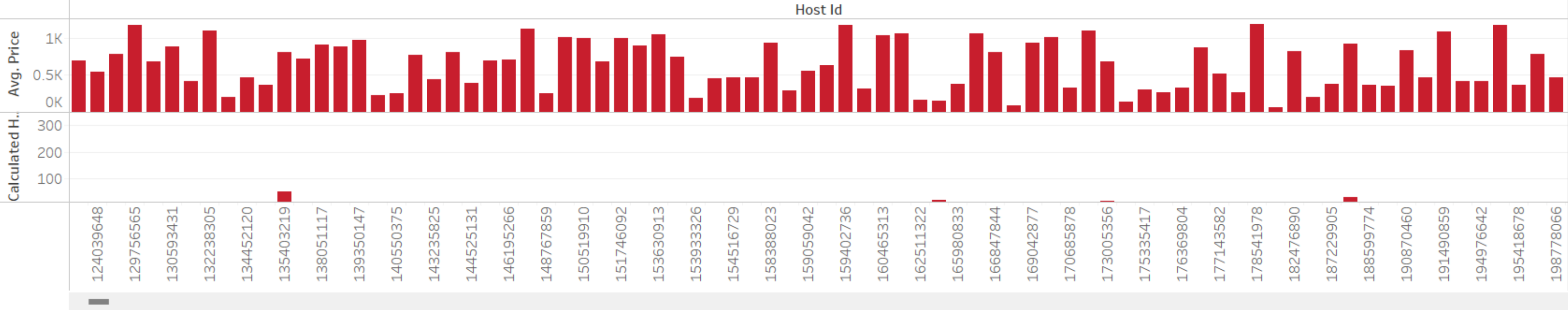
Cancellation policy by room type



Room type popularity by neighbourhood group



Host listings by av. price



Corr_of
_price
and
review

-0.004627
The correlation value between price and review rate per month (-0.004627) is very low and shows that the affect of price is negligible on review rate per month. (So, the relationship is almost neutral which indicates that there could be several other factors affecting the reviews)

OBSERVATION & KEY FINDINGS

Room Type Trends by Neighbourhood Group:-

Entire homes and private rooms dominate the listings across all neighbourhood groups, with Manhattan and Brooklyn showing the highest volumes. In contrast, shared rooms represent a very small segment, suggesting minimal guest interest.

Instant Booking Availability by Room Type:-

Instant booking is widely enabled for entire homes and private rooms, especially in Manhattan, offering guests greater convenience and quicker reservation processes. Hotel rooms and shared rooms, however, have limited availability for instant booking, indicating a more restricted or manual booking process.

OBSERVATION & KEY FINDINGS

Cancellation Policies by Room Type:-

Flexible and moderate cancellation policies are predominantly associated with entire homes and private rooms, offering guests greater adaptability in their travel plans. While strict policies are less frequent, they remain relevant, particularly for premium or higher-priced listings.

Host Listings and Average Pricing Trends:-

Hosts managing multiple listings typically command higher average prices. Significant price variation is observed among hosts, especially those owning more than 50 properties. Notably, listings in Manhattan reflect the highest average pricing across all neighbourhoods.

OBSERVATION & KEY FINDINGS

Price vs. Review Rate Correlation:-

The correlation between listing price and review rate per month is minimal (-0.0046), suggesting that price has little to no influence on how frequently listings are reviewed. This implies that guest satisfaction and engagement are more likely driven by factors such as location, amenities, or overall experience rather than cost alone.

Neighbourhood-Level Insights:-

Manhattan and Brooklyn emerge as the most active neighbourhoods in terms of listing volume, while Queens and Staten Island contribute significantly fewer properties. In terms of pricing, Manhattan commands the highest average rates, followed by Brooklyn—highlighting the premium associated with these prime urban areas.

OBSERVATION & KEY FINDINGS

Additional Correlation Insights

- **Price vs. Availability:** Premium listings tend to have lower availability, indicating either higher demand or exclusivity, with many booked well in advance.
- **Price vs. Ratings:** No significant correlation was found between price and guest ratings. This suggests that affordability does not compromise quality—lower-priced listings can still receive excellent reviews when service and experience are prioritized.

Seasonality Patterns

Booking activity shows clear seasonal trends, particularly in Manhattan, where demand surges during peak tourist periods such as summer and holidays. Entire homes and private rooms experience increased bookings during these times, while hosts often adjust pricing in off-peak months to sustain occupancy levels.



THANK YOU