

# **Capstone Project**

## **Airbnb Bookings Analysis**

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# What Is Airbnb?

- Airbnb, as in “Air Bed and Breakfast,” is a service that lets property owners rent out their spaces to travelers looking for a place to stay. Travelers can rent a space for multiple people to share, a shared space with private rooms, or the entire property for themselves.
- The Airbnb Dataset Lists the number of spaces available with 16 columns describing various attributes.

# Objective

- 1. Defining Problem Statement**
- 2. Exploratory Data Analysis**
- 3. Obtaining Critical Insights**

# Data Variables From AirBnb

- **Id**- It provides a unique id to each listing in the dataset.
- **Name**-It describes the property in a concise manner.
- **Host\_id**-It is used to ascertain the ownership of a certain individual
- **Host\_name**-It is the name of the property owner
- **Neighbourhood\_group**-It basically categorizes neighbourhood into five groups Bronx, Brooklyn, Manhattan, Staten Islands and Queens
- **Neighbourhood**-It designates the location of a property.
- **Latitude**-It Specifies the Latitude of the property.
- **Longitude**-It denotes the Longitude of the property.
- **Room\_type**-It classifies the type of property into Private\_Room, Shared\_Room and Entire\_Apartment.

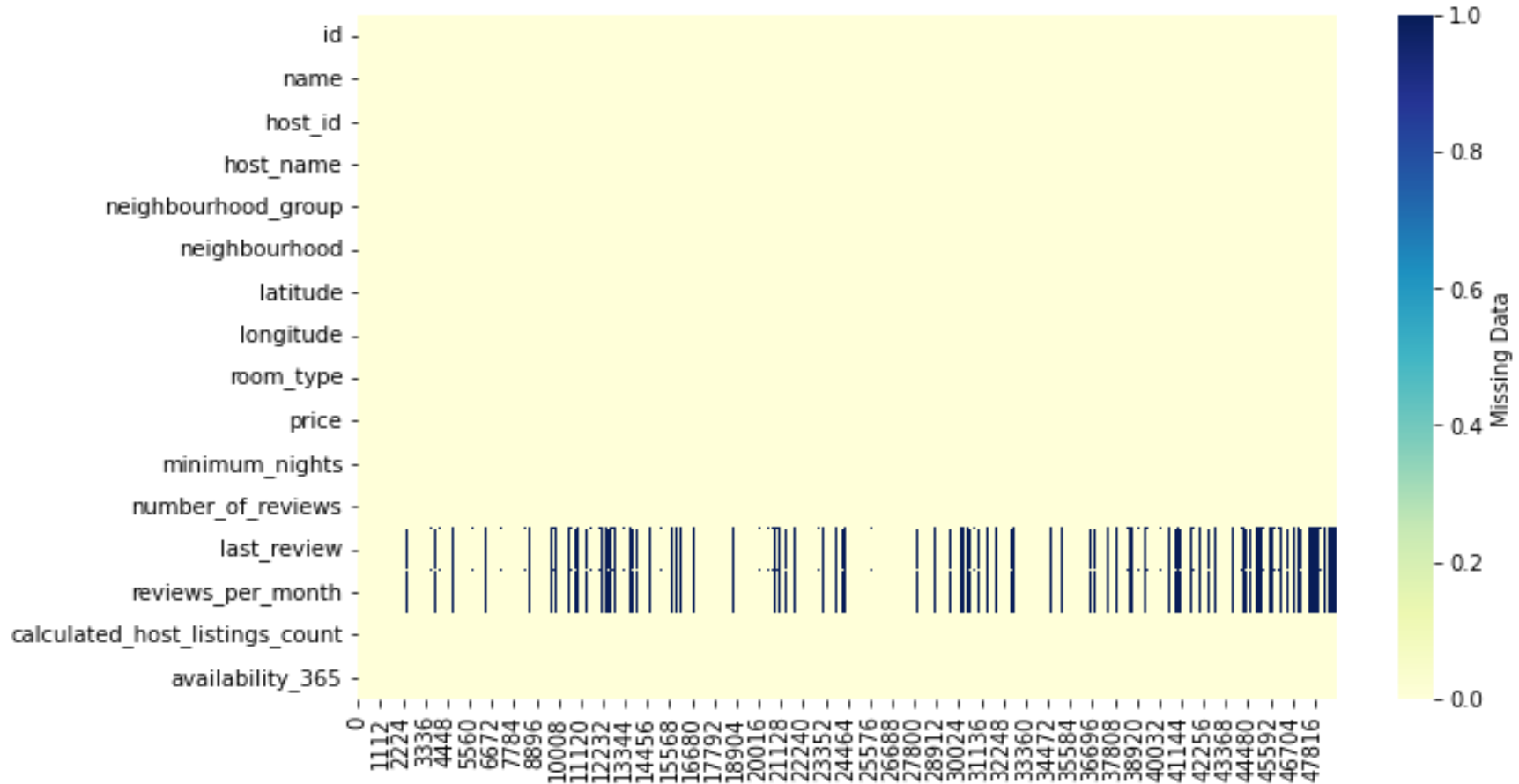
# Data Variables From AirBnb

- **Price-** It provides the price of each listed property.
- **Minimum\_Nights-**It gives the minimum night one needs to pay for in the property.
- **Number\_of\_reviews-**It is used to ascertain the number of reviews received by a property.
- **Reviews\_per\_month-** It denotes the number of reviews per month.
- **Calcuated\_host\_listings\_count-** It corresponds to the number of properties hosted by the unique host\_id
- **Availability\_365-** The number of days the property is available in a year.

# Data Cleaning

- When we started to explore the data is very essential to do the data cleaning before go ahead to analysis part.
- For that we use
- `df.isnull().sum()`

# Data Cleaning Visualization



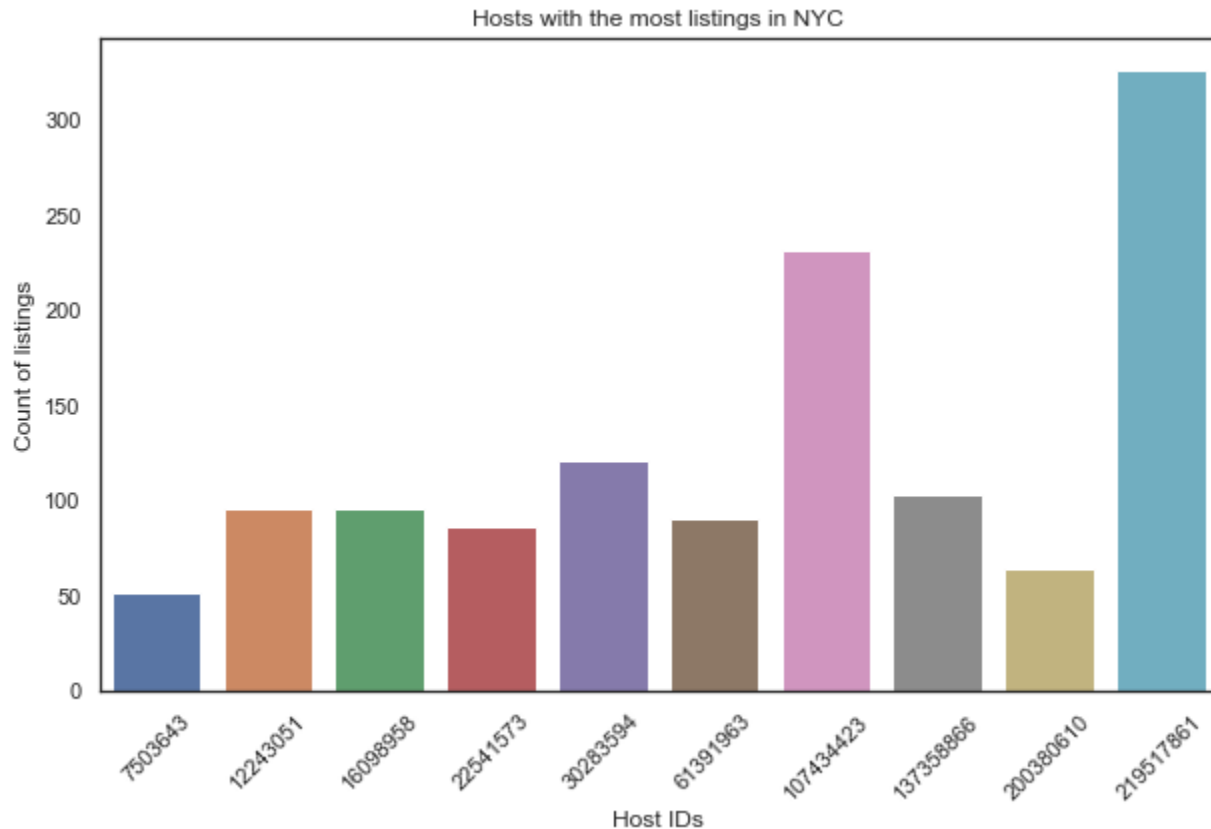
## Problem Statements :

- 1. Which has Most Listing in AirBnb NYC
- 2. Which have More Listing in Each Neighborhood Groups
- 3. Expensive Neighborhood Group (Location of NYC)
- 4. Most Listing in Each Room
- 5. Most Listed Neighborhood (Area of Location in NYC) (ex : Kensington, Midtown, Harlem etc..)
- 6. How Price is correspond to minimum nights
- 7. Number of Reviews
- 8. Most Densed Places According to Latitude and Longitude



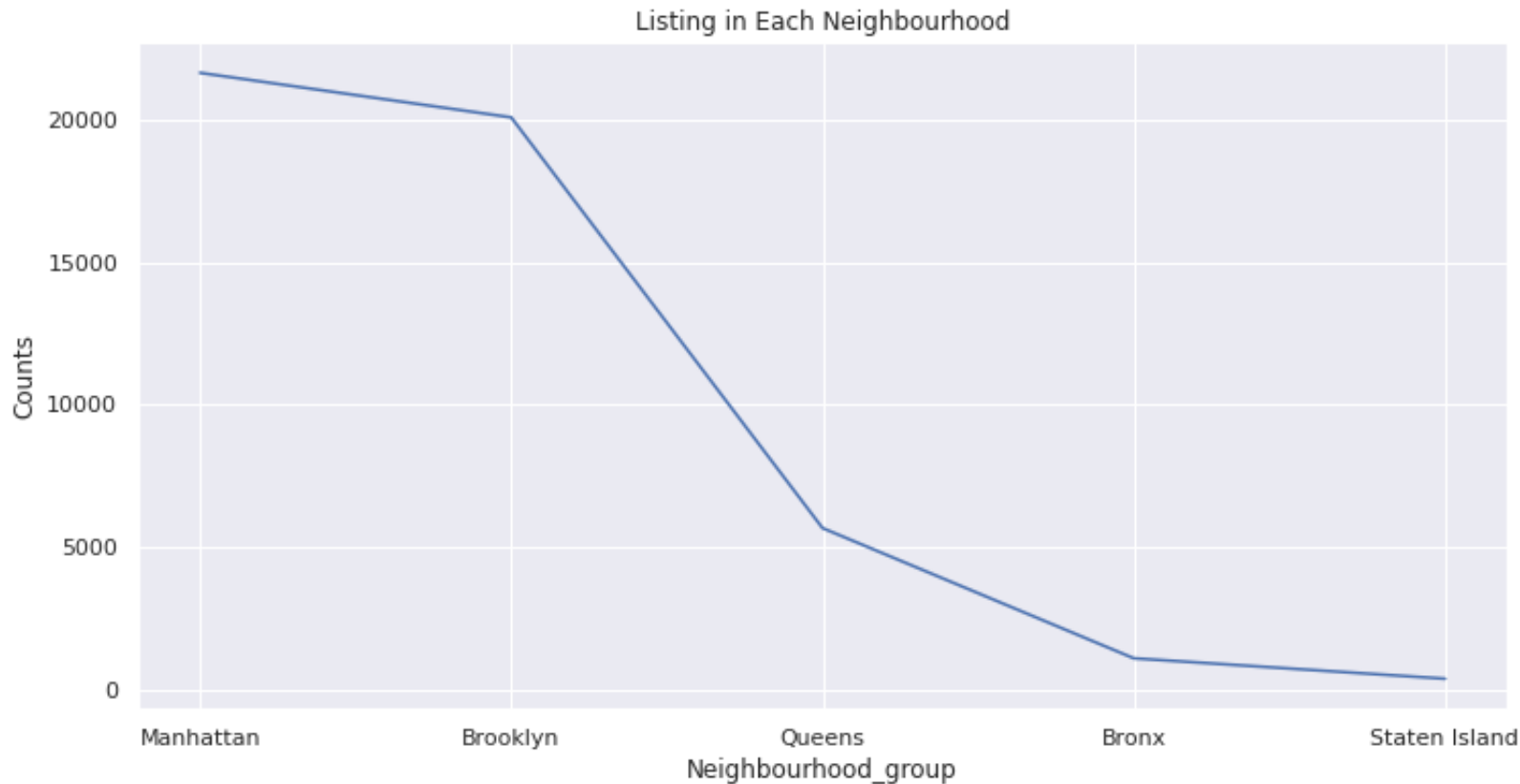
# Exploratory Data Analysis

- 1. Which has Most Listing in AirBnb NYC

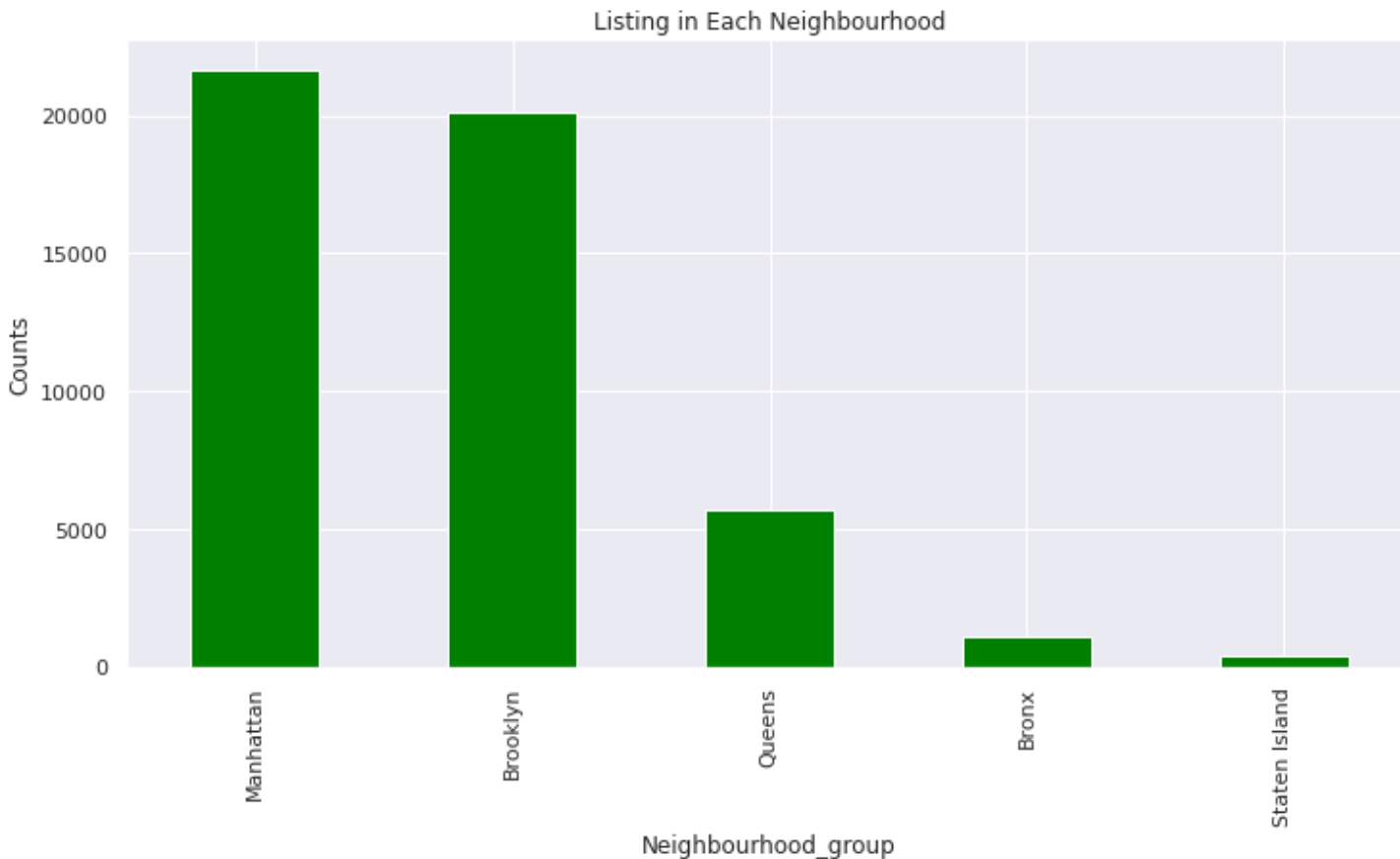


# Exploratory Data Analysis

- 2. Which have More Listing in Each Neighborhood Groups

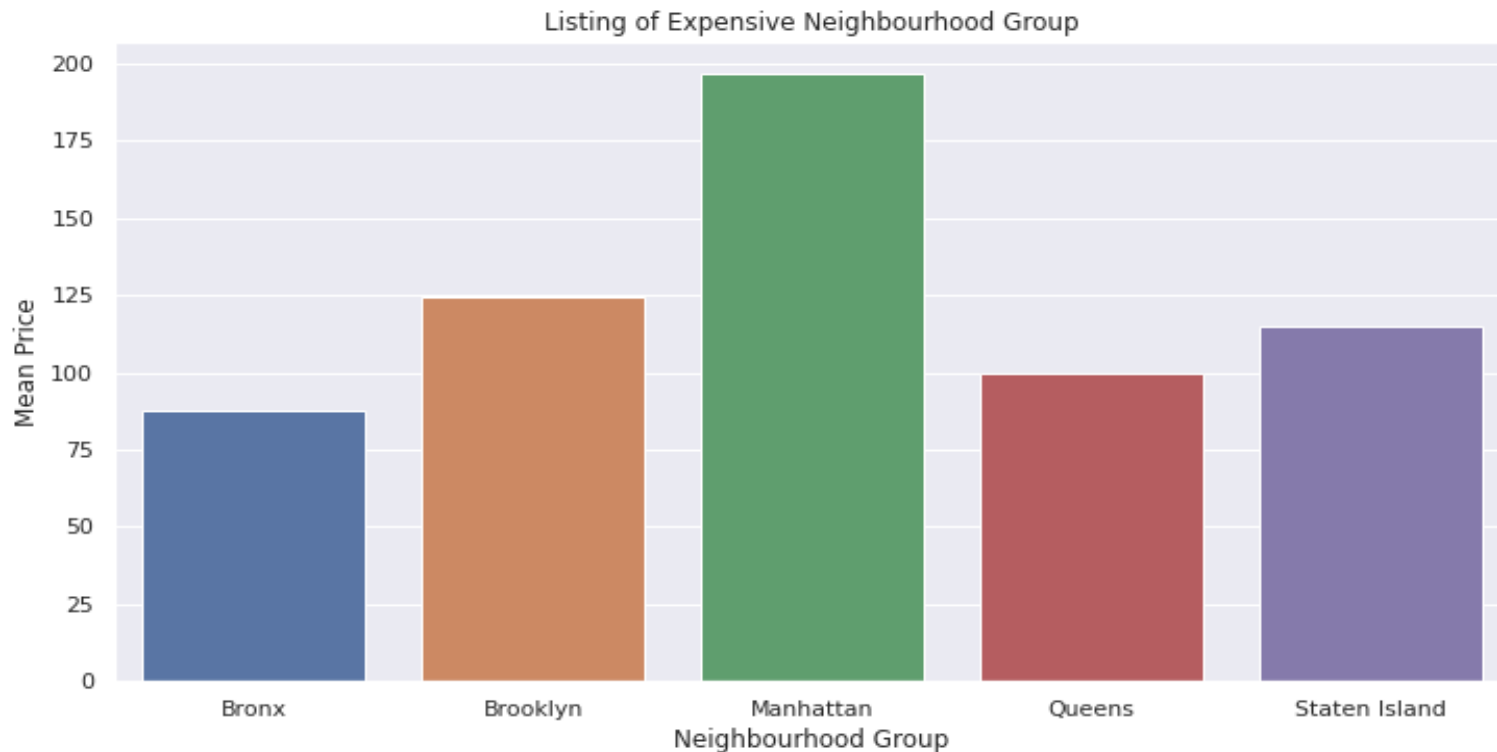


# Most Listing using matplotlib barplot



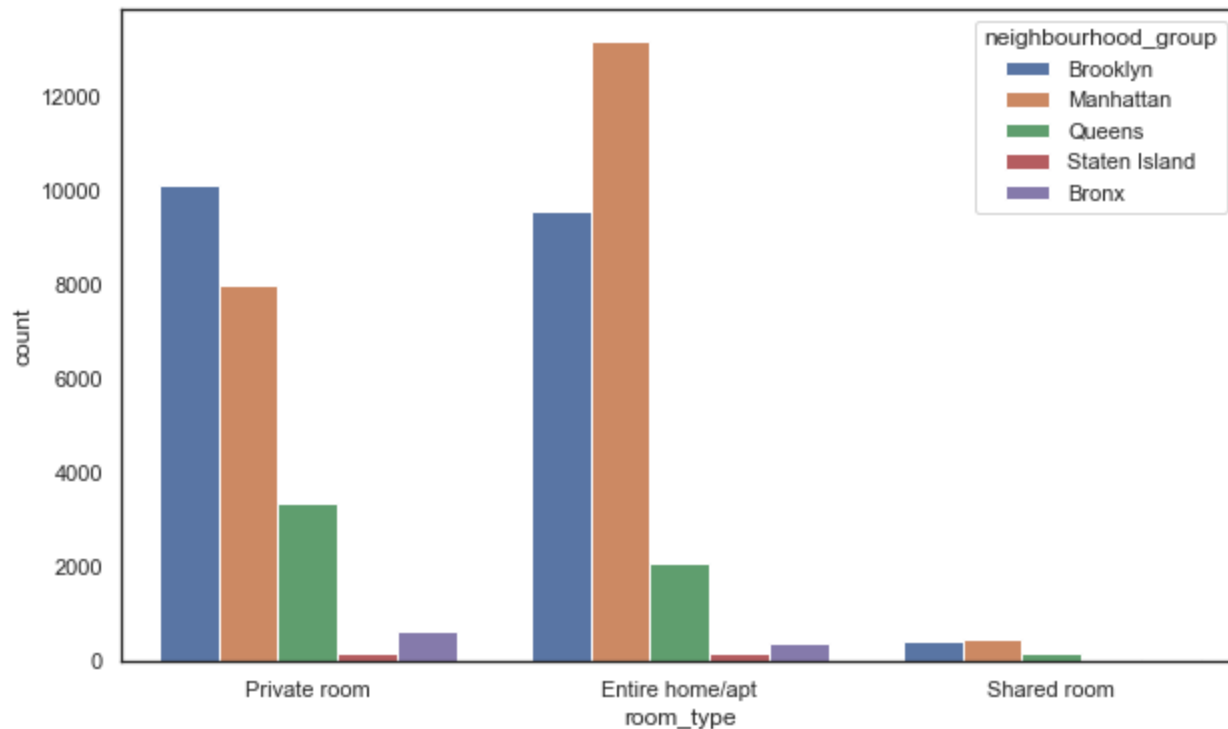
# Exploratory Data Analysis

- 3. Expensive Neighborhood Group (Location of NYC)



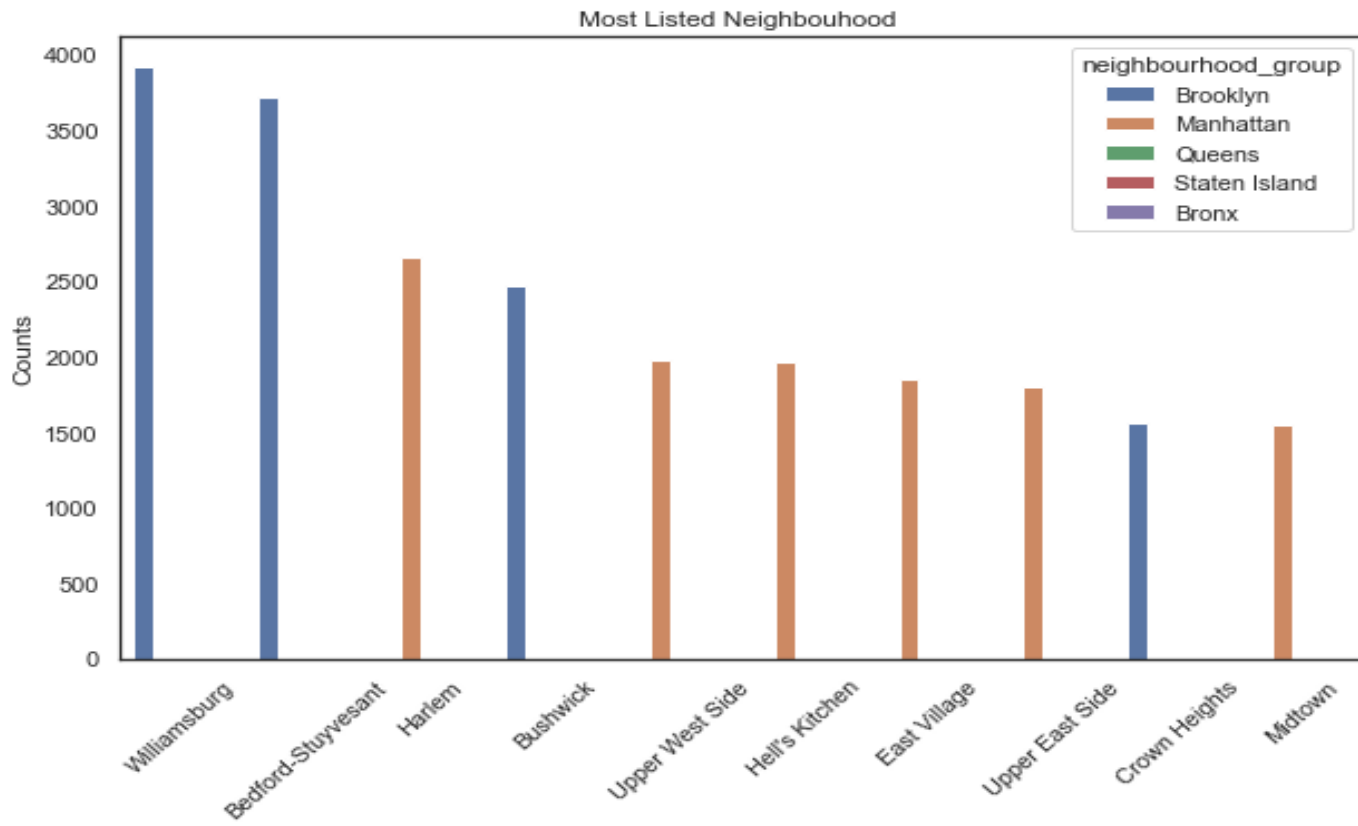
# Exploratory Data Analysis

## 4. Most Listing in Each Room



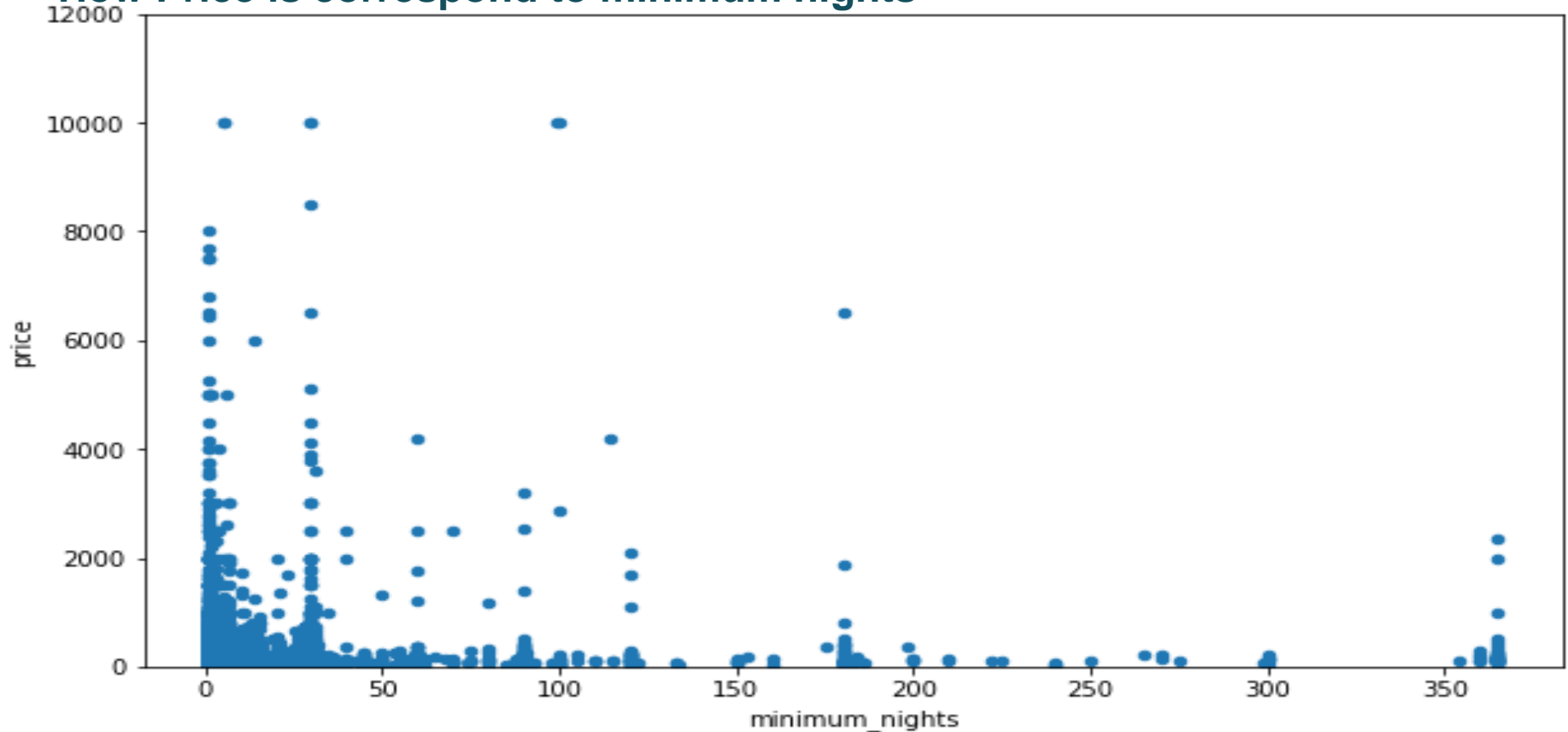
# Exploratory Data Analysis

## 5. Most Listed Neighborhood (Area of Location in NYC) (ex : Kensington, Midtown, Harlem etc..)



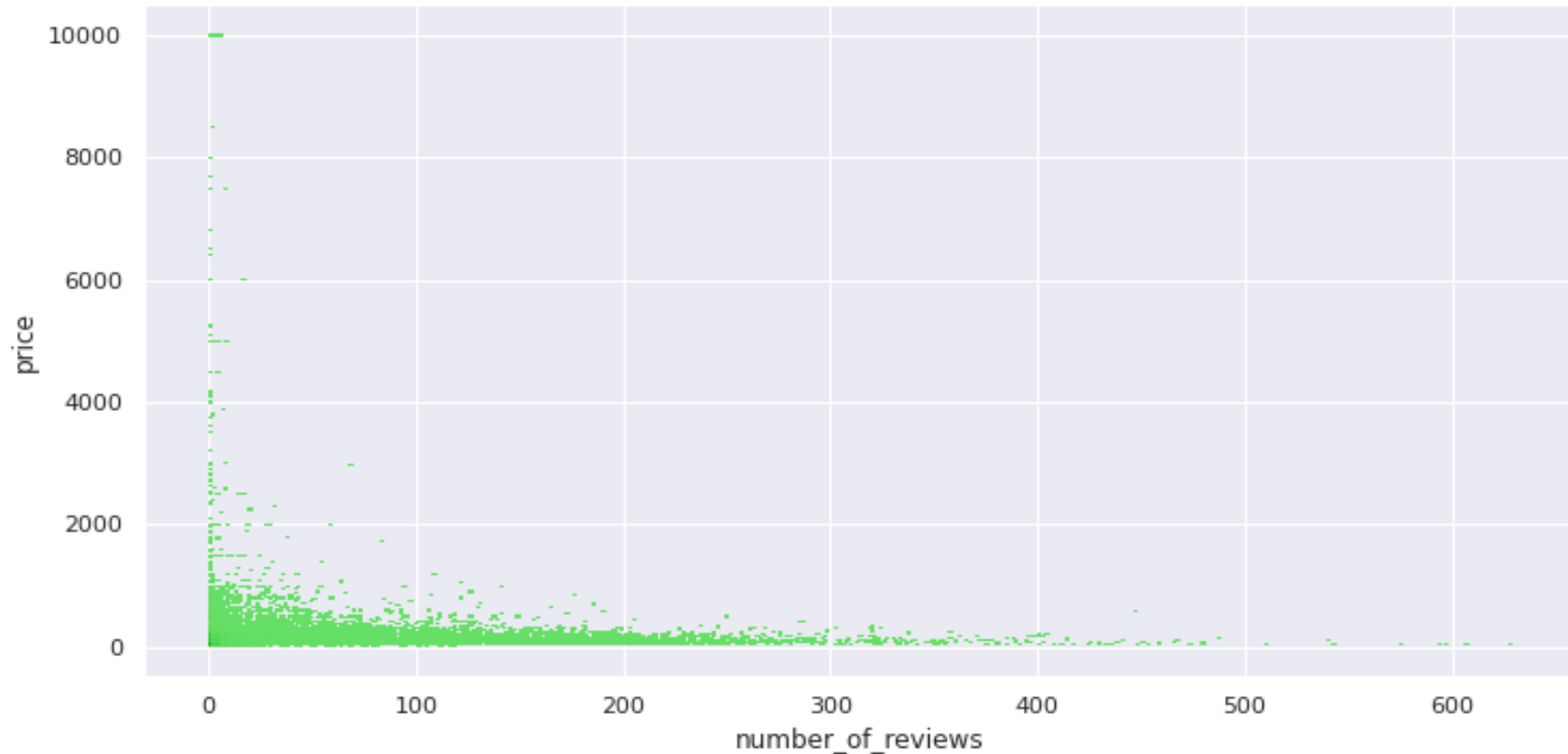
# Exploratory Data Analysis

How Price is correspond to minimum nights



# Exploratory Data Analysis

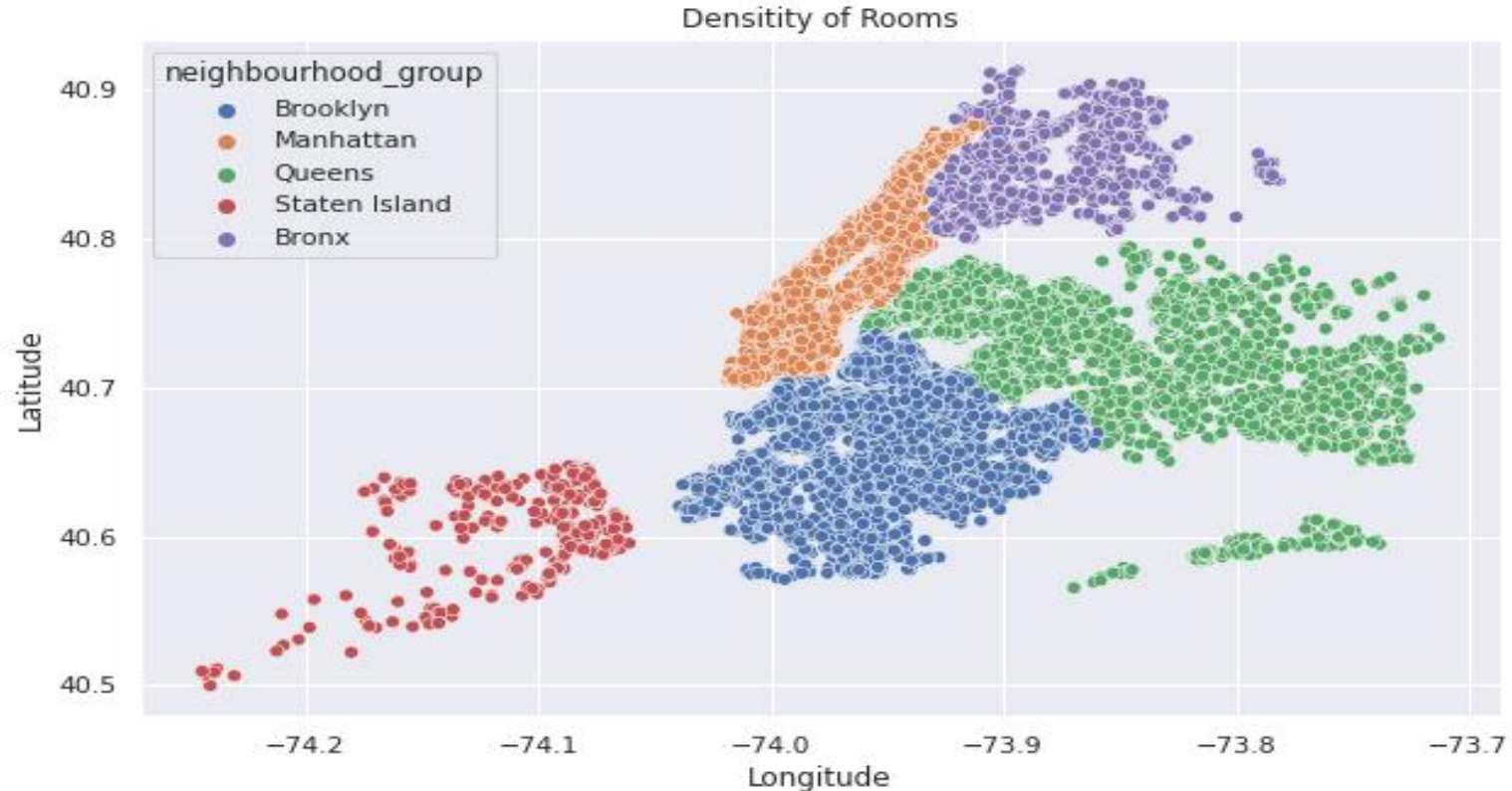
## 6. Number of Reviews





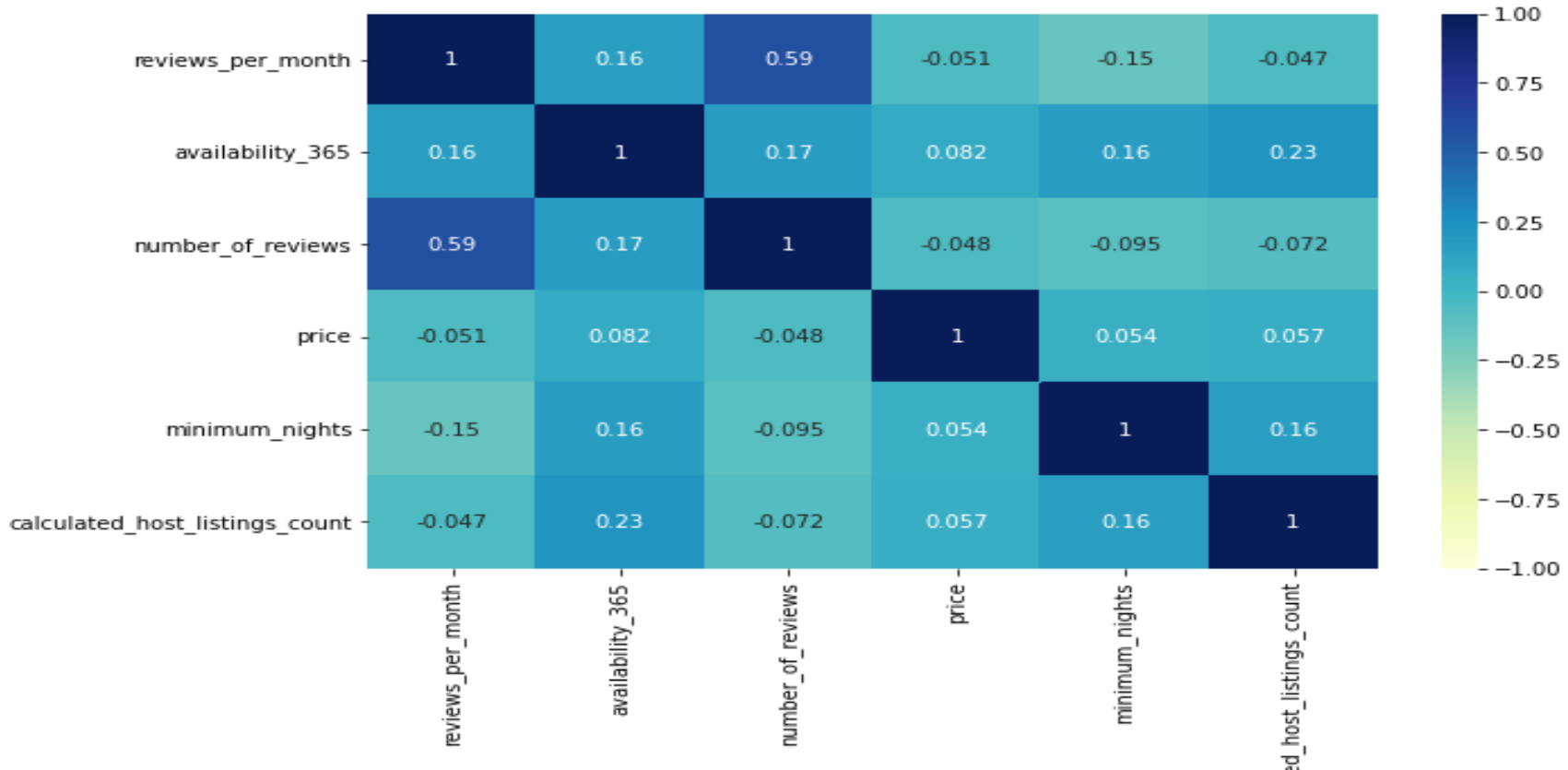
# Exploratory Data Analysis

## 7. Most Densd Places According to Latitude and Longitude

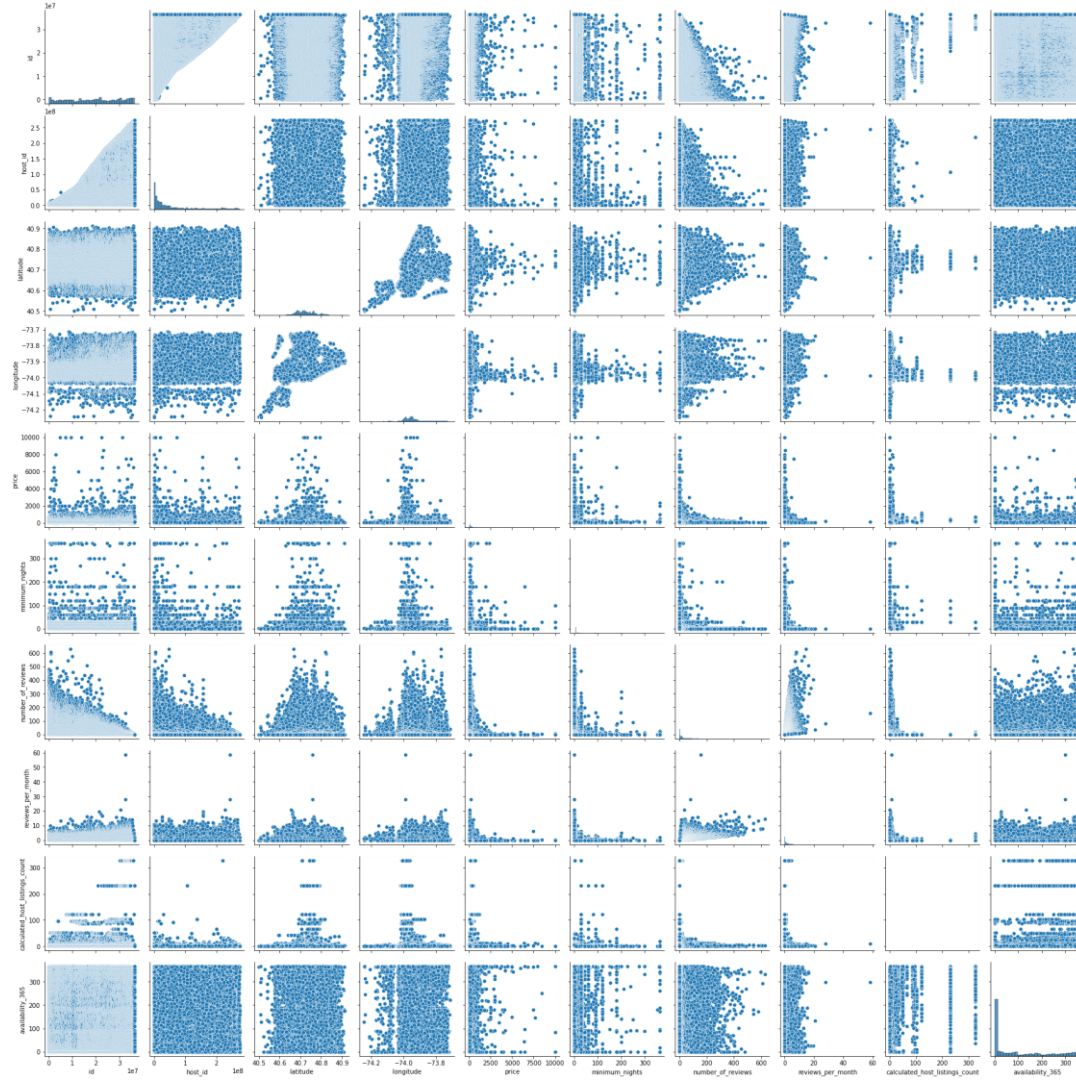


# Exploratory Data Analysis

## Correlation Heatmap



# Pair Plot



# Conclusions

1. host\_id reveals that some host have a huge number of property ownership above 300.
2. The Majority of the listings are located in Manhattan and Brooklyn whereas Bronx and Staten Island have a miniscule share.
3. Manhattan is the most expensive neighbourhood\_group followed by Brooklyn Staten Island Queens and Bronx.
4. Most Listings offer Entire home followed by Private Room and Shared Room
5. Brooklyn offers nearly the same number of private rooms and entire home whereas Manhattan offers highest number of entire homes followed by private rooms.

# Conclusions

6. Listing of shared room is very little and staten islands and bronx offer very few shared rooms.
7. Williamsburg, Bedford-Stuyvesant and Harlem are the most listed neighbourhood.
8. Brooklyn and Manhattan has the majority share of listings.

Thank you