

# Capstone Project-1

## Airbnb Booking Analysis

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# Introduction:

Airbnb is an American company since 2008 . It is an online marketplace that connects people who want to rent out their homes with people who are looking for accomodation at specific location. On the other hand this platform is useful for both host and travelers where hosts earn extra income in the form of rent and travelers have a chance to interact with the locals and saving some money.

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# Problem statement

1. For this project we are analyzing the year 2019 data.
2. Our main objective is to find out the key insights. For this purpose, we will explore and visualize the dataset from airbnb using basic Elementary Data Analysis (EDA) techniques.
3. Data analysis on thousands of listings provided through airbnb is a crucial factor for the company.
4. We will be finding out the insights from Airbnb listings based on their location, price range, room type, listing name and other related factors.

# Understanding the data

There are 49000 observations with various types of columns in our datasets.

List of columns:

1.id	9.Room_type
2.Name	10.Price
3.Host_id	11.Minimum_nights
4.Host_name	12.Number_of_reviews
5.Neighbourhood_group	13.Last_review
6.Neighbourhood	14.reviews_per_month
7.Latitude	15.Calculated_host_listing_count
8.Longitude	16.Availability_365

# Agenda:

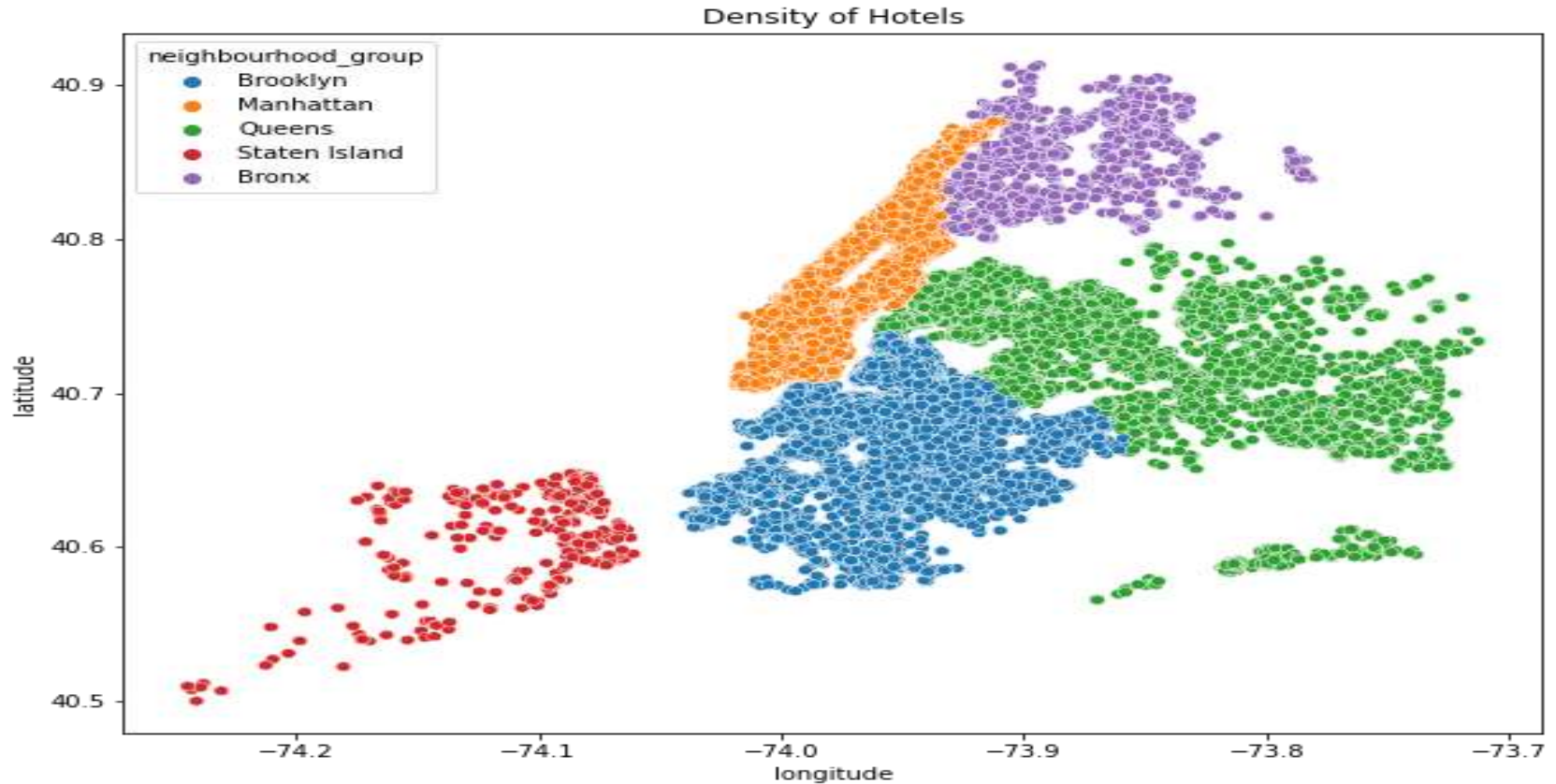
**We try to answer the following questions for Airbnb:**

- **Which location is most preferred by guests?**
- **How many hotels are in the neighbourhood group?**
- **Determine the count of a neighbourhood group?**
- **Determine the most popular neighbourhood?**

## Agenda(cont...) :

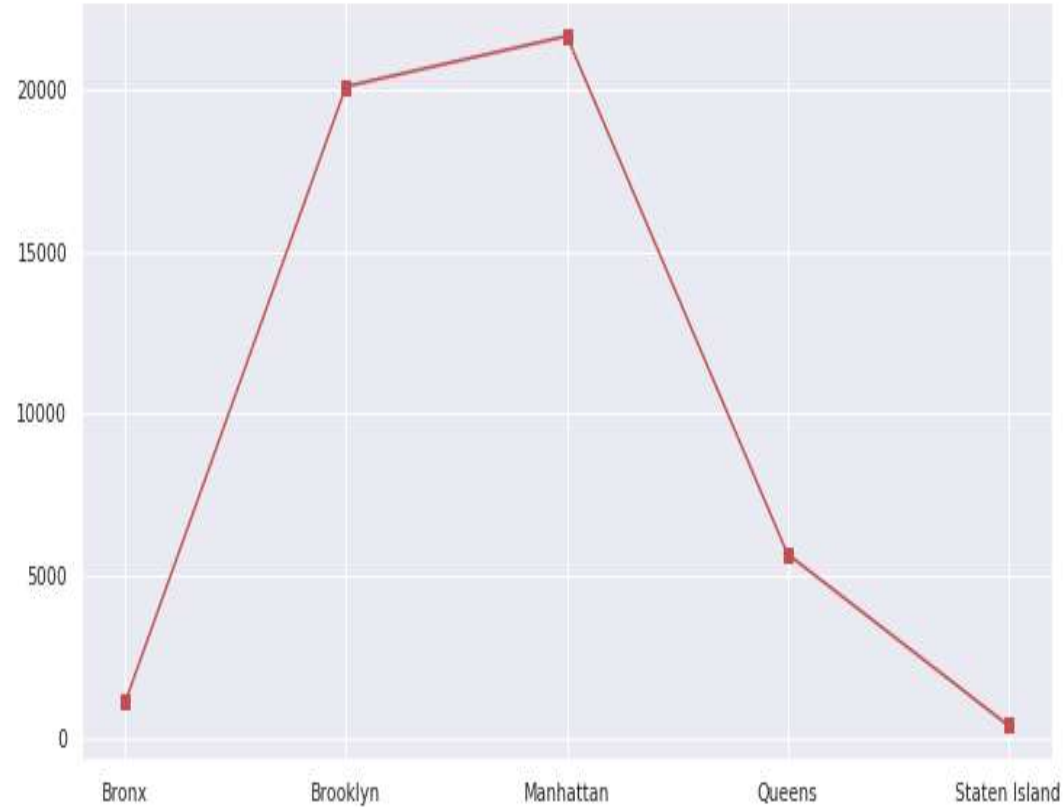
- What is the average price of different room types according to neighborhood groups?
- Which hosts are busiest and why?
- Determine the availability of rooms at different neighbourhood groups and average availability of rooms at different room types.
- Determine the average minimum nights of staying in different neighborhood groups and room types?
- Analyzing the revenue in neighbourhood group

# New York City Map



# Number of hotels in the neighbourhood group

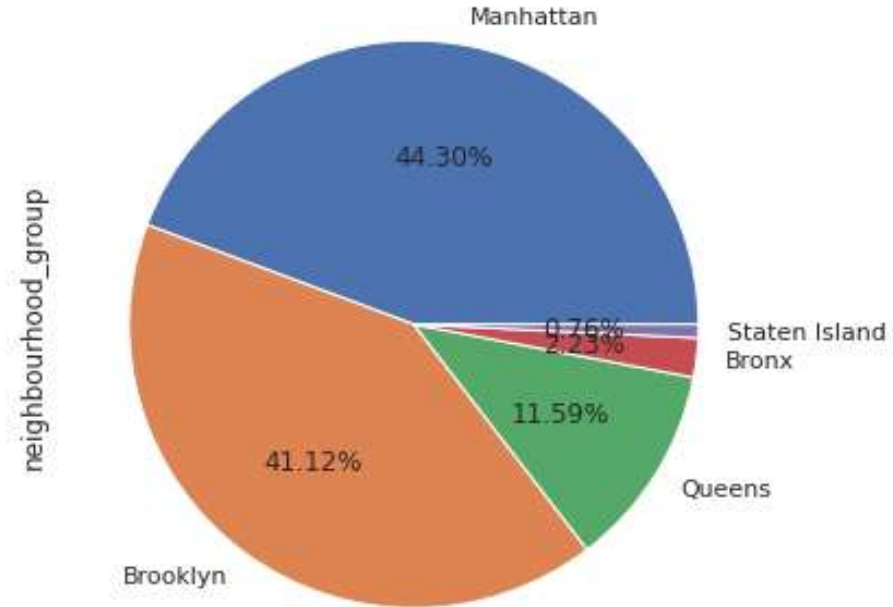
- In this Line chart Manhattan & Brooklyn are the most preferred neighbourhood groups for hotels.
- Bronx & Staten Island are almost the same and least preferred neighbourhood group.
- Queens neighbourhood group has the proportionate number of hotels.





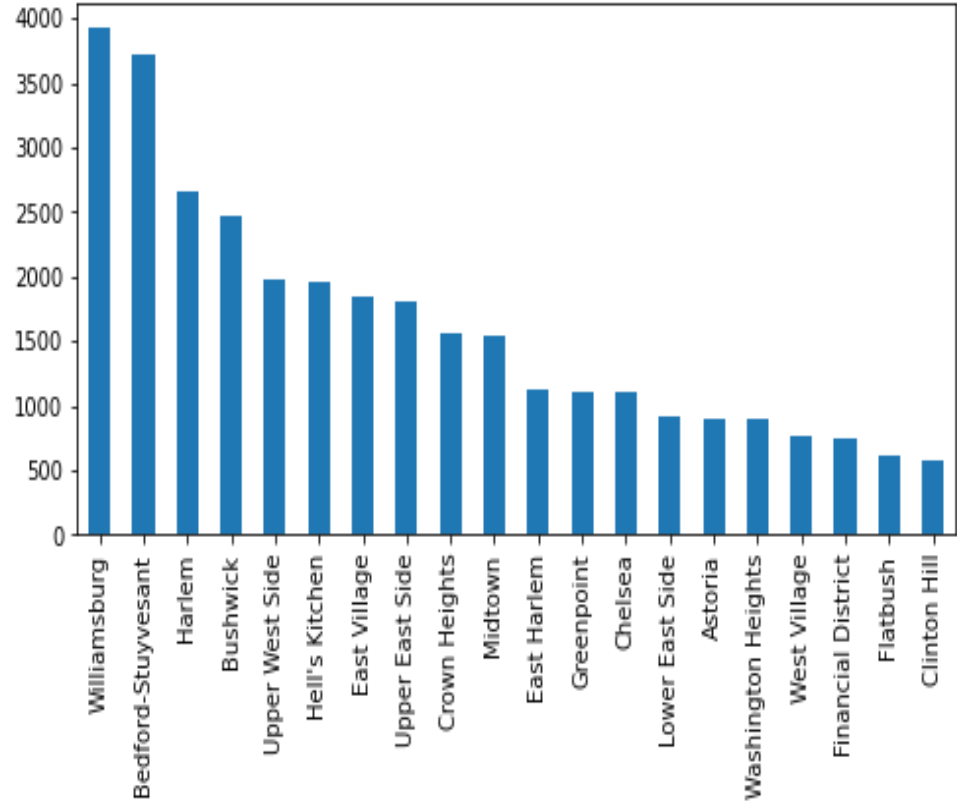
# Total count of a neighbourhood group

- In this pie chart Manhattan and Brooklyn have the highest count of neighbourhood groups.
- Bronx and Staten Island have the least count contribution of neighbourhood groups.
- Queens has the average count of neighbourhood groups.



# The most popular neighbourhood

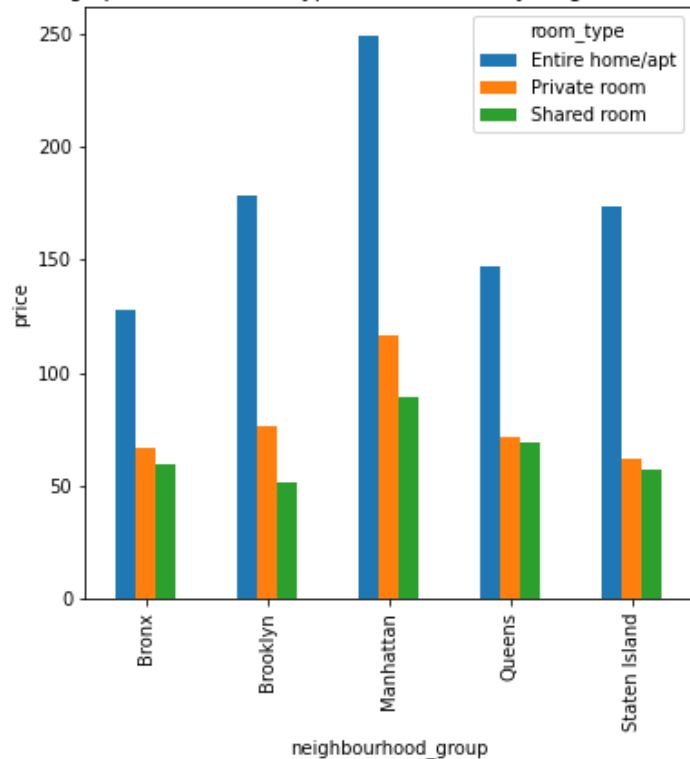
- In this bar chart of top 20 neighborhood groups, the Williamsburg and Bedford-Stuyvesant are the most popular neighbourhood, while Flatbush and Clinton Hill are the least popular neighbourhood.



# The average price of different room types according to different neighbourhood group

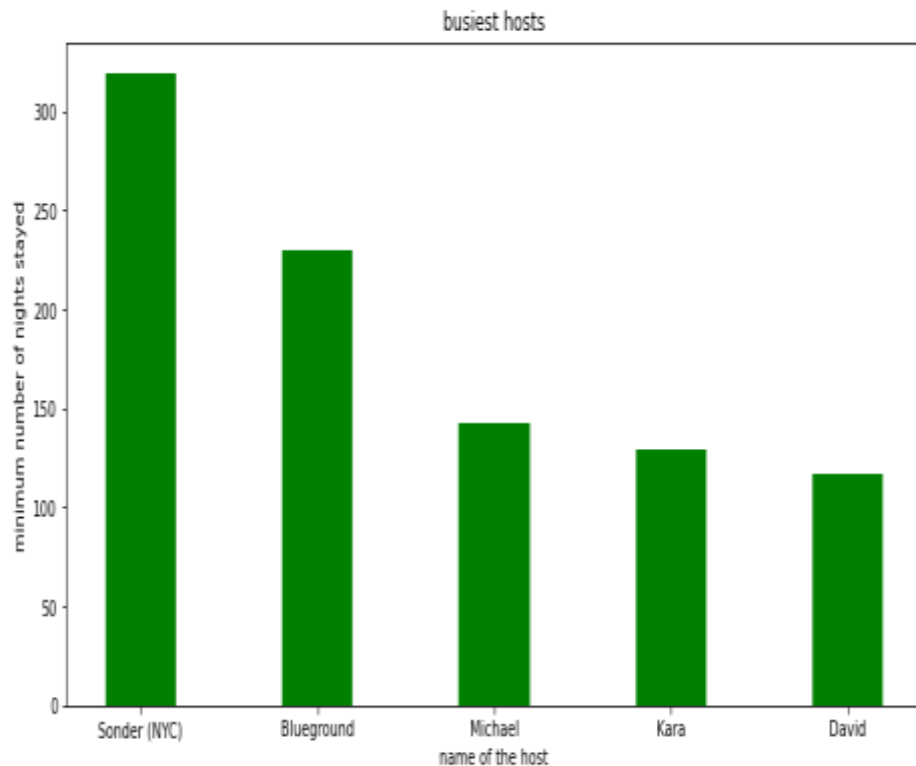
- In this chart Entire home has the highest average price in the Manhattan group while Shared room has the least.
- Bronx and Staten Island are almost the same in prices.

average price of different type of room in every neighbourhood group



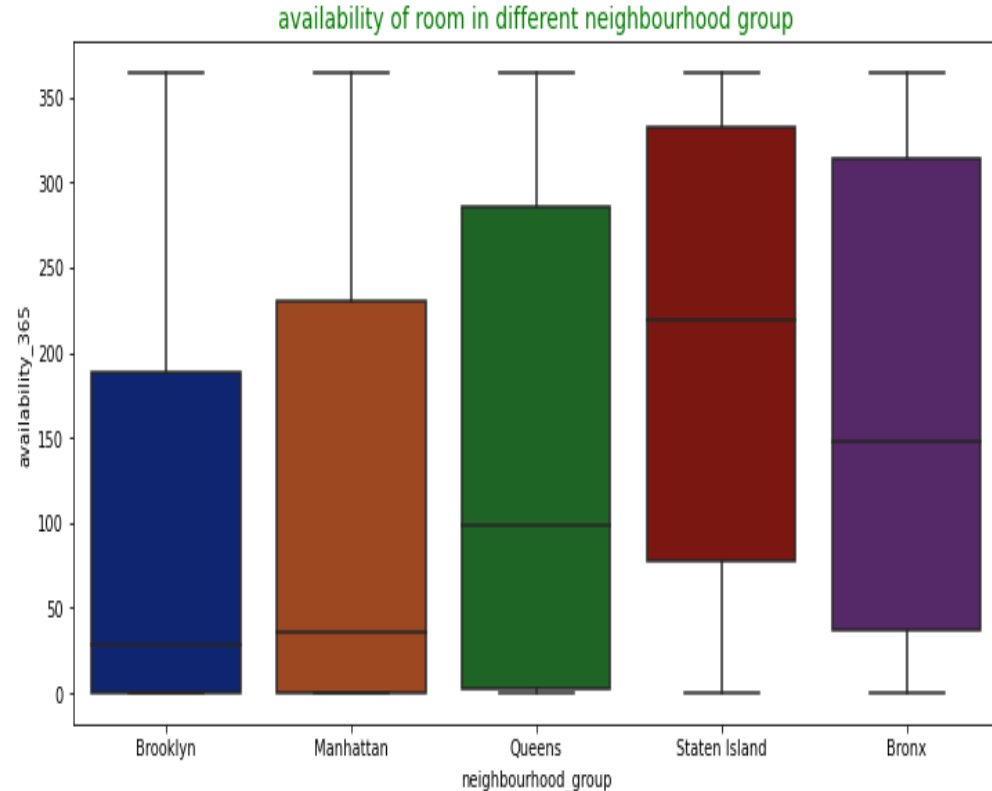
# These hosts are the busiest

According to the busiest host 'Sonder(NYC)' is the busiest host while 'David' is the least busy.



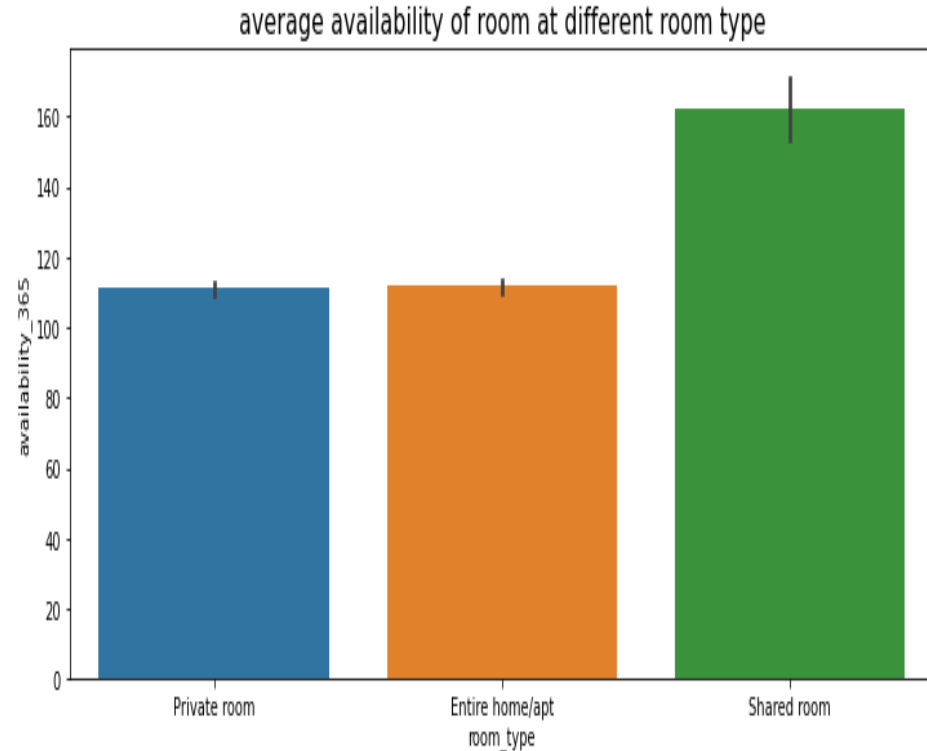
# Availability of room at different neighbourhood group

- Manhattan has the highest availability of room.
- Staten Island has the least availability of rooms in Comparison to a different neighbourhood group.



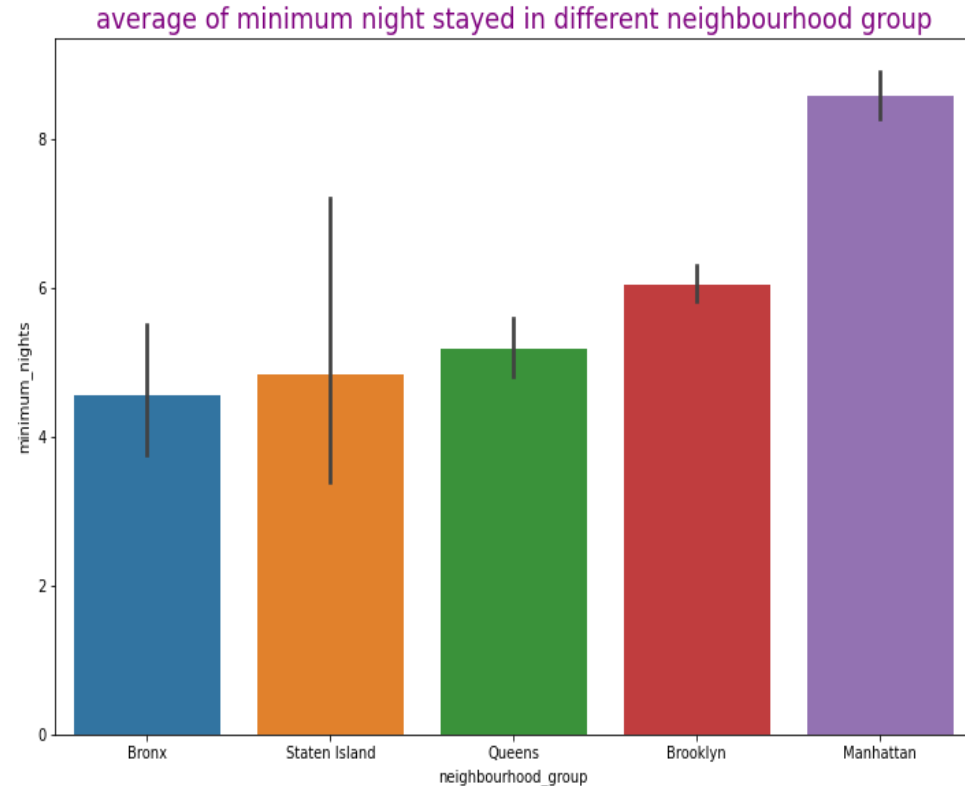
# The average availability of rooms at different room type

- Here the highest average availability of rooms is in Shared rooms.
- Private room or Entire home has least average availability at different room types.



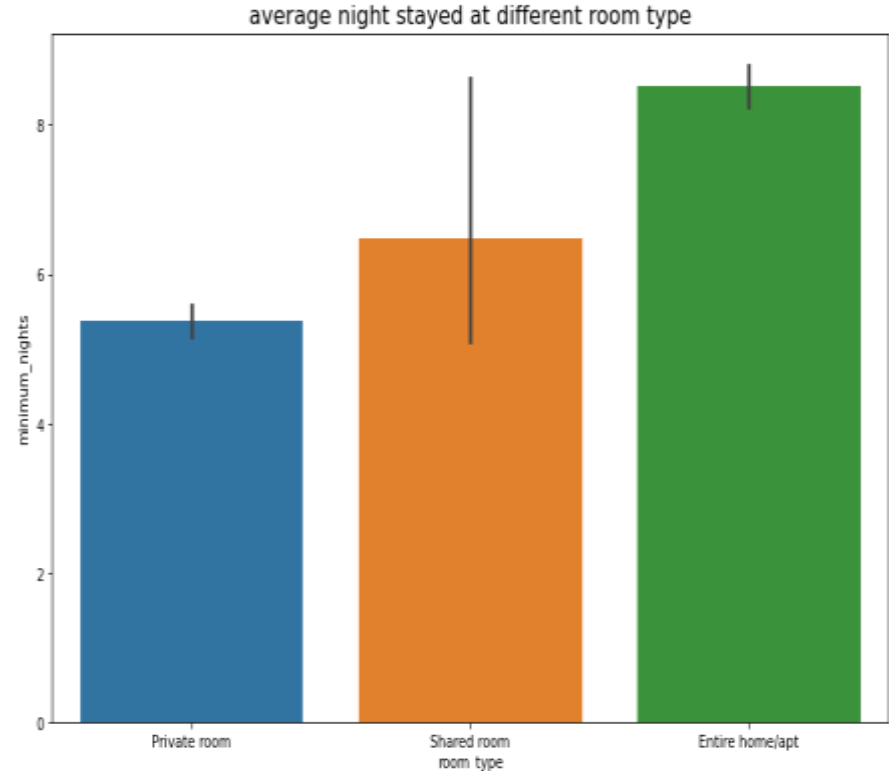
## Average of minimum night stayed in different neighbourhood group

- Here Manhattan has the highest average of minimum night stayed in different neighbourhood group
- Bronx has the least average minimum night stayed.



# Average night stayed at different room type

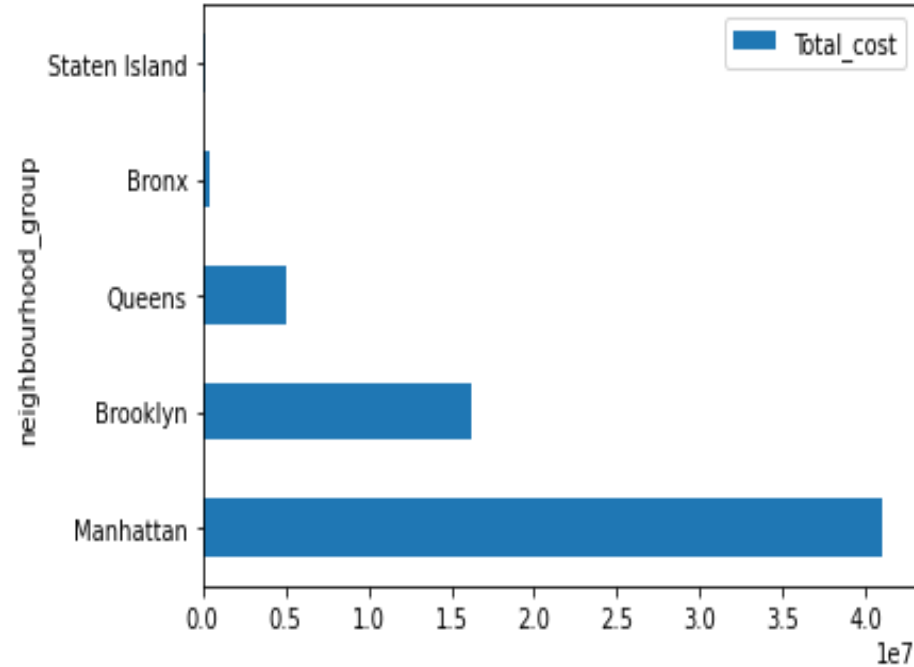
- Entire home/apt has the highest average night stayed
- Private room has least average night stayed at different room type.





# Analyzing the revenue in neighbourhood group

Manhattan has the highest revenue while Staten Island has the least according to the neighbourhood group



# Challenges Faced:

- >Reading the dataset and understanding the meaning of columns.
- >For answering some of the questions we had to understand the business model of Airbnb that how they work.
- >Handling Errors and null values.
- >Designing multiple visualizations to summarize the information in the dataset and successfully communicate the results and trends to the reader.

## Conclusion:

- >Manhattan is the most preferred neighbourhood group in New York for hosts to do their business.**
- > In the Manhattan has the highest no. of hotels which will be helpful for hosts as well as customers.**
- >In between the Customer most popular neighbourhood is Williamsburg while Clinton hill is the least popular.**
- >Customers pay highest amount in Manhattan for entire home and lowest amount is pay in Bronx.**

## Conclusion(contd.):

- >People stayed for longer duration of time in there Sonder (NYC) host while people least preferred for stayed at David host.
- >Customers can get easily room in Manhattan While Staten Island has least availability of room.
- >Customers can get easily availability of room in “shared Room” for a whole year.
- >Manhattan has generated the highest revenue while Staten Island has the least.

THANK YOU