

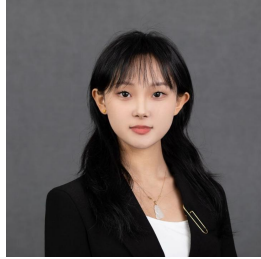


# Airbnb Listings

In New York

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# MSBA Data Visualization Team



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## Project Overview:

**Concept:** Create advanced visual tools to analyze Airbnb market trends.

**Objective:** Provide actionable insights for stakeholders interested in accommodation trends.

# Dataset

The dataset of **Airbnb** listing in New York, contains several attributes such as listed below

Source data: [Kaggle](#)

HostID	Host Since	Name	Neighborhood	Neighbourhood Group	Latitude	Longitude	Price	Room Type	Availability 365
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No. of Reviews	Zip Code	Beds	Instant Book	Review per month	Cancellation
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# Key Insights and Initial Hypothesis

## Insight 1: Finding relationship between Price, Neighborhood, and Accomodation Type.

- **Objective:** Visualize how location and property attributes relate to pricing.
- **Hypothesis:** Specific neighborhoods and room types that command higher prices.

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## Insight 2: Unveiling Investment Opportunities

- **Objective:** Pinpoint neighborhoods for potential high-yield Airbnb investments.
- **Hypothesis:** Certain areas may present superior investment potential based on demand and satisfaction metrics.

# Target Users



**Airbnb Hosts**

: Comparative insights and trend patterns to optimize their listings.

**Airbnb Corporation**

: Independent market usage and impact analysis.



**Travelers**

: Data-driven guidance for choosing optimal accommodations.

**Real Estate Investors**

: Identification of high-demand areas for strategic investments.



**Urban Planners/Researchers**

: Analysis of housing and tourism trends for informed policy-making.

**General Public**

: Insights into Airbnb's footprint for potential users and the curious.

# Data Processing Challenges

**Challenge 1:** Unstructured 'Passenger Name' Data

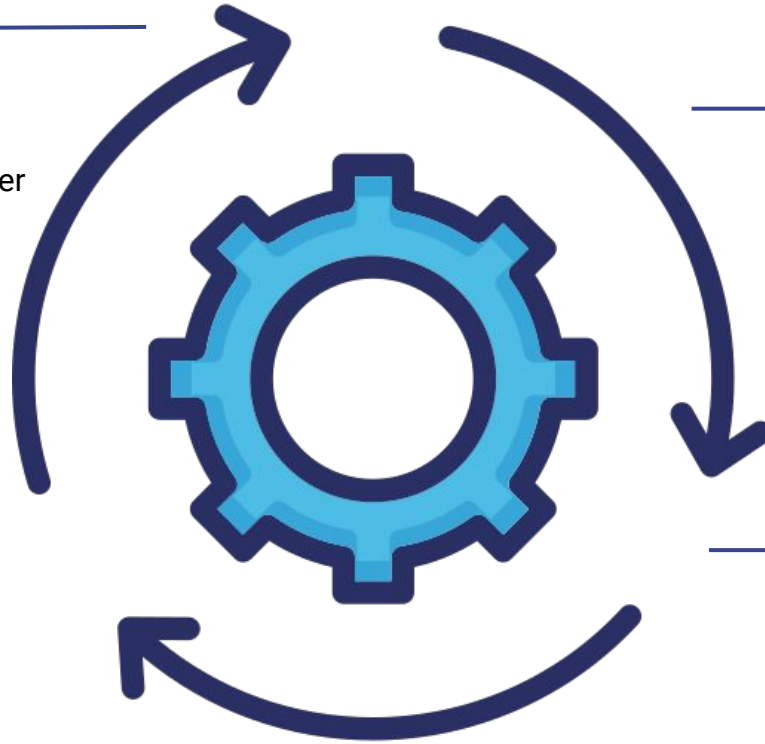
**Solution:** Split the 'Passenger Name' into three distinct columns: 'Last Name', 'First Name', and 'Title'.

**Challenge 2:** Incorrect 'Age' Data Format

**Solution:** turn the decimal into an integer

**Challenge 3:** Handling Missing Values

**Solution:** Utilize the average age to fill in the missing values in the 'Age' column.



### **Data Size & Performance Challenges**

**Challenge:** Handling large datasets can cause performance issues in data processing and analysis.

**Solution:** Use efficient data processing tools and techniques, such as R.

### **Visualization Challenges**

**Challenge:** Effectively display the hierarchical structure of the data.

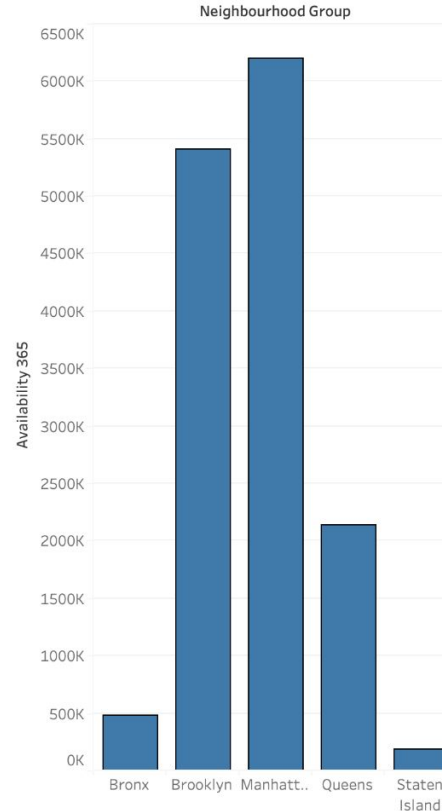
**Solution:** Incorporate interactive visualization features that allowed for drilling down into the hierarchy. Utilized varying sizes and shades to denote different hierarchy levels.



# Visualization

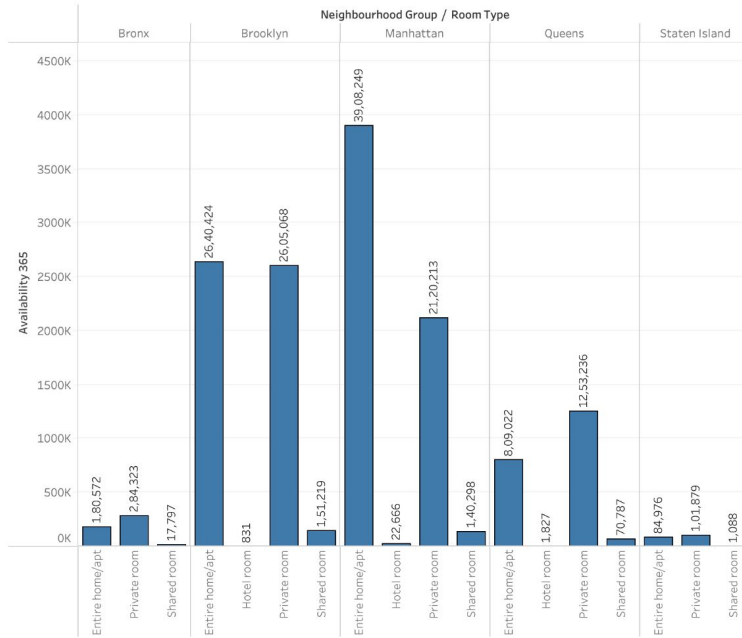
**Hypothesis 3:** Availability of Airbnbs differ across different Neighborhood and Room Type

Given that the neighborhood type was a categorical variable, we initialized a method of visualizing this data with a bar plot.





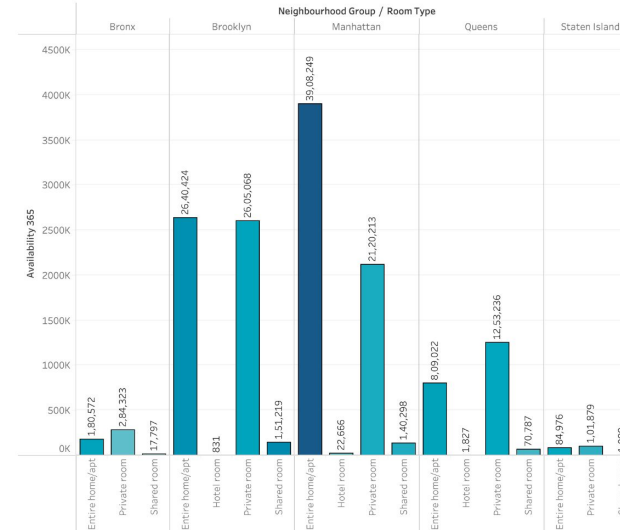
Availability across Different Neighbourhoods



## Room Type Categorization

## NeighbourHood Group Filter

Availability across Different Neighbourhoods



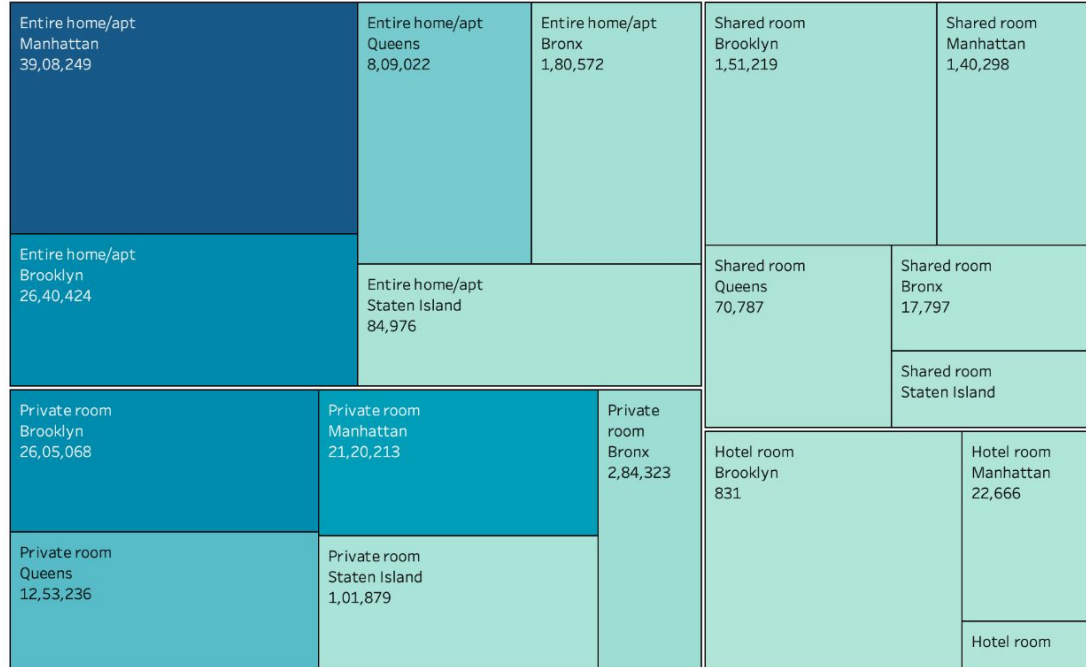
Neighbourhood Group

- ☐ (All)
- ☒ Null
- ☐ Bronx
- ☒ brooklyn
- ☐ Brooklyn
- ☒ manhattan
- ☐ Manhattan
- ☐ Queens
- ☐ Staten Island

AVG(Minimum Nights)

1.00 12.03

## Availability across Different Neighbourhoods



Room Type

- ☒ (All)
- ☒ Entire home/apt
- ☒ Hotel room
- ☒ Private room
- ☒ Shared room

Neighbourhood Group

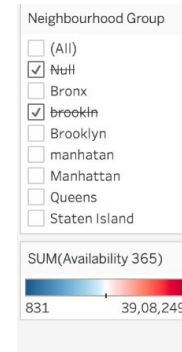
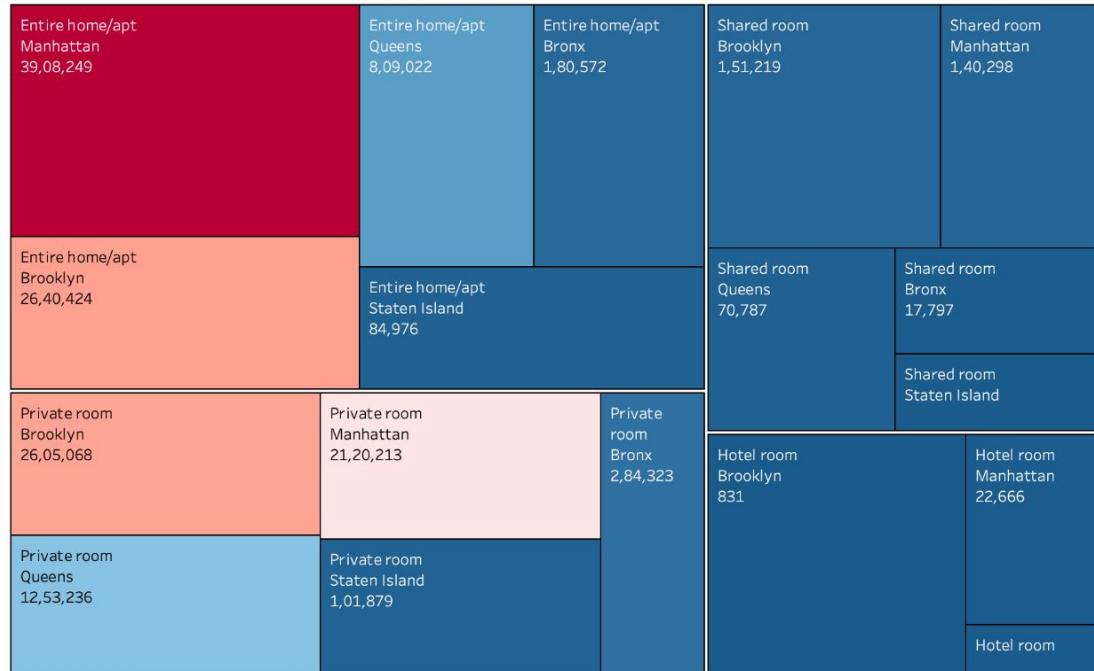
- ☐ (All)
- ☒ Null
- ☐ Bronx
- ☒ brooklyn
- ☐ Brooklyn
- ☒ manhattan
- ☐ Manhattan
- ☐ Queens
- ☐ Staten Island

SUM(Availability 365)

831 39,08,249

Addition of Filters

## Availability across Different Neighbourhoods

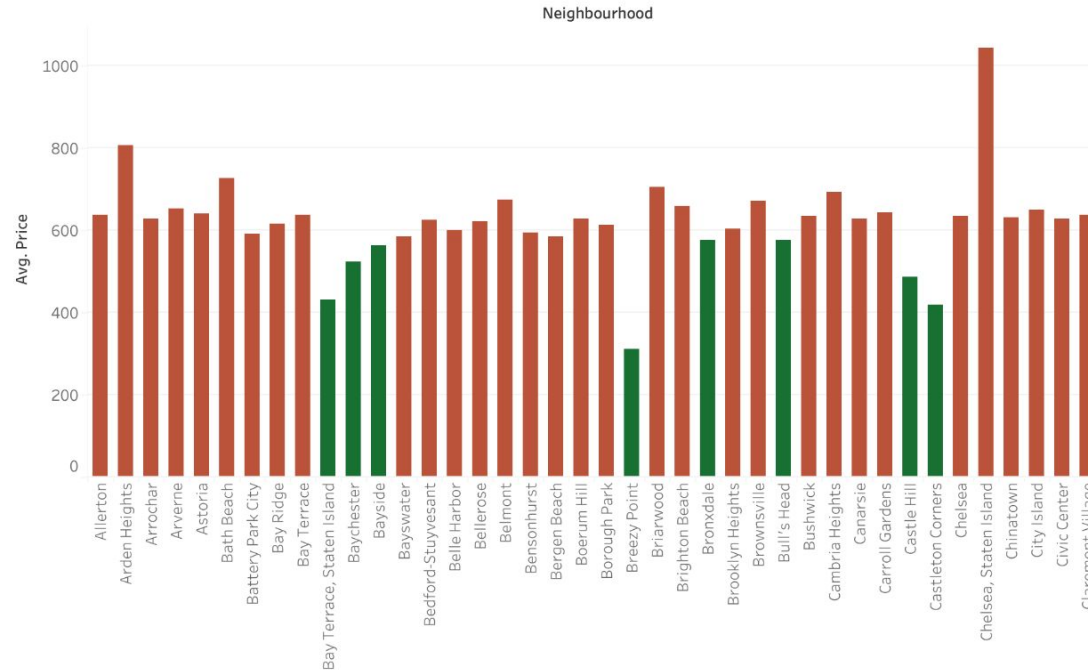


Implementing a  
diverging palette

Accentuate the contrast  
among various categories.

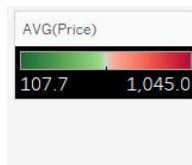
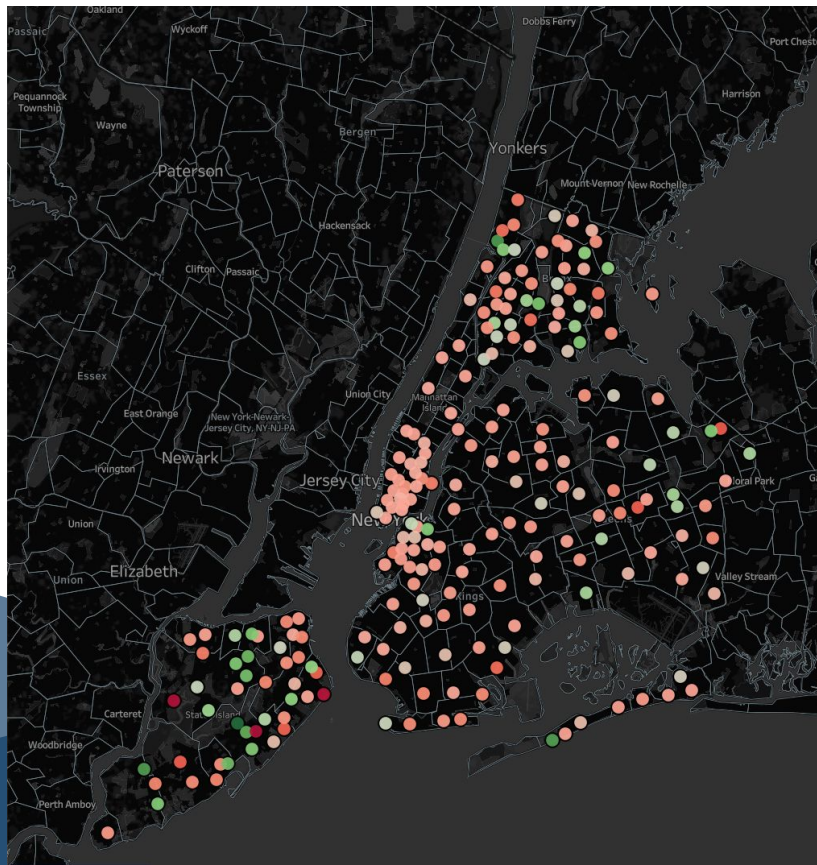


**Hypothesis:** The price of Airbnb listings varies significantly based on location, with properties in city centers or popular tourist destinations being priced higher than those in suburban or less popular areas



Price Distribution Based on Location

## Price Distribution Based on Location



- Explore New York City's Airbnb market with visually captivating Tableau visualizations.
- A vibrant map highlights average prices across diverse neighborhoods, showcasing the impact of location on listing costs.
- Sleek bar charts offer a swift, intuitive comparison of average prices in different areas.
- Our findings confirm that location significantly influences Airbnb listing prices in the bustling city.

# Conclusion

**Pricing Dynamics:** Tableau confirms entire homes are pricier than private rooms.

**Location Influence:** Geographic exploration highlights location's significant impact on NYC Airbnb prices.

**Visual Insights:** Bar charts, heatmaps, and symbol maps detail room types and neighborhood dynamics.

**Audience Impact:** Valuable for travelers and industry stakeholders in the diverse Airbnb market.

**Rich Tapestry:** Our Tableau stories guide future explorations in the ever-evolving city of dreams.

THANK YOU

