

# Capstone Project - 1

## Airbnb Booking Analysis

Team Member

Harish Kollana

## Lets Find the Unseen And Underlying Data Trends

1. Define Problem Statement
2. Explorative Data Analysis





## The Dilemma

### How Airbnb Works



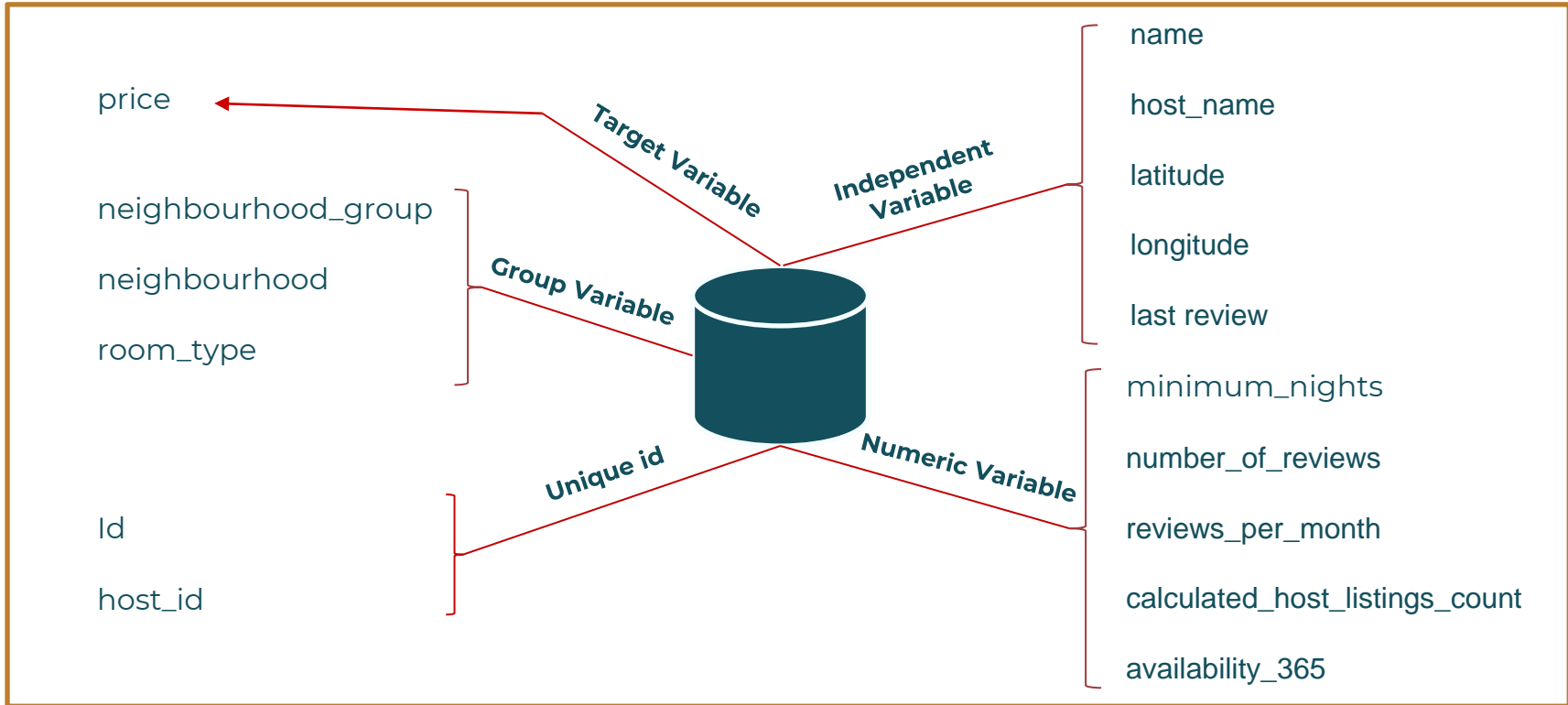
### Airbnb: A Marketplace for Traveler's

Airbnb is an American-based online marketplace company that connects travelers with a place's local inhabitants who want to rent their property to earn money. Airbnb provides services to travelers to get an affordable place and get a chance to know the residents of the place.

## Data Pipeline

1. **Data Processing** – In this Process we had done variable identification, Missing Values and Outliners Treatment
2. **Explorative Data Analysis** – In this Process we analysis on the pre processed data set from Data Processing

## Data Summary



## Data Summary

**host\_id:** it is a number value of a host and a single host can contain multiple host ids as they list on multiple neighborhoods

**host\_name:** it is the name of the host who hosts the listing

**neighbourhood\_group:** it is a group of neighborhoods

**neighborhood:** these are neighborhoods in another way we can think of them as cities

**latitude:** these are the latitude coordinates of the location of the property.

**longitude:** these are the longitude coordinates of the location of the property

## Data Summary

room type: it contains different types of rooms available across listings

price: it is the price of the listing to stay

minimum nights: min no of days were spent on that listing or property

number of reviews: how many reviews do the listing receive from customers

last review: when did the customer leave a review for that listing the last date of the review

reviews per month: how many reviews received per month

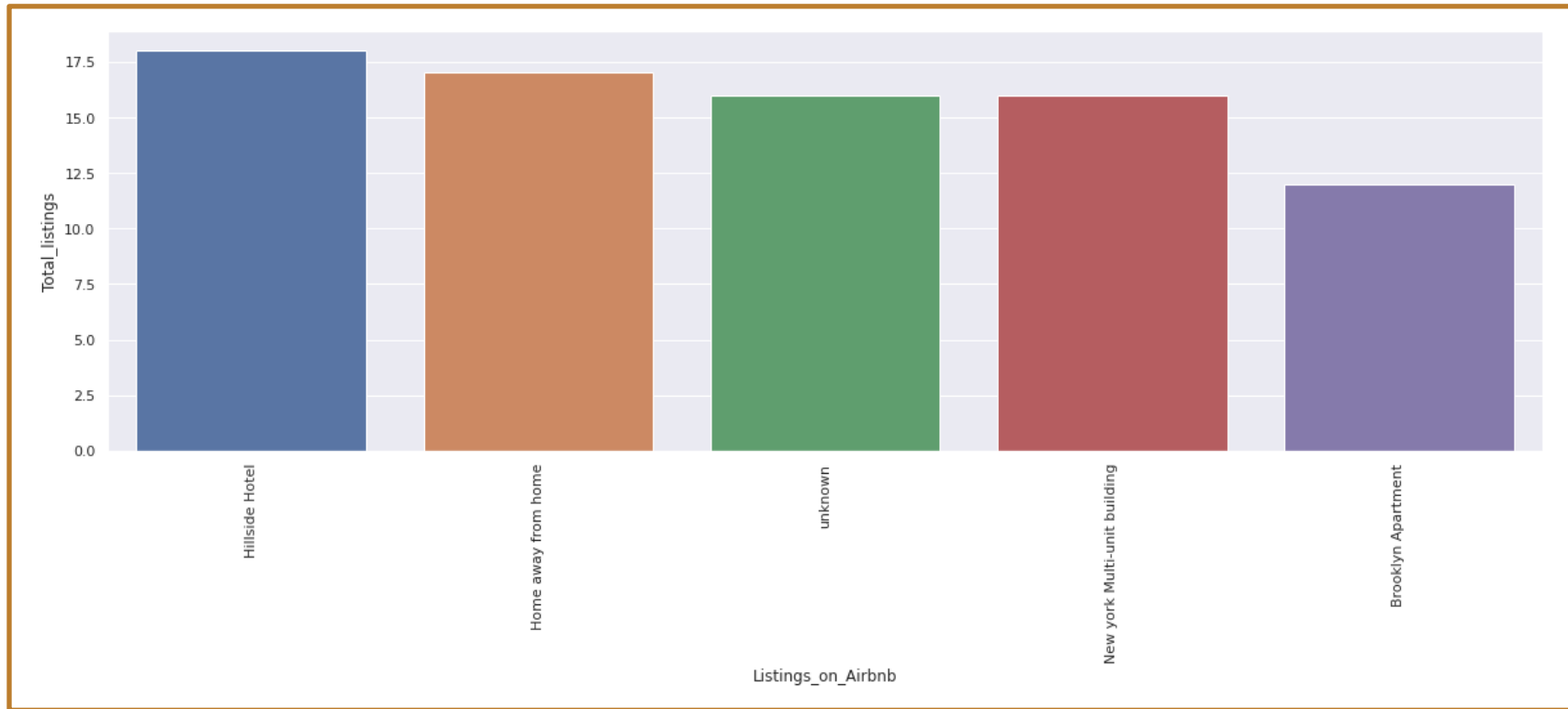
## Data Summary

calculated host listings count: no of listings submitted by the hosts. one host can submit multiple listings

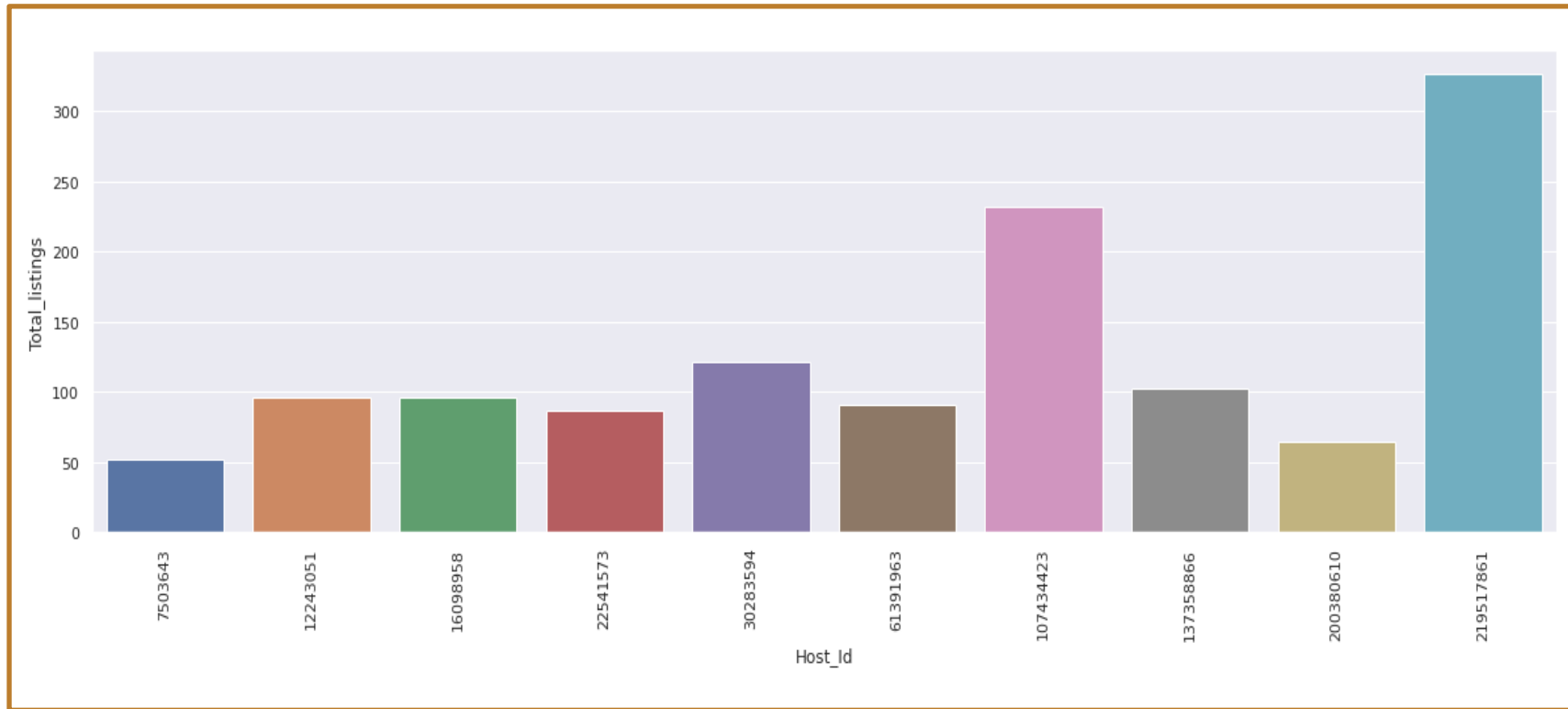
availability 365: how many days is a listing available through 365 days



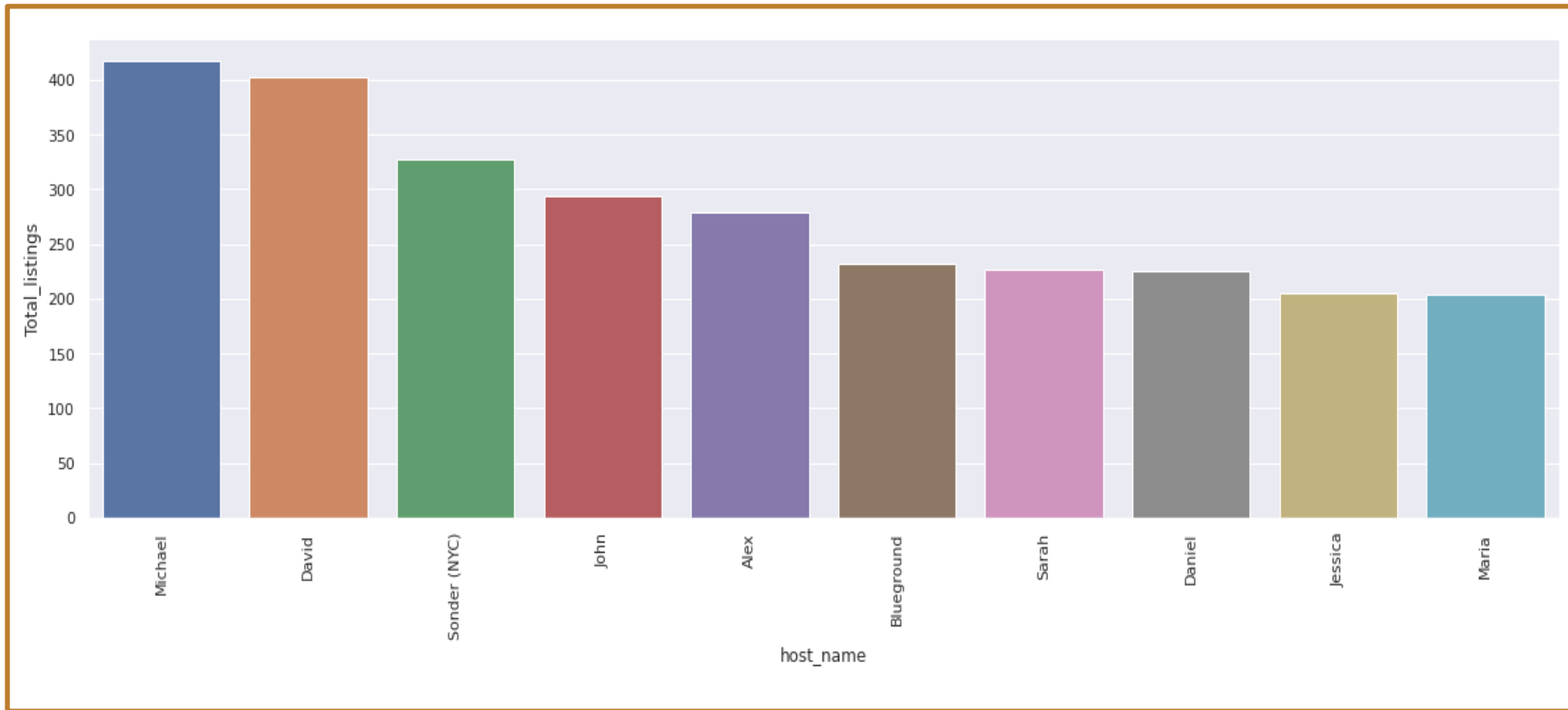
## What listing names are the most no of listings in NYC?



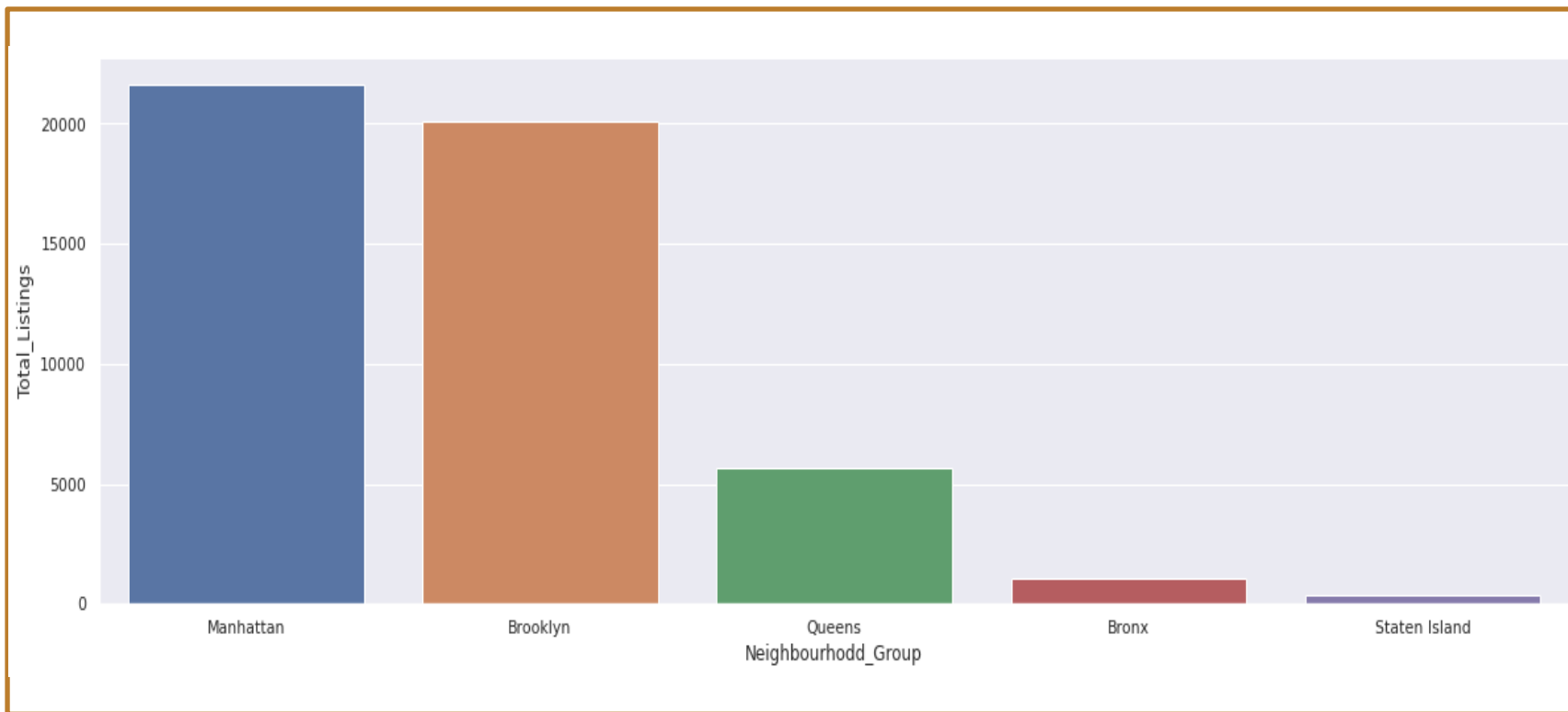
What are the host ids with most listings counts?



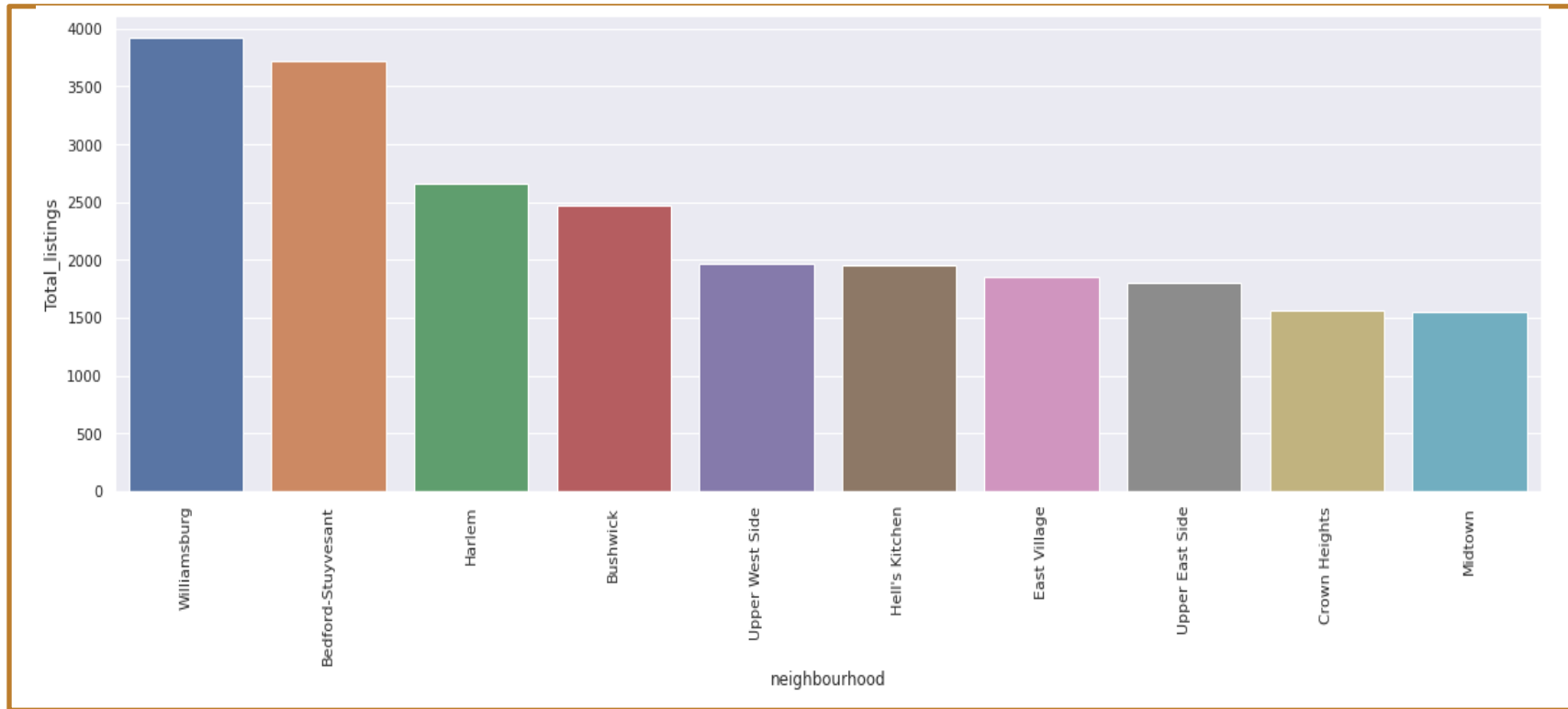
Find Out the top 10 hosts on the basis of no of listings in entire NYC?



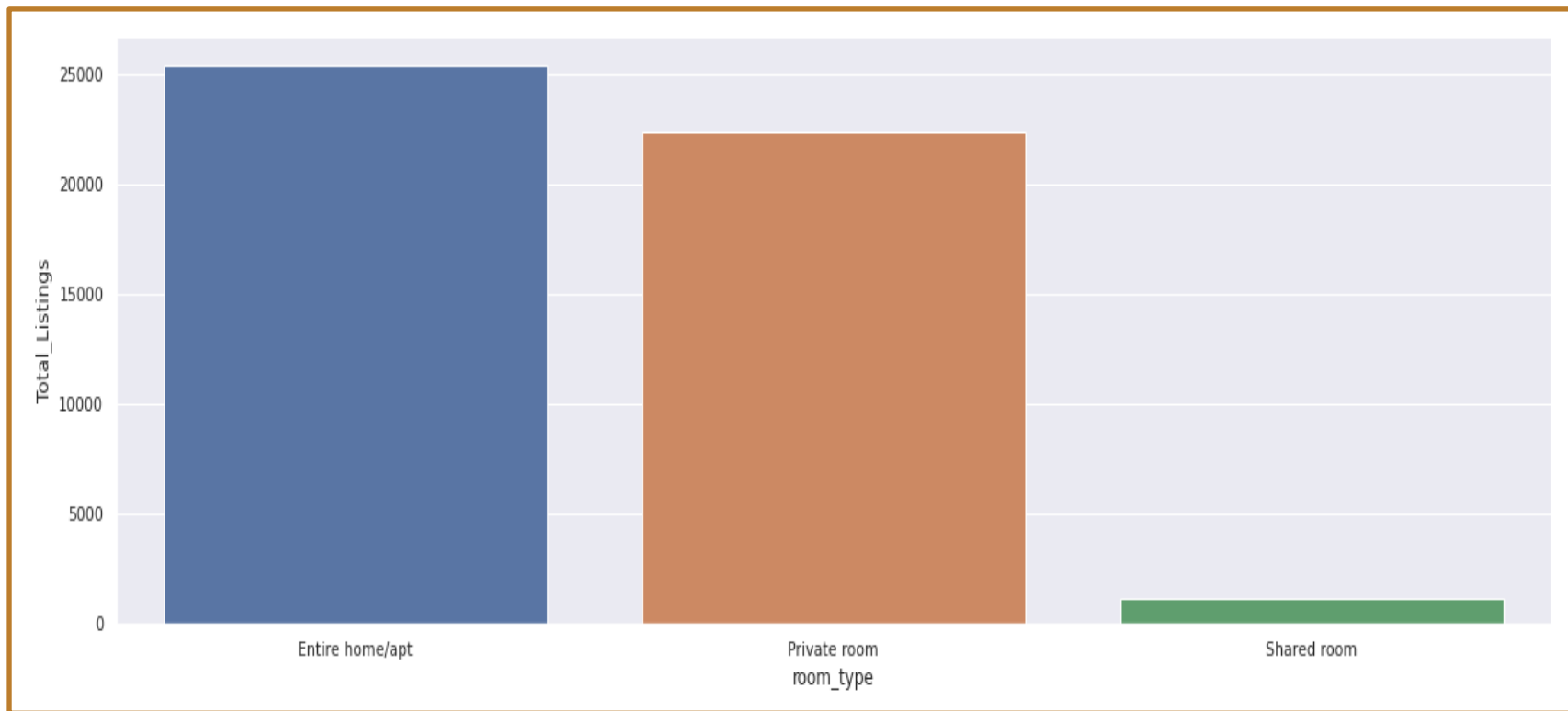
What are the Neighbourhood Groups with most listings counts?



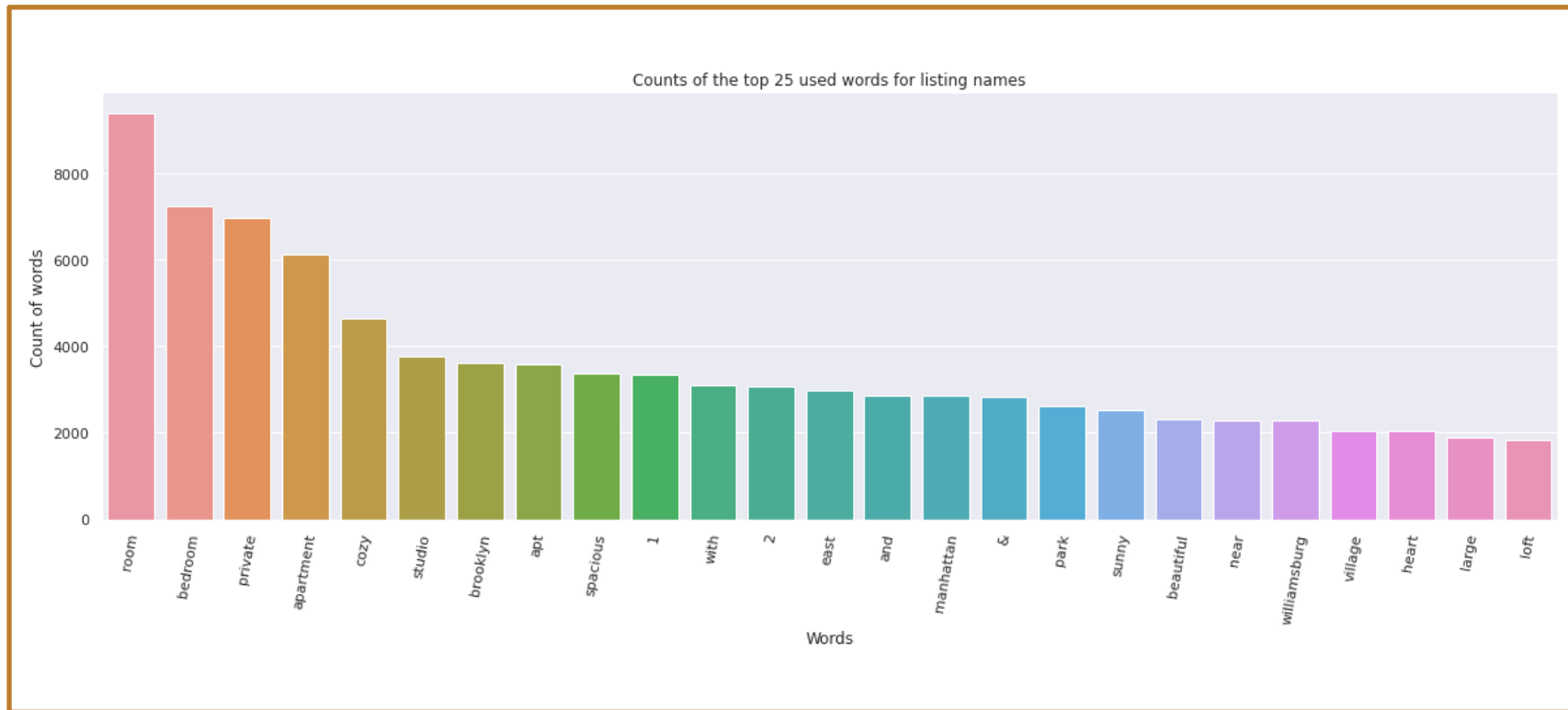
Find Out the top 10 neighbourhood on the basis of no of listings in entire NYC?



What are the room types with most listings counts?



## top 25 used words for listing names

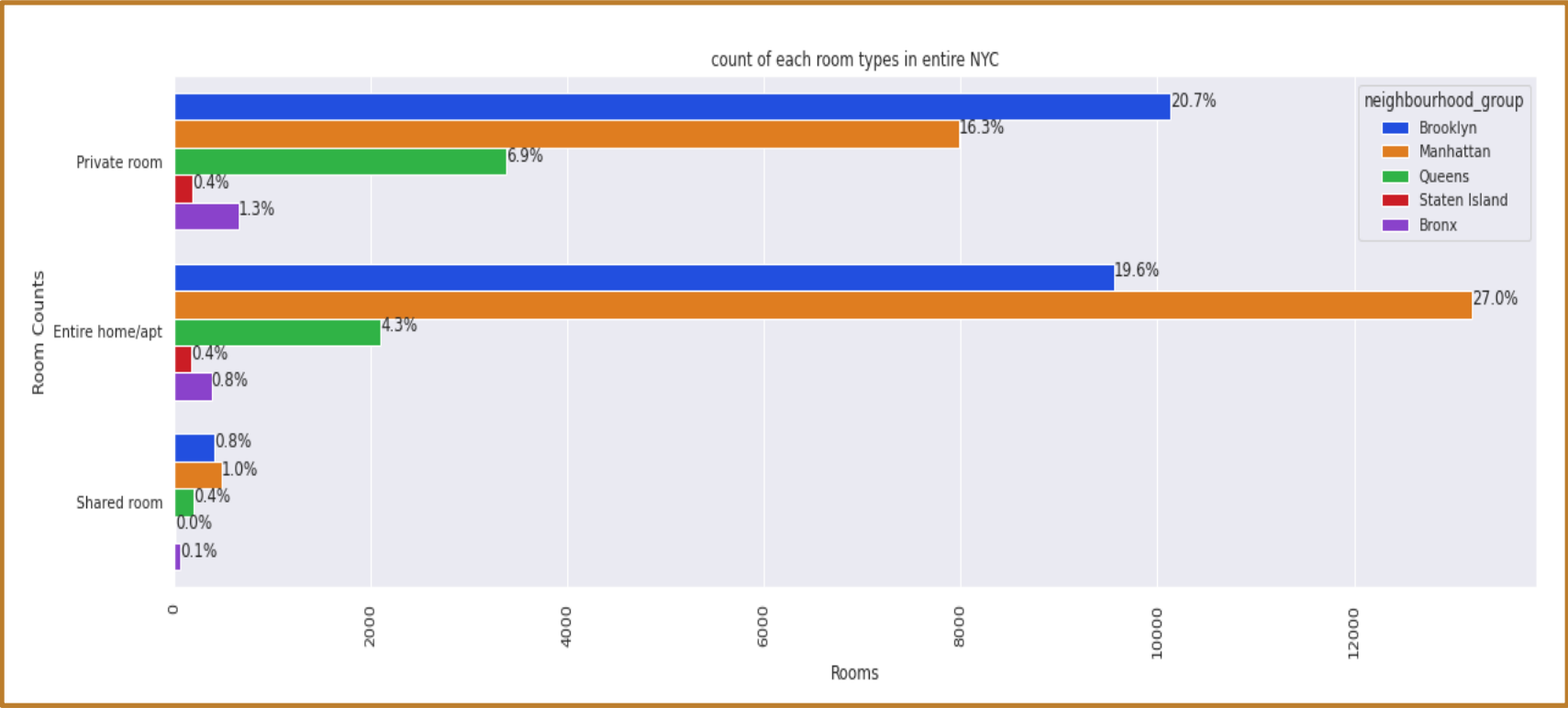


### word cloud visualization method

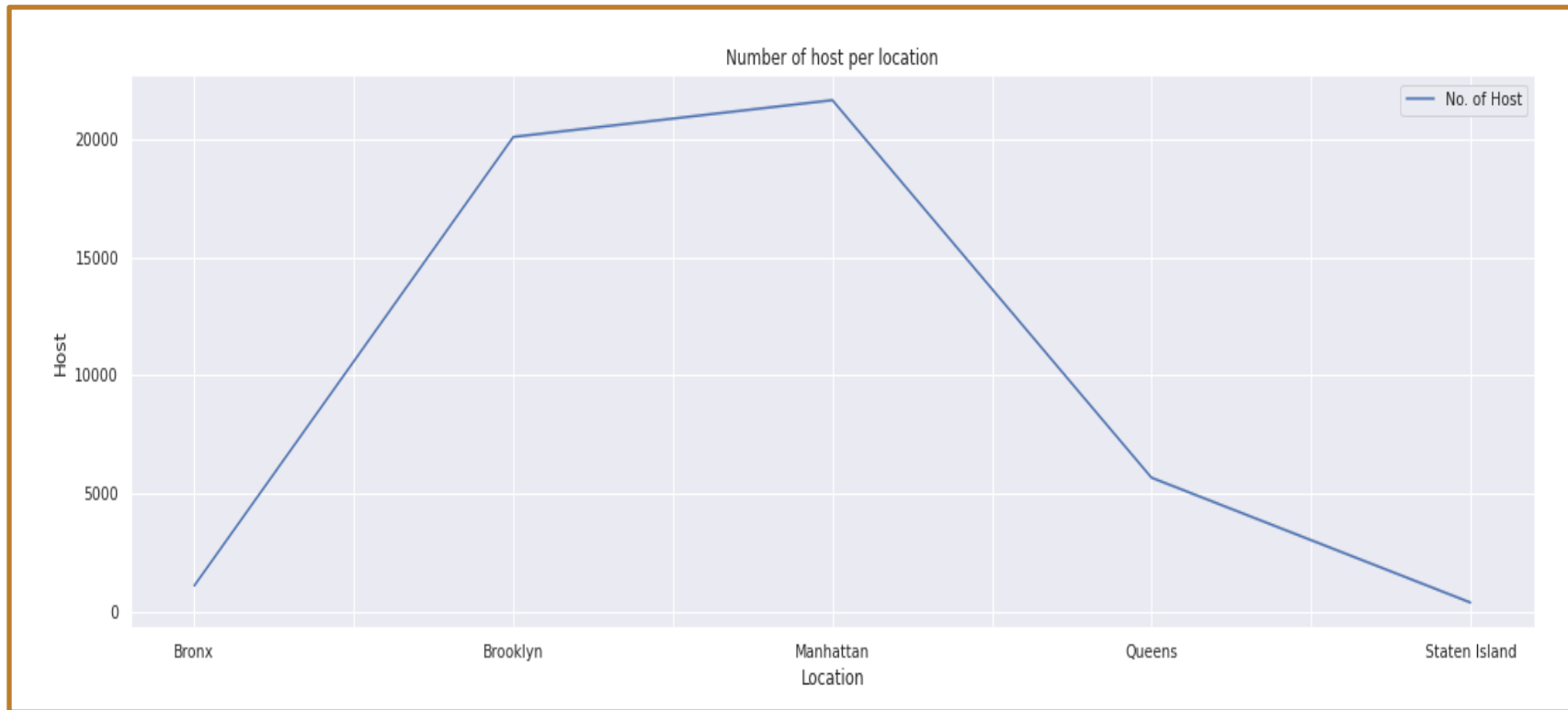




No of listings in Neighbourhood Group by Room types

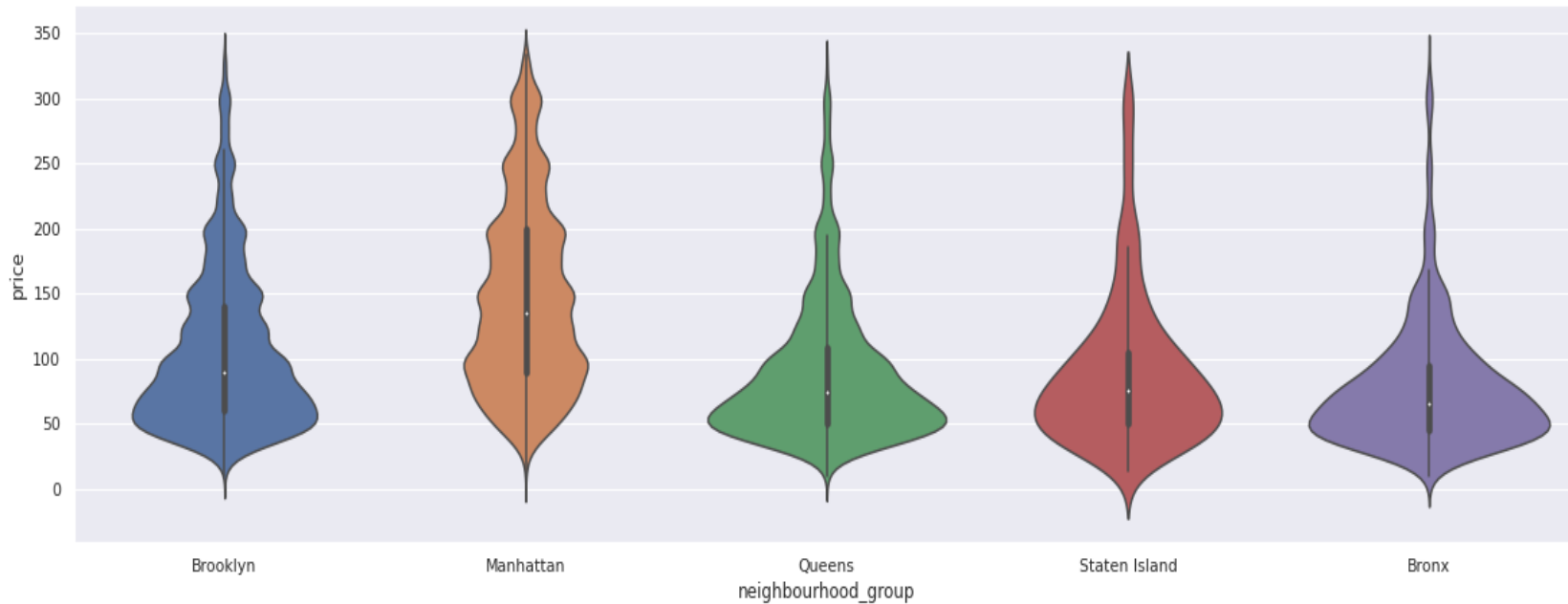


### No of hosts in location group by Neighborhood Group

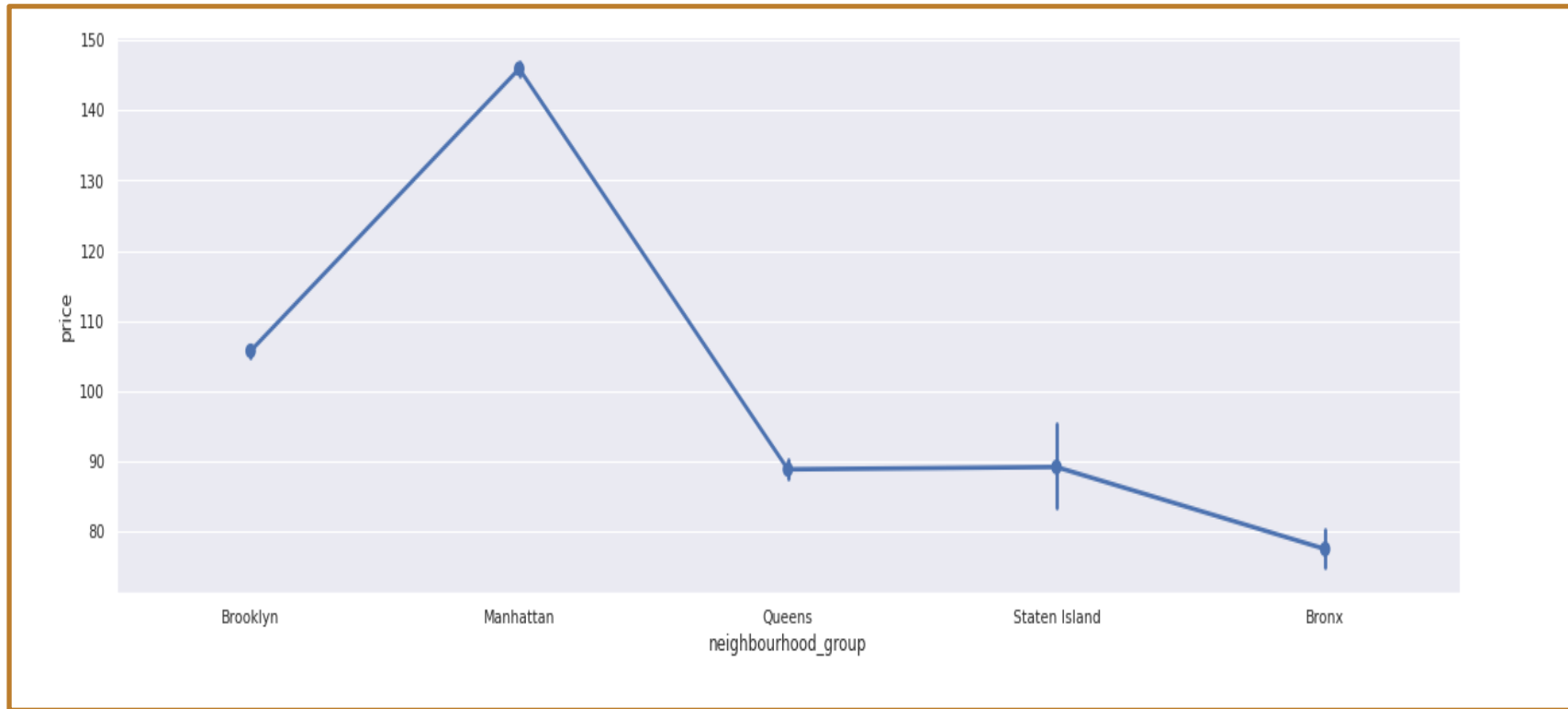


## EDA (continued)

Distribution of price(without extreme values) along neighborhood groups

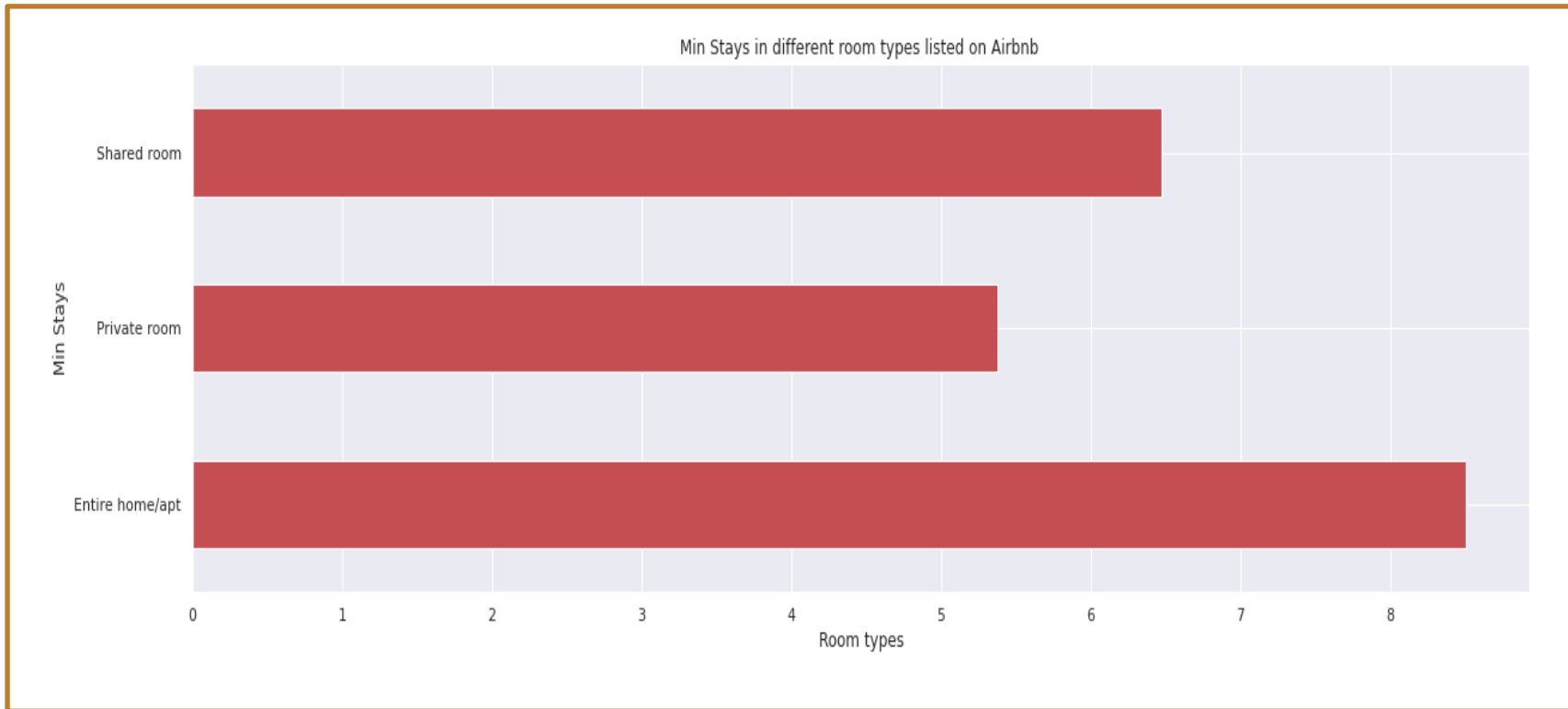


## EDA (continued)



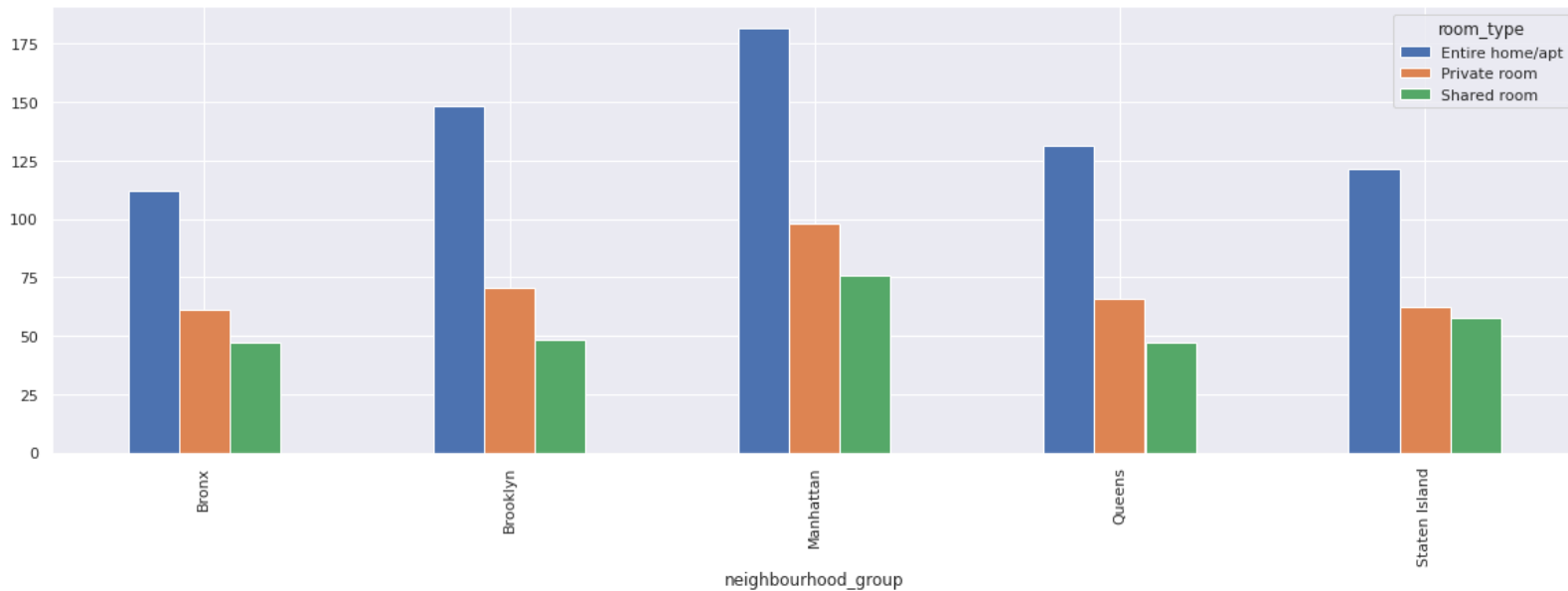
## EDA (continued)

Average for how many nights people stayed in each room\_types!

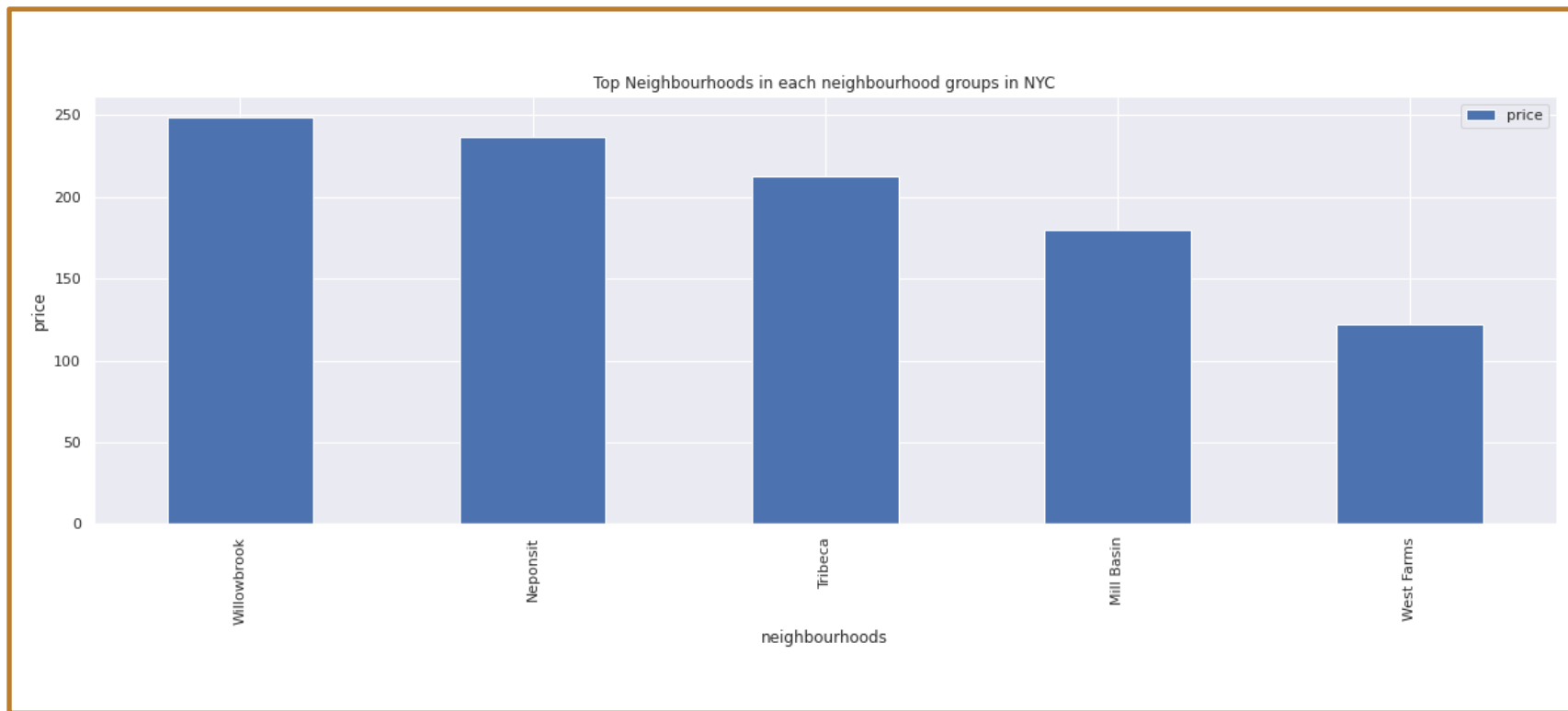


## EDA (continued)

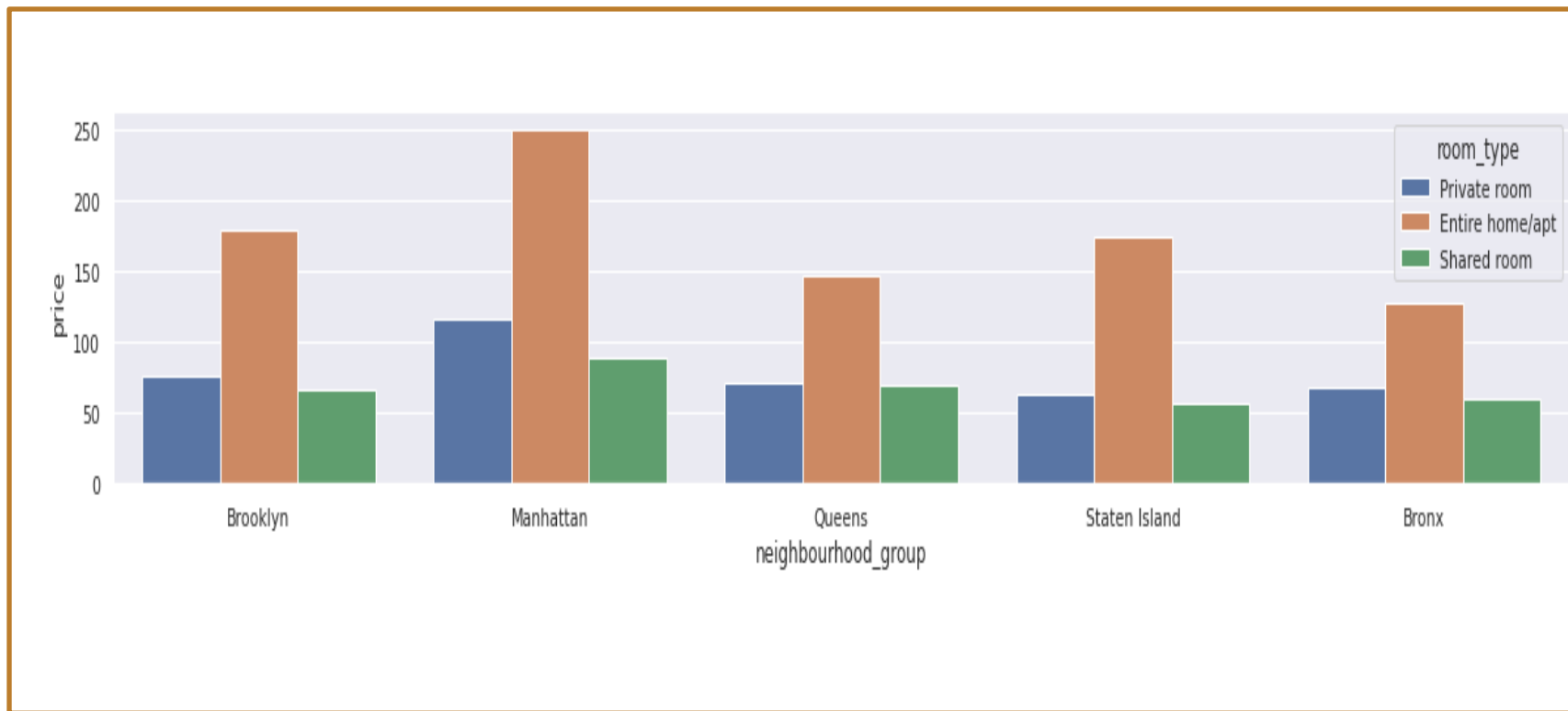
Distribution of price(without extreme values) along neighbourhood groups with room types



### Top neighbourhoods in NYC with respect to average price/day of Airbnb listings:

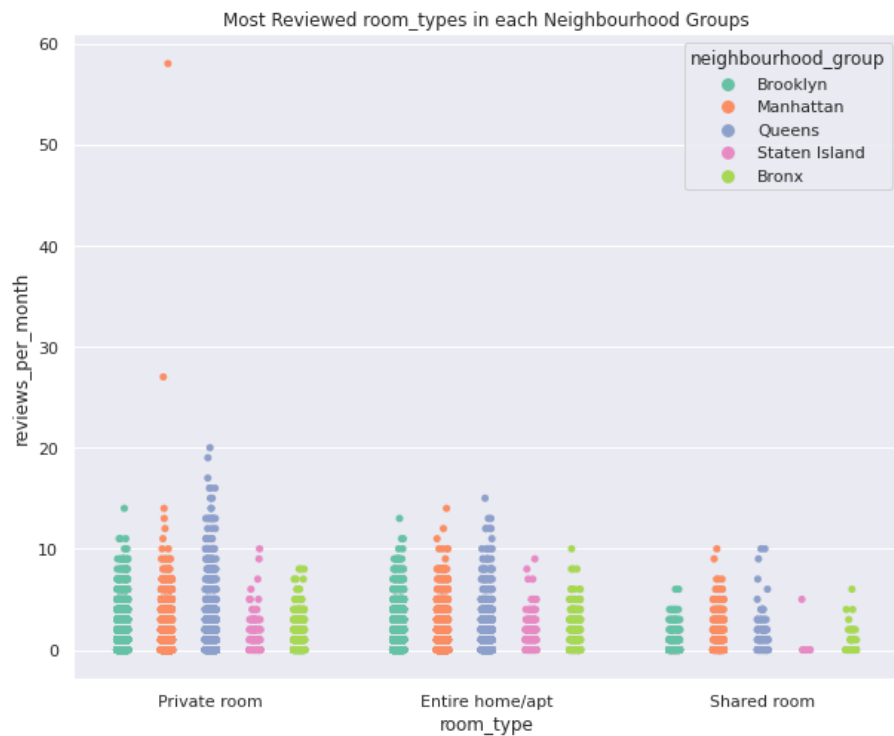


### Room\_types vs price on different neighbourhood groups!

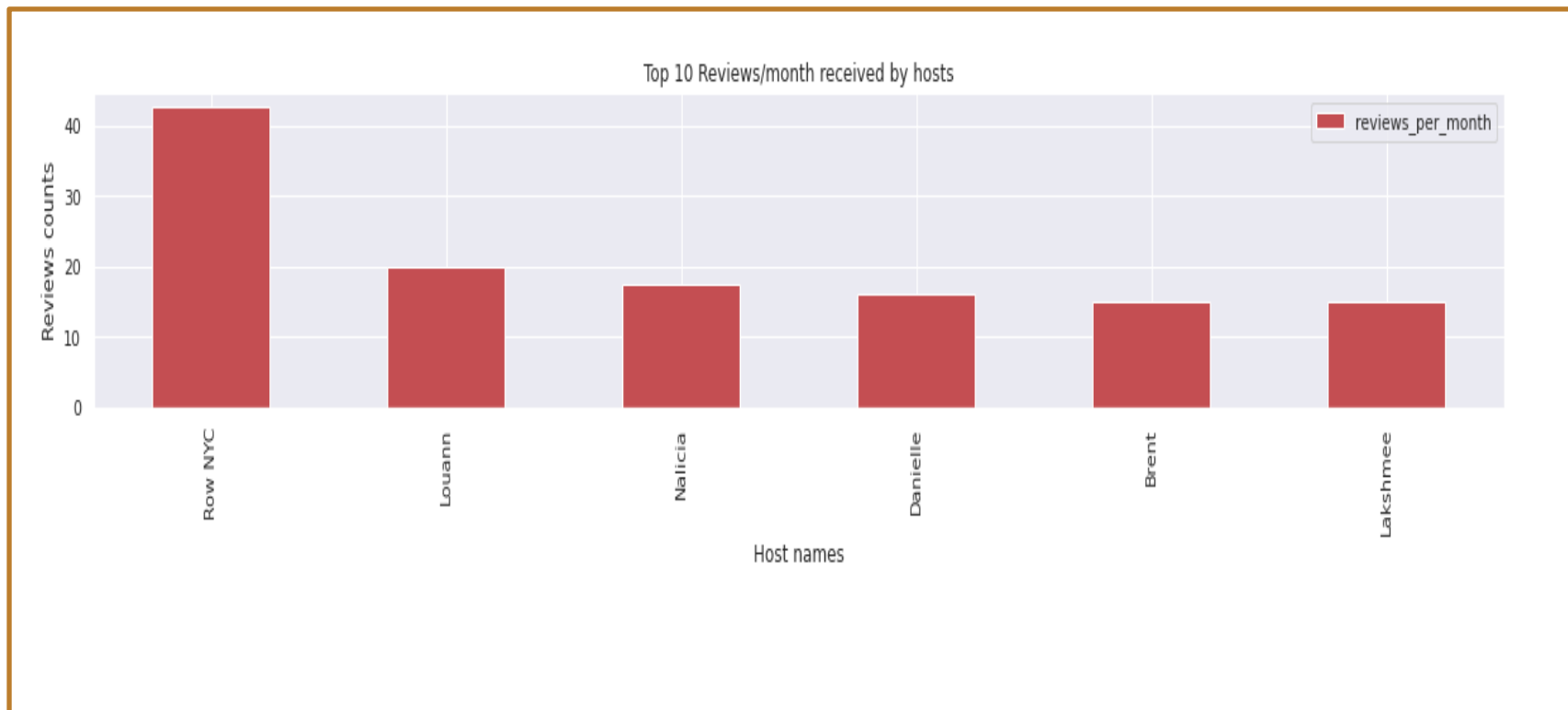




## Most Reviewed room\_types in each Neighbourhood Groups

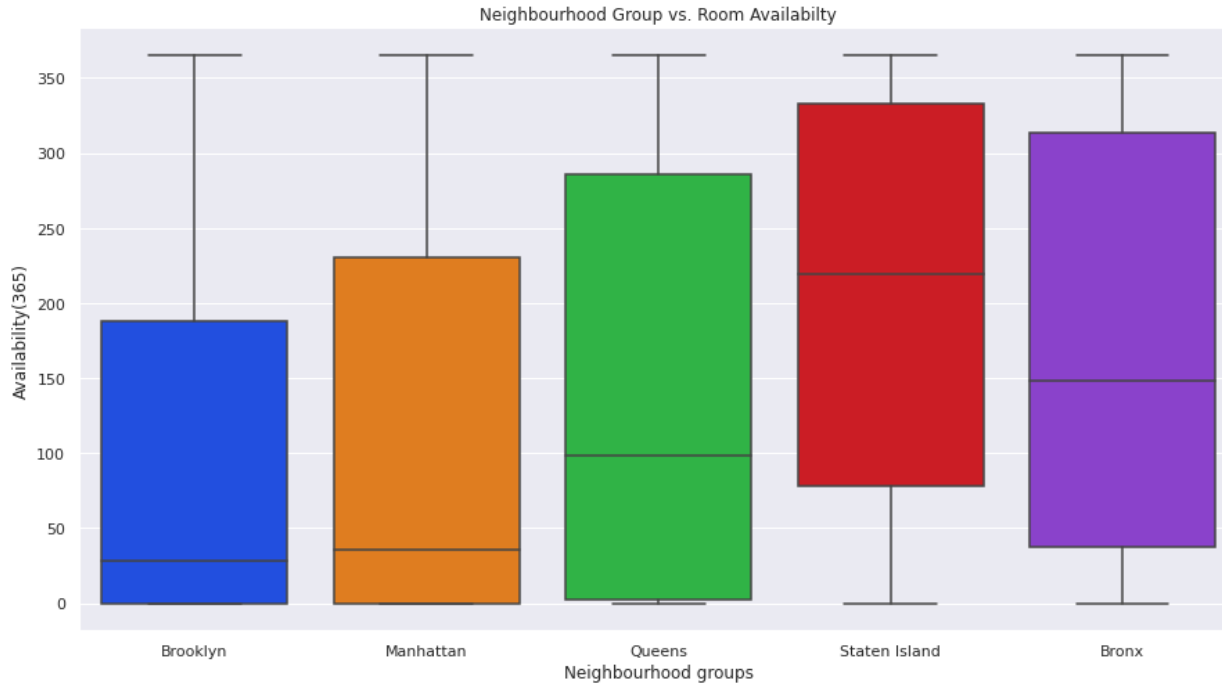


Let's find the top 10 reviewed hosts on the basis of reviews/month.

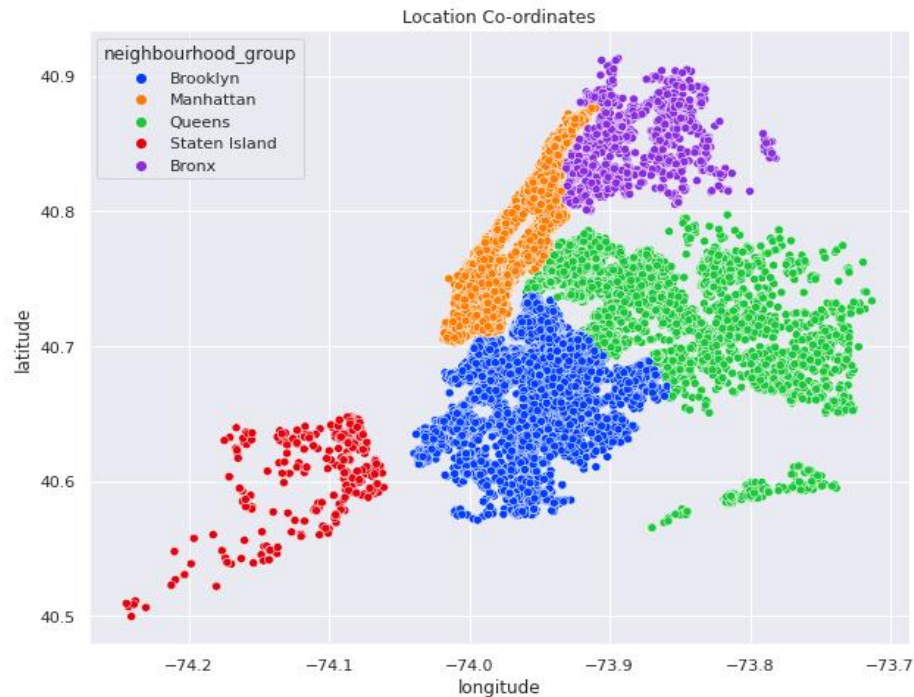


## EDA (continued)

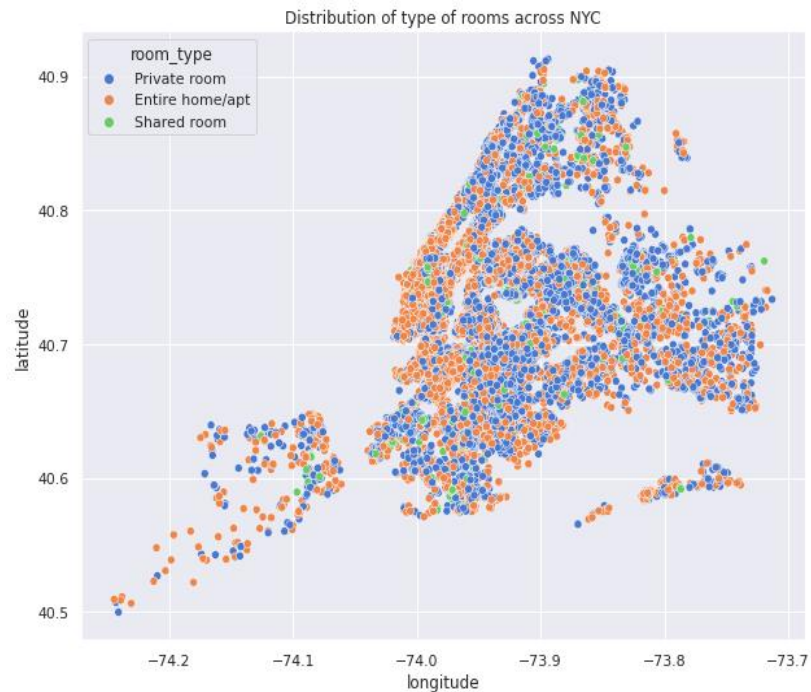
Room\_types and their relation with availability in different neighbourhood groups!



### Neighbourhood groups visualization with latitude and longitude!



### Types of Rooms visualization with latitude and longitude!



## Conclusion

1. Hillside Hotel is found to have listed more listings in entire NYC, followed by Home away from Home.
2. Host id 219517861 is found to have listed more listings in entire NYC with 327, followed by 107434423.
3. Michael is found to have listed more listings in entire NYC with 417, followed by David.
4. Manhattan is found to have high listed neighborhood group more listings in entire NYC, followed by Brooklyn.
5. Williamsburg is found to have listed more listed neighborhood in entire NYC with 3920, followed by Bedford-Stuyvesant.

## Conclusion

6. Entire home/Apt is found to have high listed room type with more listings in entire NYC, followed by Private room.
7. Manhattan has more listed properties with Entire home/apt around 27% of total listed properties followed by Brooklyn with around 19.6%.
8. Private rooms are more in Brooklyn as in 20.7% of the total listed properties followed by Manhattan with 16.3% of them. While 6.9% of private rooms are from Queens.
9. Manhattan is most focused place for host to do their business
10. Manhattan has the highest(the costliest) average of price ranging to ~150dollars/day followed by Brooklyn

## Conclusion

11. Queens and Staten Island have same average price/day, while Bronx comes out to be the cheapest neighbourhood group in NYC.
12. Brooklyn, Manhattan & Queens are highest renting neighbourhood groups
13. Brooklyn, Manhattan, Brooklyn & Queens are the lowest renting neighbourhood groups
14. Upper west side, Greenpoint & Astoria are highest renting neighbourhoods
15. There are 15 neighbourhoods where the lowest cost is 10 dollars
16. Luxury 1 bedroom apt. -stunning Manhattan views ,Furnished room in Astoria apartment & 1-BR Lincoln Center are highest renting property with 10,000 dollars



## Conclusion

17. people mostly prefer living in an entire home/apt on an average of more than 8 nights followed by guests who stayed in shared room where average stay is 6-7 nights.
18. Manhattan is leading in all three roomtypes on average price across nyc
19. Queens is top the list followed by brooklyn. Looks like the all the top 3,4 & 5 costliest listings belongs to Manhattan itself (being the most costliest place of living in NYC)
20. Among the top neighbourhoods in each neighbourhood groups, top 2 of them namely: Fort Wadsworth & Tribeca, origins from Staten Island & Manhattan.

## Conclusion

21. Looks like the top 2 costliest listings: Luxury 1 bedroom apt. -stunning Manhattan views & 1-BR Lincoln Center were from Brooklyn and Manhattan, hosted by Erin and Jelena respectively.
22. Looks like a property/listing with Entire home/apt as room\_type wins the show at NYC followed by private rooms.
23. Manhattan has the highest price for room types with Entire home/apt ranging to nearly 240 USD/night, followed by Private room with 110 USD/night. And it's obvious being the most expensive place to live in!

## Conclusion

24. Enjoy great views of the City in our Deluxe Room! with 58 reviews/month followed by Great Room in the heart of Times Square! with a total of 27 reviews/month. Top 2 are from Manhattan so we can decide the best suited place for a comfortable stay but the prices are high to afford.

25. Private room recieved the most no of reviews/month where Manhattan had the highest reviews received for Private rooms with more than 50 reviews/month, followed by Manhattan in the chase.

26. Manhattan & Queens got the most no of reviews for Entire home/apt room type.

27. Sonder(NYC) leads the most expensive neighbourhood group in NYC with around 106929 properties listed followed by Blueground and Kara.

## Conclusion

**28. Staten Island seems to be more available throughout the year to more than 300 days. On an average, these listings are available to around 210 days every year followed by Bronx where every listings are available for 150 on an average every year.**

**Thank You**