



**Analysis of Airbnb Data Using Power BI**



# What Is Airbnb



Airbnb, headquartered in San Francisco, California, operates a popular online marketplace specializing in short-term accommodations and experiences. Established in 2008 by founders Brian Chesky, Nathan Blecharczyk, and Joe Gebbia, the name Airbnb is derived from its original moniker, AirBedandBreakfast.com. iVision analytics firm has been provided with datasets related to Airbnb listings and reviewer scores worldwide. The objective is to gain a deeper understanding of Airbnb's operations and draw meaningful insights from the data. As a BI Analyst at iVision, your role is to create informative reports by conducting a thorough analysis of the data using powerful tools



# Business Objective



The primary objective is to analyze Airbnb data to reveal insights into user experiences and satisfaction levels with the numerous listed stays, all accomplished using Power BI.



**Dashboard 1**



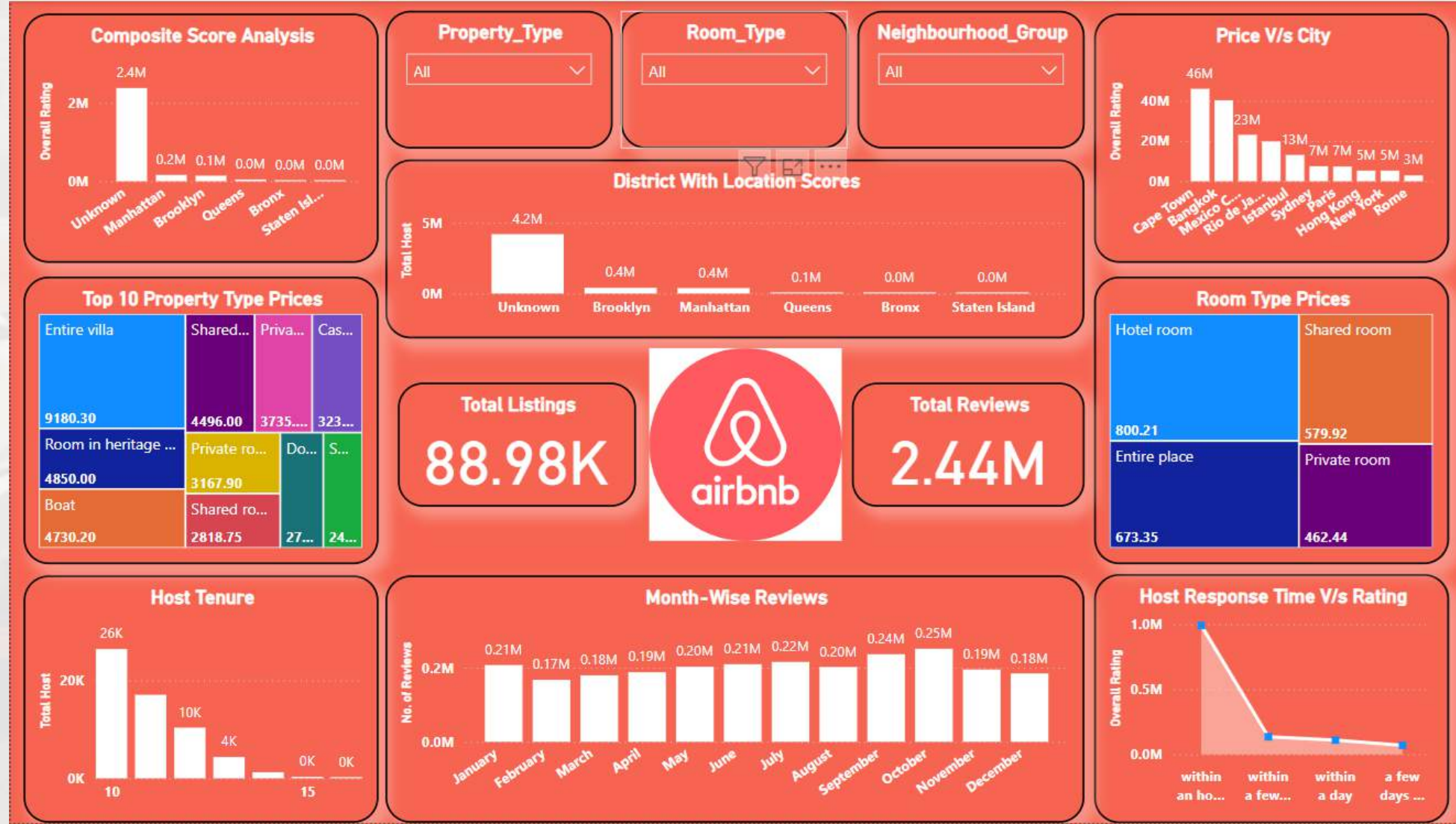
**Dashboard 2**



**Recommendation**



# 1. Dashboard 1



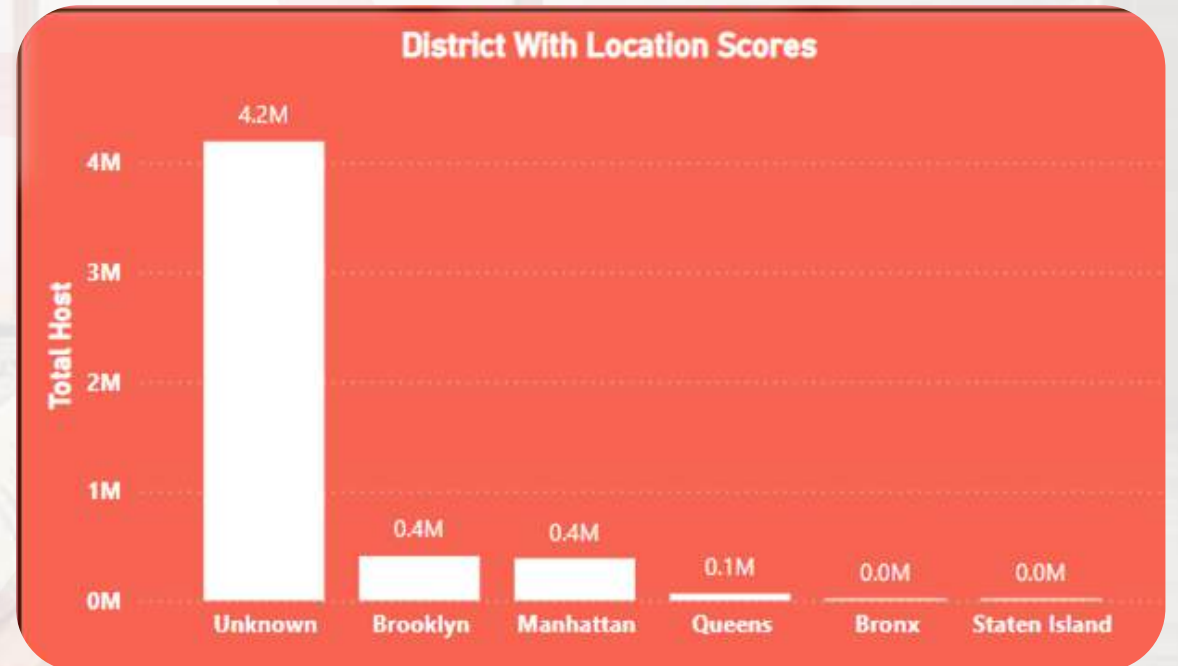
## 1.1 Assessing District Location Scores



The aim is to pinpoint the location in the district with the least favorable location scores.

# Staten Island

Since, Most of the data are Unknown But Among all the district Location Scores (Sum of Review\_scores\_accuracy + reviews\_scores\_cleanliness + review\_scores\_checkin + review\_scores\_communication + review\_scores\_locations). Staten Island City has the Lowest Location Score of 3996.



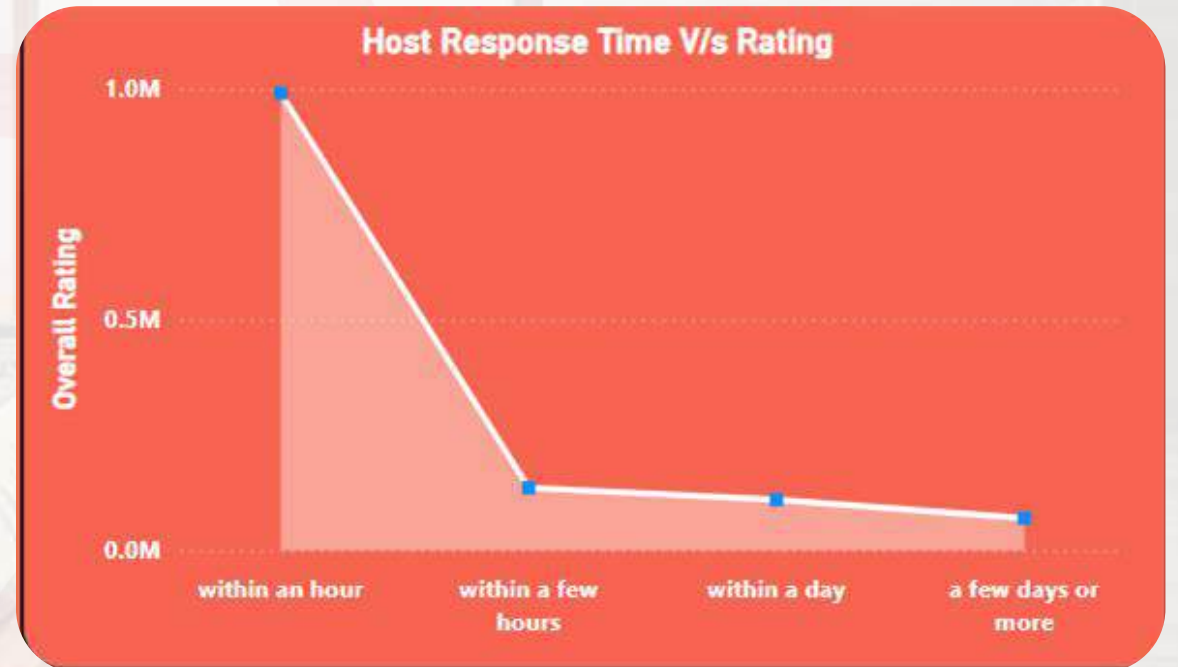
## 1.2 Examining Host Response Time Impact



The goal is to delve into the relationship between host response times and the overall ratings of Airbnb listings providing valuable insights.

### Within Hour

From this Listing maximum Reviews i.e. 75.92% of total reviews gets Within an Hours



## 1.3 Visualizing Airbnb Listing Prices



The objective is to create visual representations of Airbnb listing prices across different cities and summarize any noteworthy trends or variations.

### Cape Town

From this Chart:

- **Highest:** Cape Town (46M), Bangkok (40M) – Likely due to high listing numbers or prices.
- **Moderate:** Mexico City (23M), Rio de Janeiro (20M), Istanbul (13M) – Reflecting active but smaller markets.
- **Lower:** Sydney, Paris (7M each), Hong Kong, New York (5M each), Rome (3M) – Indicating smaller markets or competitive pricing.





## 1.3 Noteworthy Trends



### 1. Market Price Leader

Cape Town and Bangkok have the highest total prices, likely due to a higher Avg Price

### 2. Middle-Tier Cities

Mexico City, Rio de Janeiro, and Istanbul show moderate total prices, indicating balanced pricing and listing volumes.

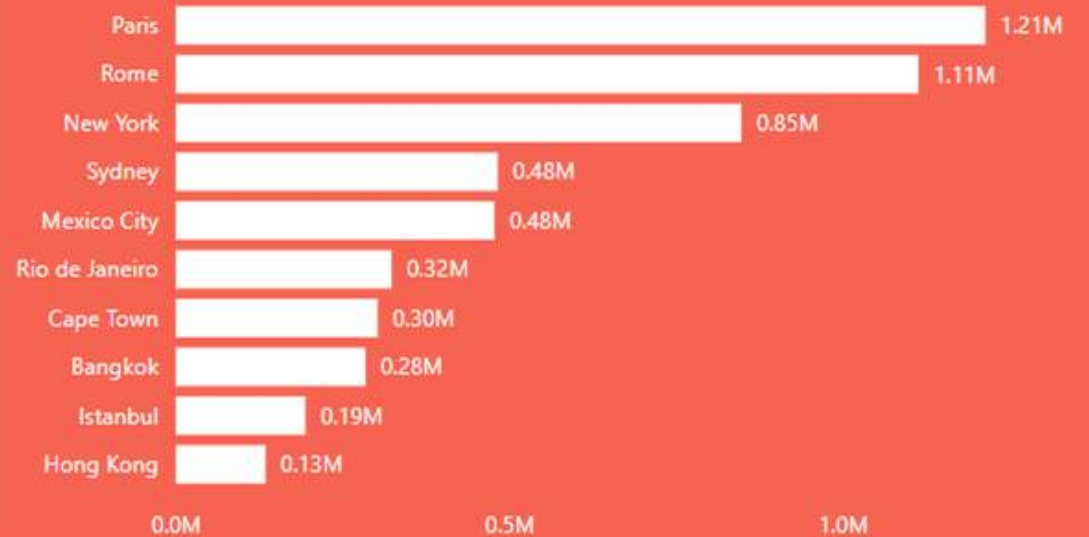
### 3. Lower-Tier Cities

Sydney, Paris, Hong Kong, New York, and Rome have lower total prices, possibly due to fewer listings, lower prices, or market competition.

### 4. Growth Potential

Cities like Rome and Hong Kong may benefit from competitive pricing strategies and improved listing attractiveness to boost market share.

City-Wise Visitors



**Since, Price of Capetown and Bangkok is more So, More People Visiting at Paris & New York**



## 1.4 Analyzing Composite Scores

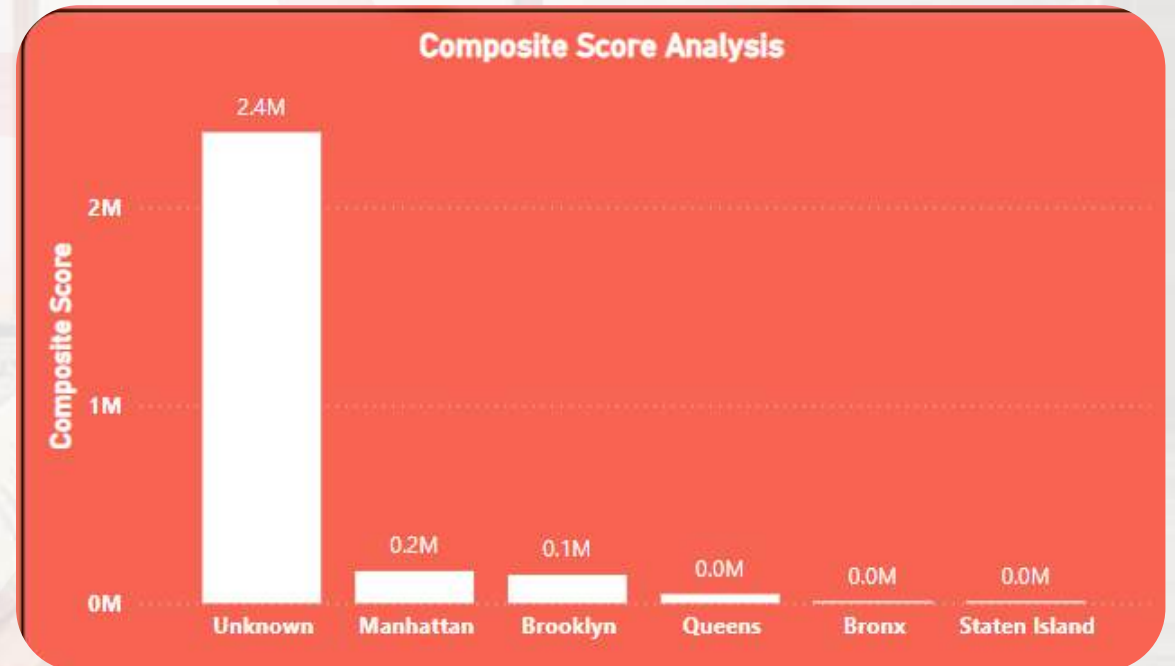


The task involves creating a composite score that integrates check-in experience and host communication for various districts with subsequent analysis and insights.

# Unknown

From this Chart:

- **Data Gaps:** The high score for 'Unknown' suggests data gaps in district information, which should be addressed for better insights.
- Manhattan (0.2M) and Brooklyn (0.1M) have the highest composite scores among known districts, indicating better check-in and host communication.
- Queens, Bronx, and Staten Island have negligible scores, suggesting fewer listings or lower guest experience ratings.



## 1.5 Calculating Listing Age and Host Tenure

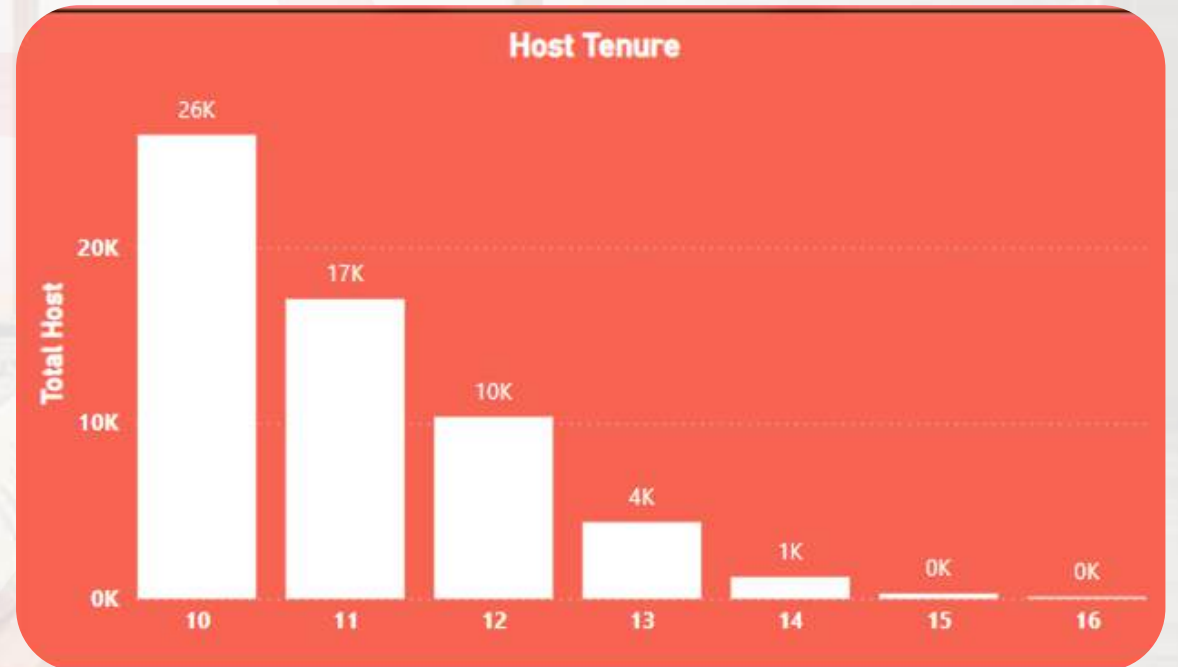


This objective entails computing the age of Airbnb listings and identifying hosts who have accumulated more than ten years of hosting expertise.

# Host=10 yrs

From this Chart:

- **Majority of 10-Year Hosts:** 26K hosts have ten years of experience, indicating a surge in Airbnb's growth around that time.
- **Decreasing Host Tenure:** Host numbers decline sharply after ten years, with 17,000 at 11 years, 10,000 at 12 years, and 4,000 at 13 years.
- **Few Long-Term Hosts:** Very few hosts have 14+ years of tenure, with only 1,000 at 14 years, suggesting challenges in long-term host retention.



## 1.6 Property Type Price Analysis



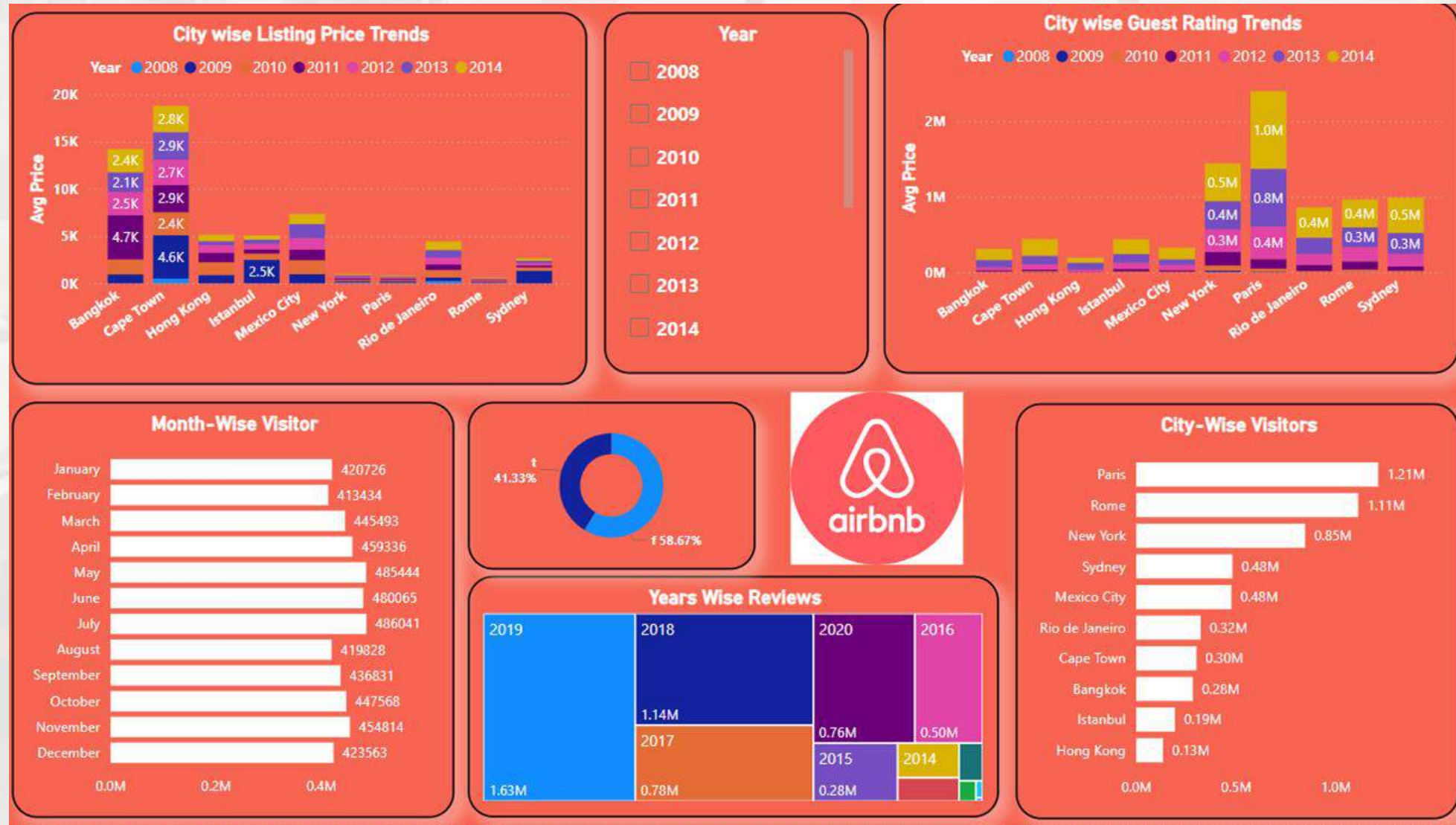
The task involves the creation of a visual tree map that displays average prices for various room and property types with specific attention given to the property type associated with the highest prices for entire places.

From this Chart:

- **Highest Price:** Hotel rooms top at \$800.21.
- **Entire Place vs. Private Room:** Entire places at \$673.35; private rooms at \$462.44.
- **Shared Rooms:** Higher than private rooms at \$579.92.
- **Top Property Type:** Entire villas lead with \$9,180.30.
- **Unique Stays:** Boats (\$4,730.20), castles (\$3,237.08), domes (\$2,714.65).
- **Budget Options:** Shared rooms in apartments/houses are the cheapest.



## 2. City Insights Dashboard





# City Insights



## Listing Price Trends:

- **High Prices:** Bangkok (4.7K) and Cape Town (4.6K) show the highest average listing prices.
- **Moderate Prices:** Hong Kong, Istanbul, and Mexico City range between 2.5K-3K.
- **Steady Prices:** New York averages around 2.5K.

## Guest Rating Trends:

- **High Ratings:** Paris (up to 1.0M) and Rio de Janeiro have the highest guest ratings.
- **Moderate Ratings:** New York and Rome show favorable ratings.
- **Low Ratings:** Sydney and Hong Kong have lower guest ratings.

## Visitor Trends:

- **Top Visitors:** Paris (1.21M) and Rome (1.11M) have the most visitors.
- **Consistent Visitors:** New York has 0.85M visitors.
- **Lowest Visitors:** Hong Kong has only 0.13M visitors.

## Monthly Visitor Trends:

- **Peak Season:** June (480K) and July (486K) see the highest visitor numbers.
- **Low Season:** February (413K) and August (420K) have the lowest visitor counts.

## Review Trends:

- **High Reviews in 2019:** 1.63M reviews show strong pre-pandemic engagement.
- **Drop in 2020:** Reviews fell to 0.76M due to the pandemic impact.

# Conclusion



## City Performance:

- **Highest Listing Prices:** Cape Town and Bangkok lead with the highest total prices, suggesting strong market demand.
- **Top Visitor Destinations:** Paris (1.21M visitors) and Rome (1.11M) are the most popular cities, emphasizing their appeal as major tourist destinations.
- **Guest Satisfaction:** Paris and Rio de Janeiro have high guest ratings, indicating high satisfaction levels.

## Property and Room Type Preferences:

- **Most Expensive:** Entire villas (\$9,180.30) are the highest-priced property type, reflecting luxury demand.
- **Popular Room Types:** Hotel rooms command the highest average price (\$800.21), followed by entire places and shared rooms.

## Host Engagement:

- **Dominant Host Tenure:** Majority of hosts have 10 years of experience (26K), showing a strong base of long-term hosts.
- **Host Response Impact:** Listings with faster response times (within an hour) receive significantly higher ratings, highlighting the importance of prompt communication.

## Review and Visitor Trends:

- **Peak Review Year:** 2019 saw the highest number of reviews (1.63M), with a decline in 2020 due to the pandemic.
- **Seasonal Peaks:** June and July are peak months for visitors, suggesting the need for targeted marketing during these periods.

## Data Gaps:

- **Unknown Locations:** Significant data is categorized under 'Unknown,' indicating the need for improved data categorization to better analyze performance by location.

# SWOT Analysis



# S

## Strength

High visitor numbers and strong guest ratings in key cities like Paris and Cape Town highlight Airbnb's market appeal and customer satisfaction.

# W

## Weakness

Significant portion of data categorized as 'Unknown' suggests gaps in data quality, limiting precise market analysis.

# O

## Opportunity

Improving host retention and engagement in lower-performing areas like Queens and the Bronx can boost market share and enhance the guest experience.

# T

## Threat

Decline in reviews in 2020 reflects vulnerability to external factors such as pandemics, which can significantly impact Airbnb's operations and revenue streams.

# Recommendation



- **Enhance Data Accuracy:** Address the 'Unknown' category by improving location data collection and categorization for better market analysis.
- **Leverage High-Performing Cities:** Focus marketing efforts on cities with high visitor numbers and listing prices like Paris, Cape Town, and Bangkok to maximize ROI.
- **Promote Fast Response Times:** Encourage hosts to respond within an hour using automated messaging tools to improve guest satisfaction and ratings.
- **Capitalize on Peak Seasons:** Increase promotional activities and dynamic pricing during peak months (June and July) to optimize bookings and revenue.
- **Diversify Property Offerings:** Promote a range of property types, including high-demand luxury options like entire villas, to cater to diverse traveler preferences.
- **Support Long-Term Hosts:** Develop retention programs and incentives for experienced hosts to maintain high-quality listings and consistent guest experiences.
- **Develop Host Retention Programs:** Implement targeted retention strategies to keep experienced hosts engaged, especially those nearing or surpassing ten years on the platform. This could include loyalty rewards, advanced training, and recognition programs.
- **Encourage Early Adoption:** Use data showing host growth trends to craft incentives for early adoption among new hosts, helping them commit to long-term engagement on the platform.
- **Support New Hosts:** Offer robust onboarding and continuous support for new hosts to help them establish a successful hosting experience, promoting long-term retention and satisfaction.
- **Enhance Guest Experience in Low-Performing Areas:** Invest in improving the guest experience in areas with low composite scores, such as Queens, Bronx, and Staten Island. This can include better host training and localized marketing efforts.
- **Leverage High-End Property Types:** Promote luxury options like entire villas and unique stays such as boats and castles, which command high prices and cater to affluent travelers.
- **Expand Shared Space Offerings:** Highlight the value of shared spaces, which provide a middle ground between private and economical options, appealing to guests seeking affordable yet unique accommodations.
- **Benchmark Best Practices:** Use high-performing areas like Manhattan and Brooklyn as benchmarks to guide improvements in other districts, particularly focusing on enhancing check-in processes and communication standards.



# Thank You

