

# AirBnB in New York City





## **Aim:**

To better understand the NYC AirBnB market by investigating listing characteristics.

Snapshot of 80,000+ Listings in February 2022

*Price, Location, Rating, Room Type, Host Verification,  
Cancellation Policy*



## Question 1:

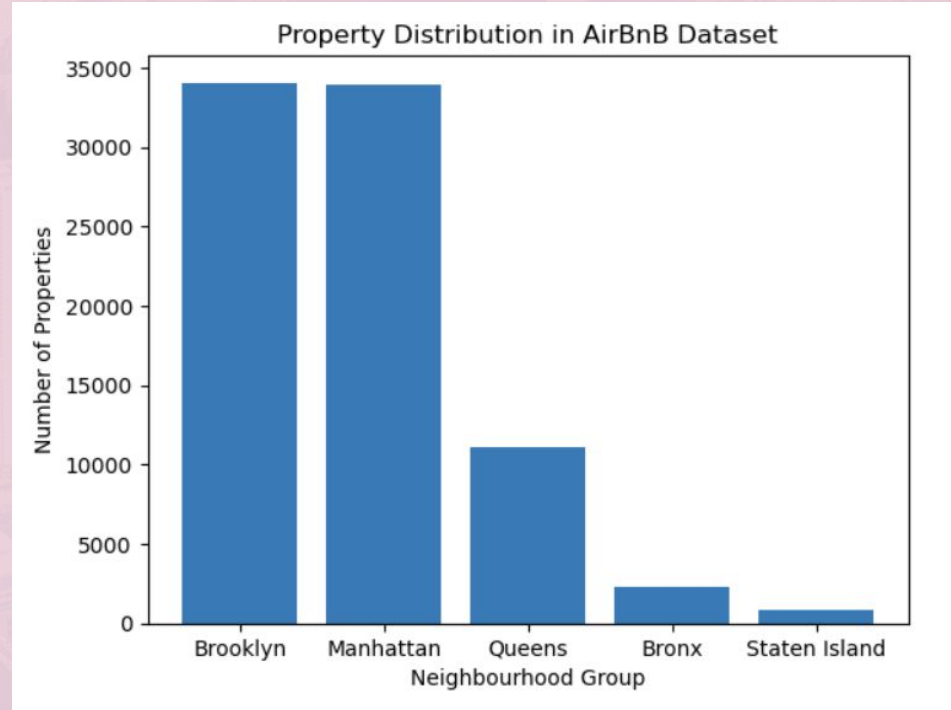
How do NYC AirBnB rentals differ in listing parameters?



# Where are the AirBnBs Located?

Highest number of listings:

- Brooklyn
  - Brooklyn Bridge, Coney Island, Barclay's Center (NY Nets, NY Islanders)
- Manhattan
  - Time Square, Empire State Building, Broadway

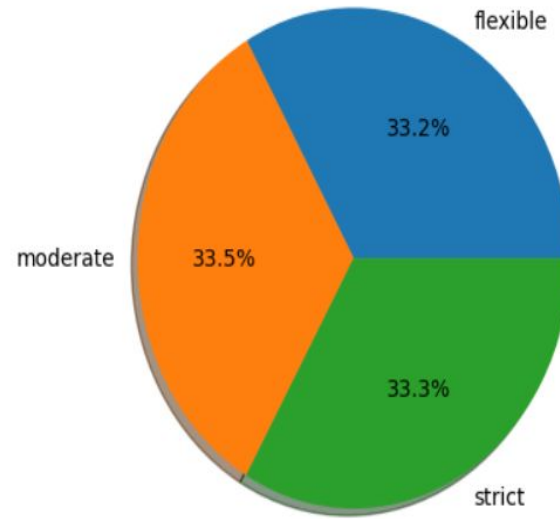




# Cancellation Policies

The balanced distribution of cancellation policies among flexible, moderate, and strict categories within the Airbnb dataset .

Percentage Distribution of Cancellation Policies in AirBnB Dataset



# Types of Rooms listed -

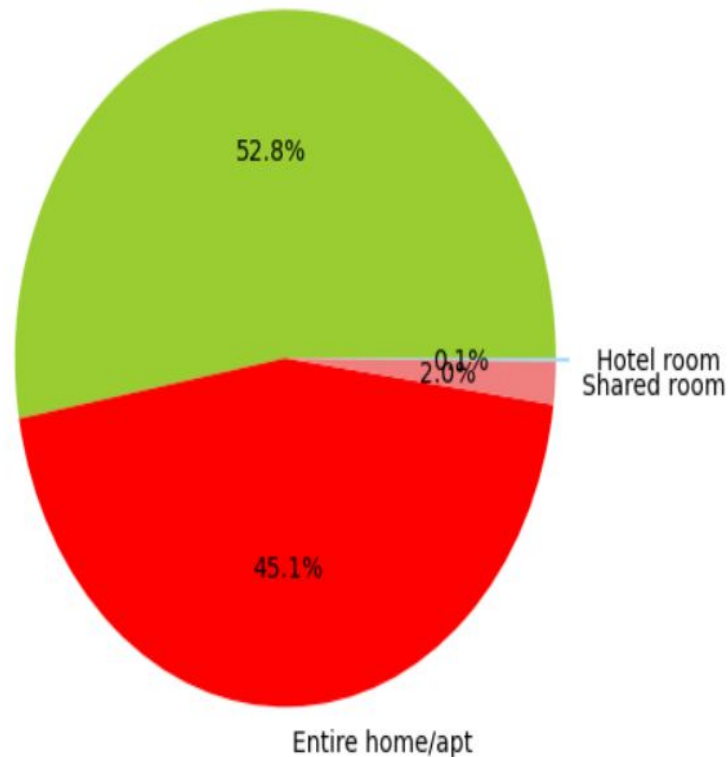
Private rooms - 52.8%

Entire home/apartments - 45.1%

Hotel room - 0.1%

Shared room - 2.0%

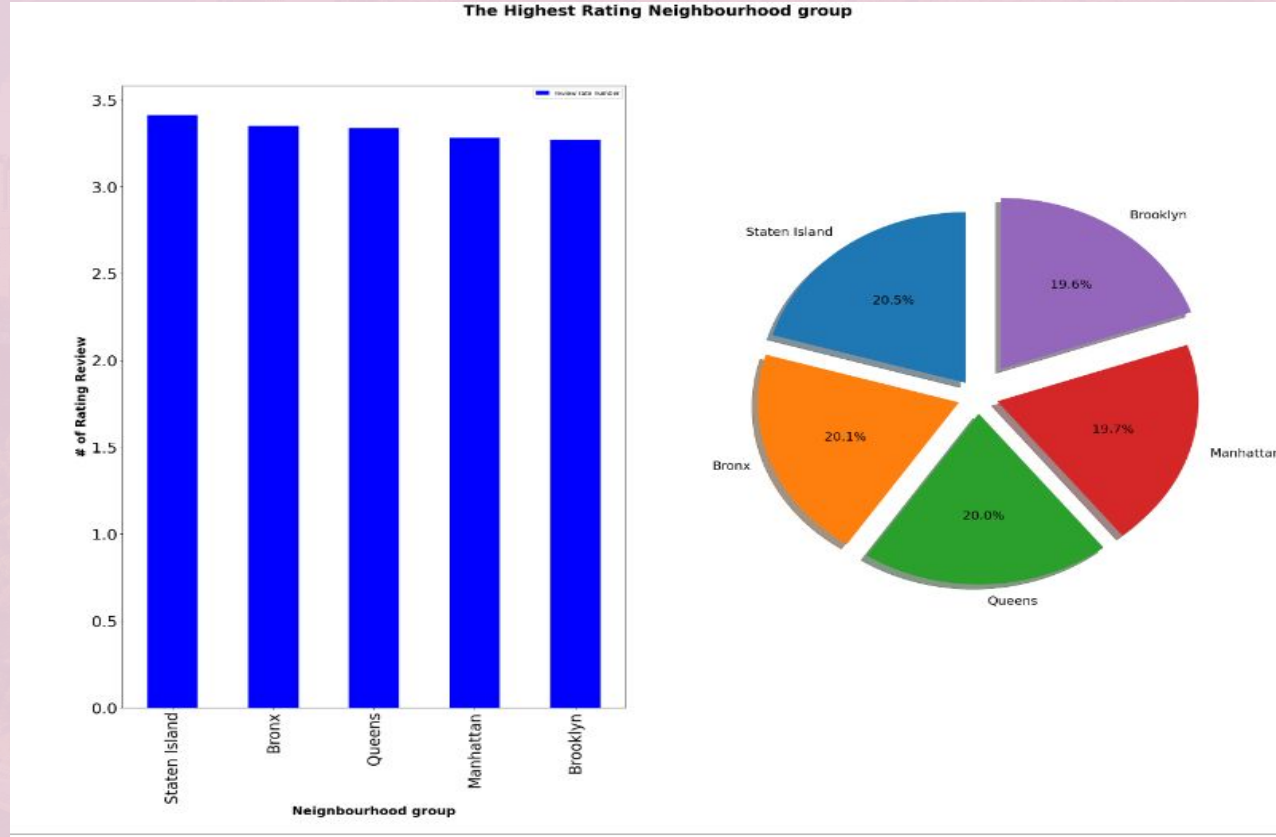
Types of Rooms Listed



# Neighbourhood group with average ratings

Highest Ratings:

- Staten Island
- Bronx

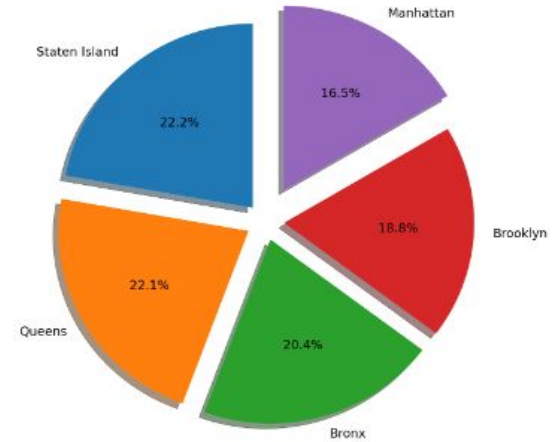
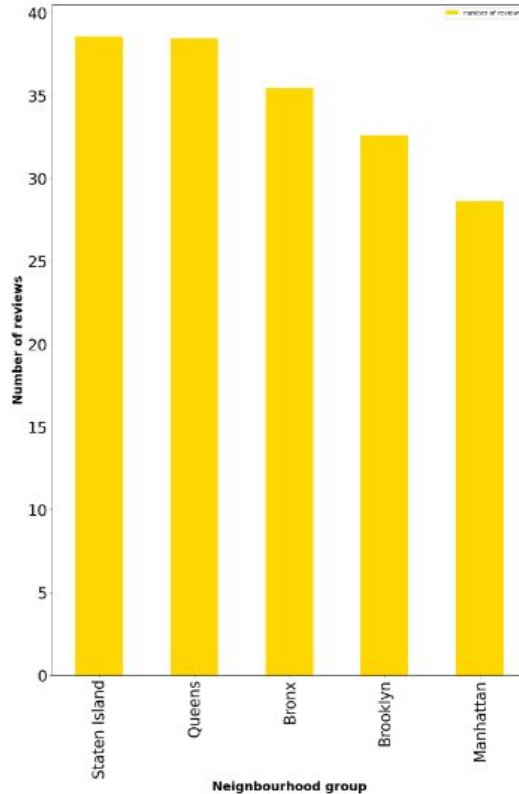


# The Average Reviewed Neighbourhood group

## Highest Ratings:

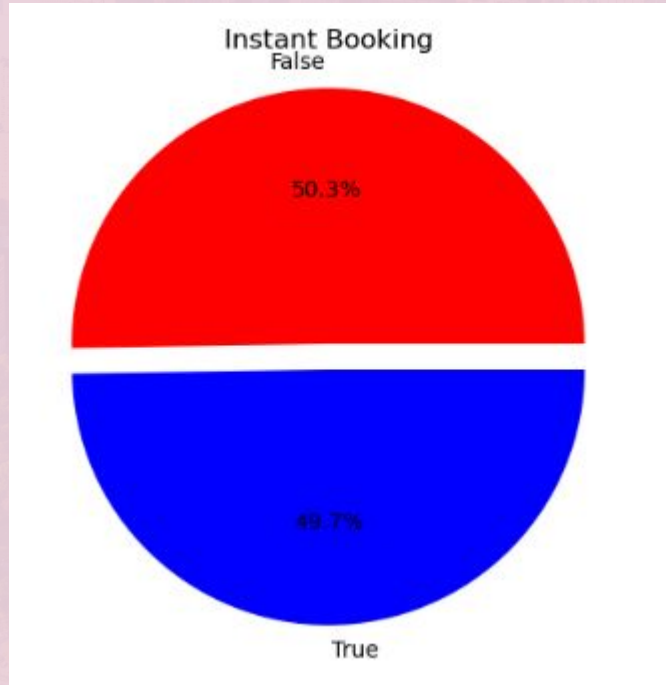
- Staten Island
- Queens

**Highest Reviewed Neighbourhood group**



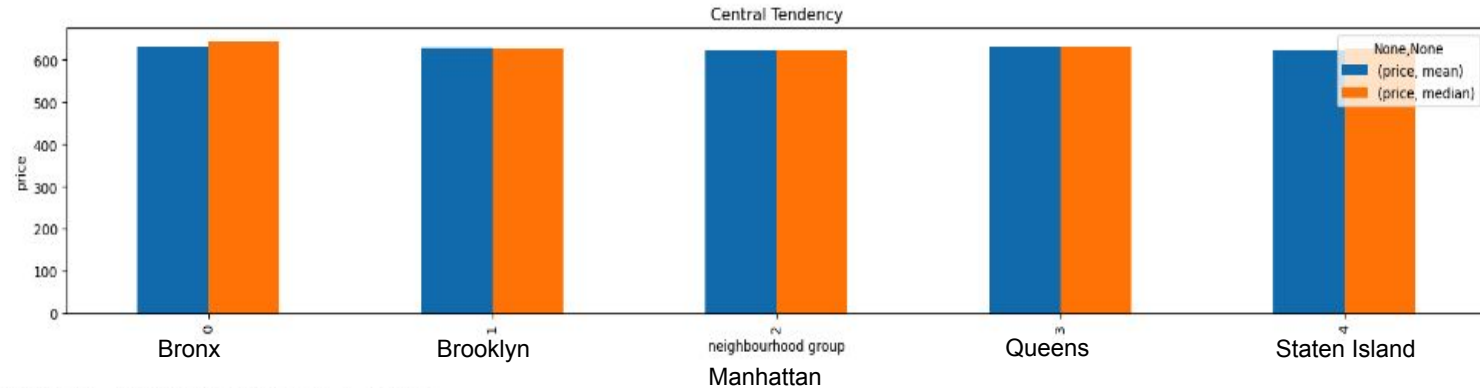


## Preferred Booking



Gurans :

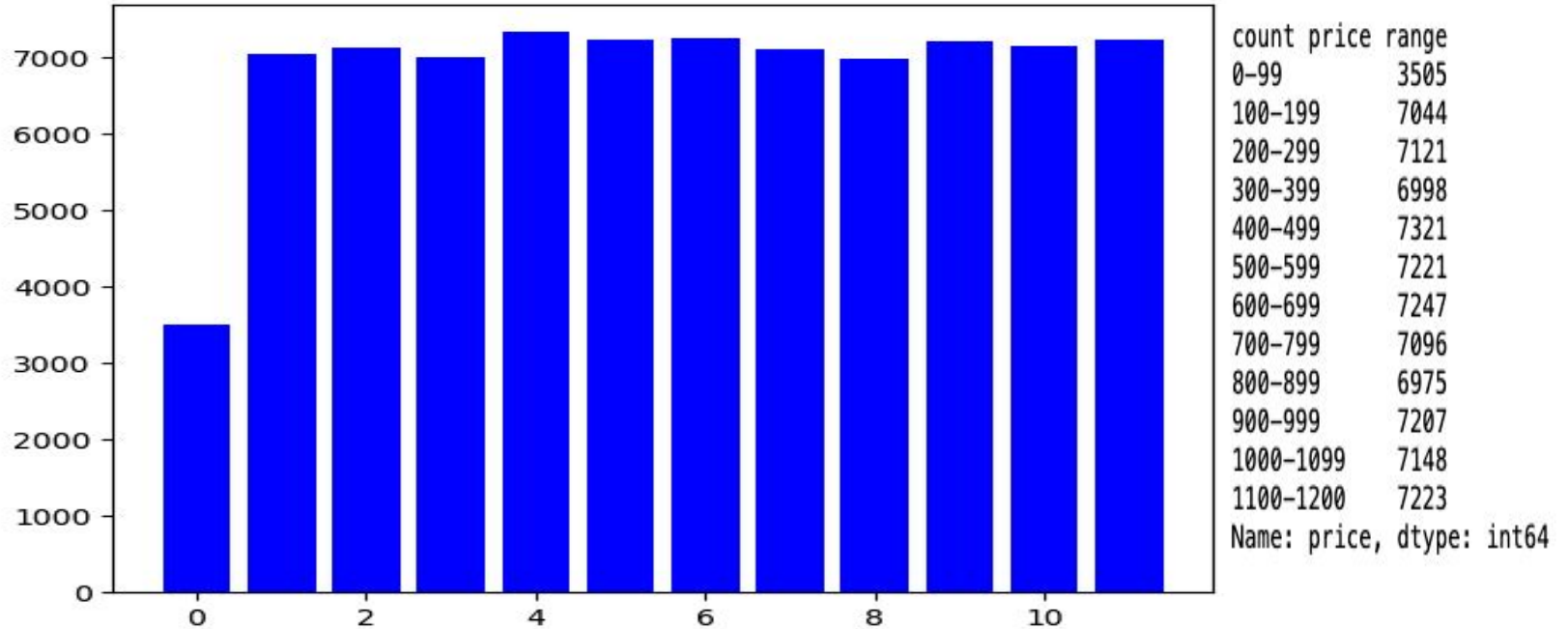
- price by each neighbourhood group
- overall visual analysis of mean & median by each neighbourhood group



<Figure size 640x480 with 0 Axes>



-Count by price range in each neighbourhood group?



**Question 2:**

**What listing parameters have an effect on rental price?**

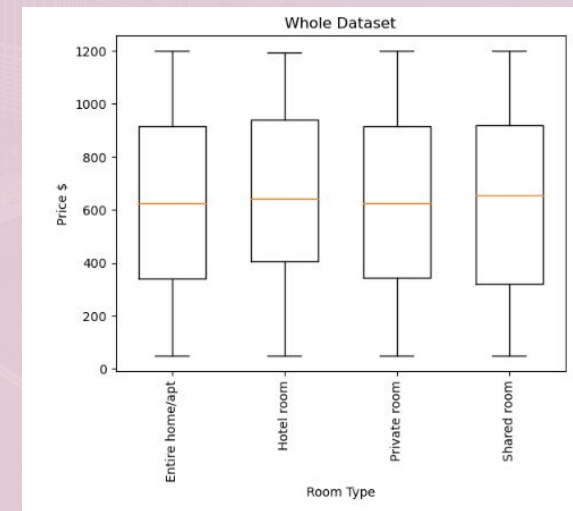
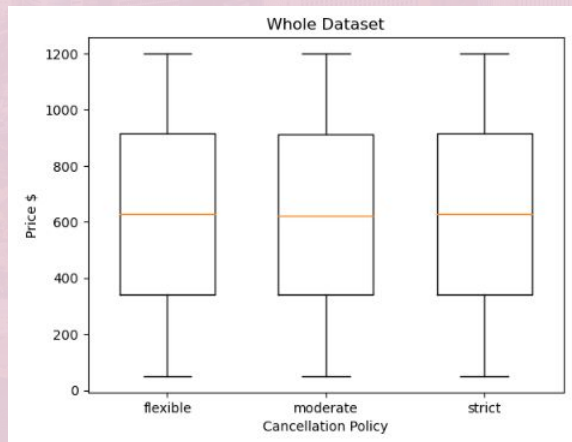
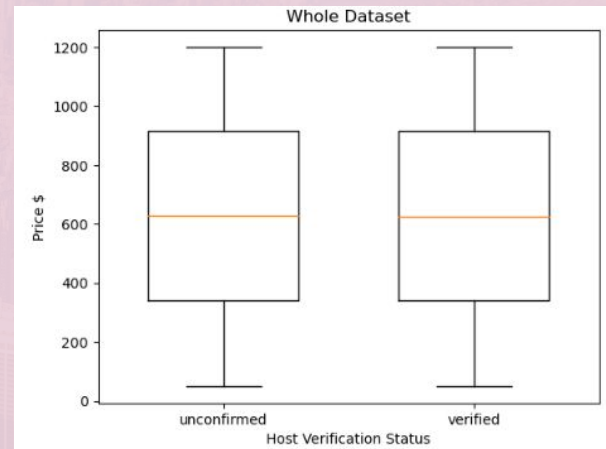
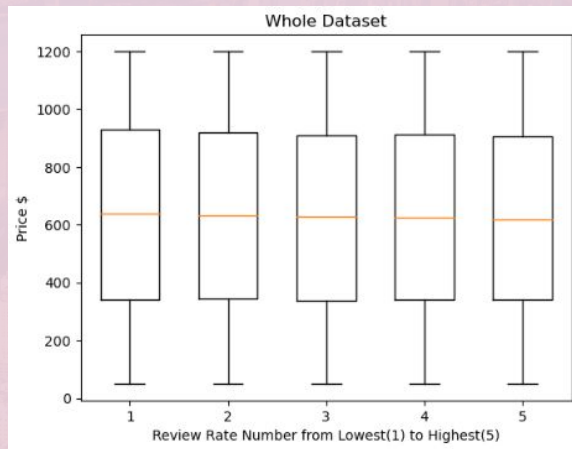




# Price by Listing Parameters

Price is not affected by single factors:

- Rating
- Host Verification
- Cancellation Policy
- Room Type



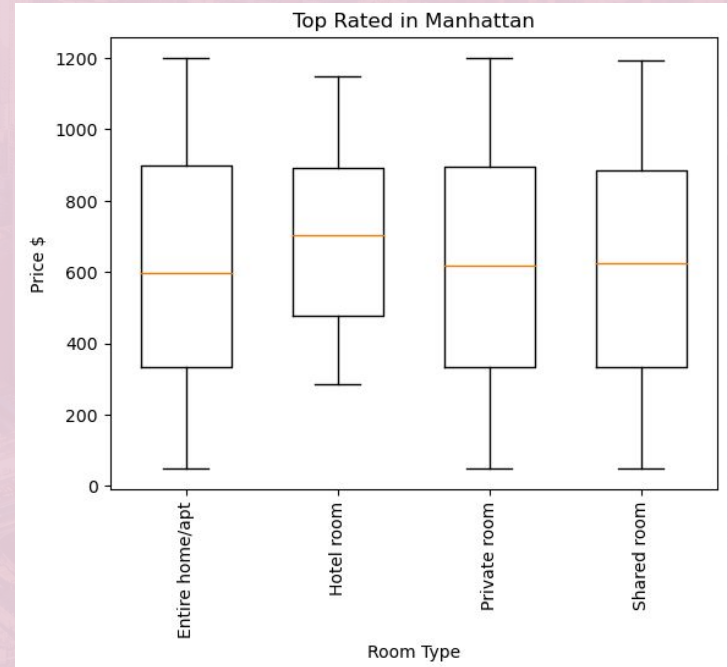
# Does Price Change by Room Type?

Next Step:

- Analyse only Top Rated (Rating = 5) rentals in Manhattan

Observations:

- Box plot for Hotel Room is shifted
- Welch's t-test fails to reject null hypothesis





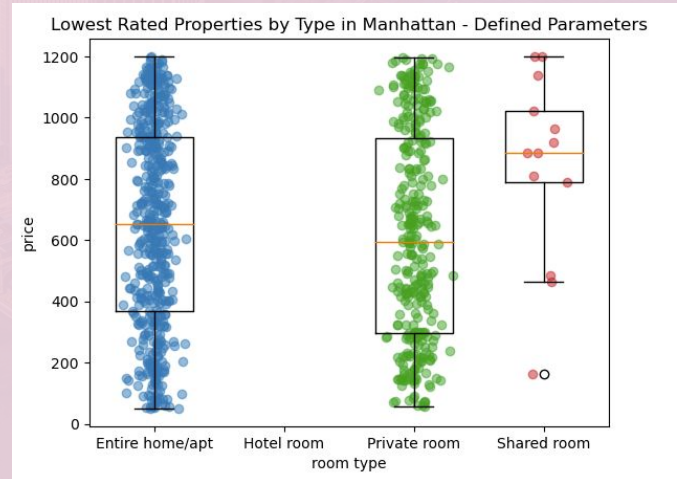
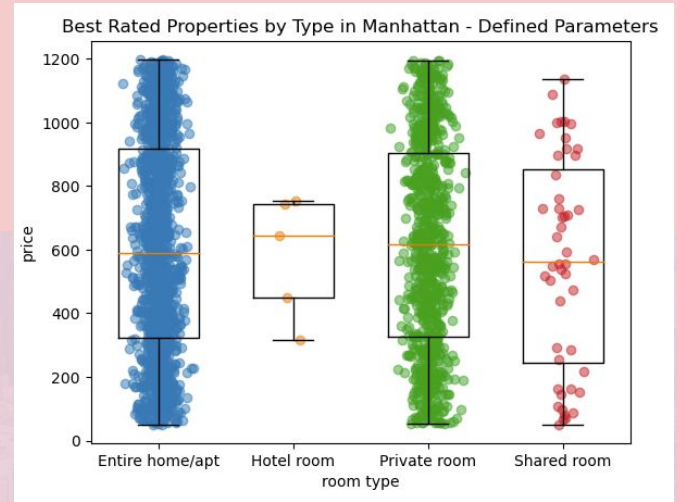
# Price Relationships - Removing Available Confounding Variables

Attempted to remove confounding variables:

- Neighbourhood Group = Manhattan
- Cancellation policy = flexible or moderate
- Verified hosts
- Greater than 1 review
- Rating = 5 or 1

Checked for normal distribution before conducting Welch's t-test:

- Best Rated: Entire Home vs Private Room ( $p = 0.87$ )
- Lowest Rated: Entire Home vs Private Room ( $p = 0.18$ )
- Entire Home: Best vs Lowest Rated ( $p = 0.0506$ )
- Private Room: Best vs Lowest Rated ( $p = 0.9$ )



### Question 3:

Where are the most expensive and best rated properties on a map?

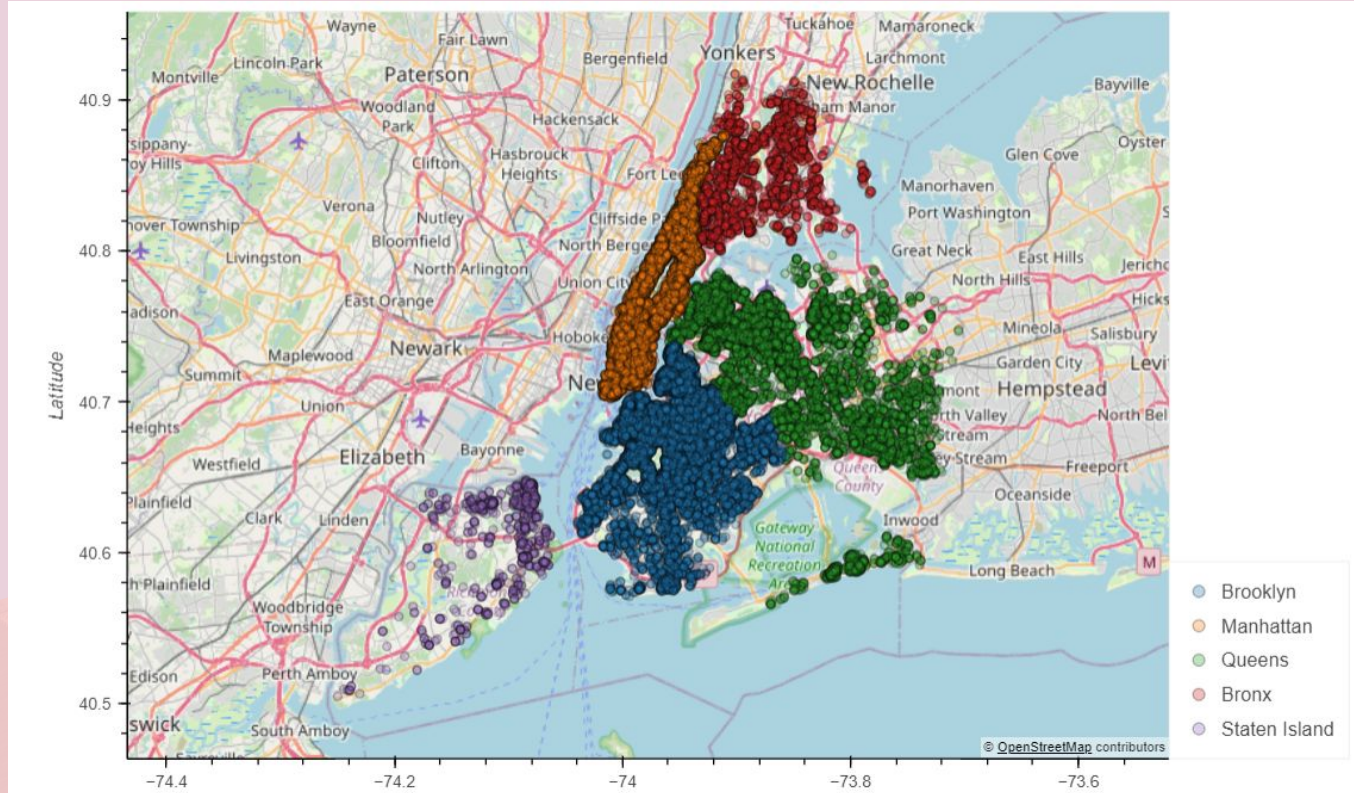
Do they differ from least expensive and best rated?





# Distribution of airbnbs in different neighborhoods in New York City

5 neighborhood groups - Brooklyn, Manhattan, Queens, Bronx, Staten Island





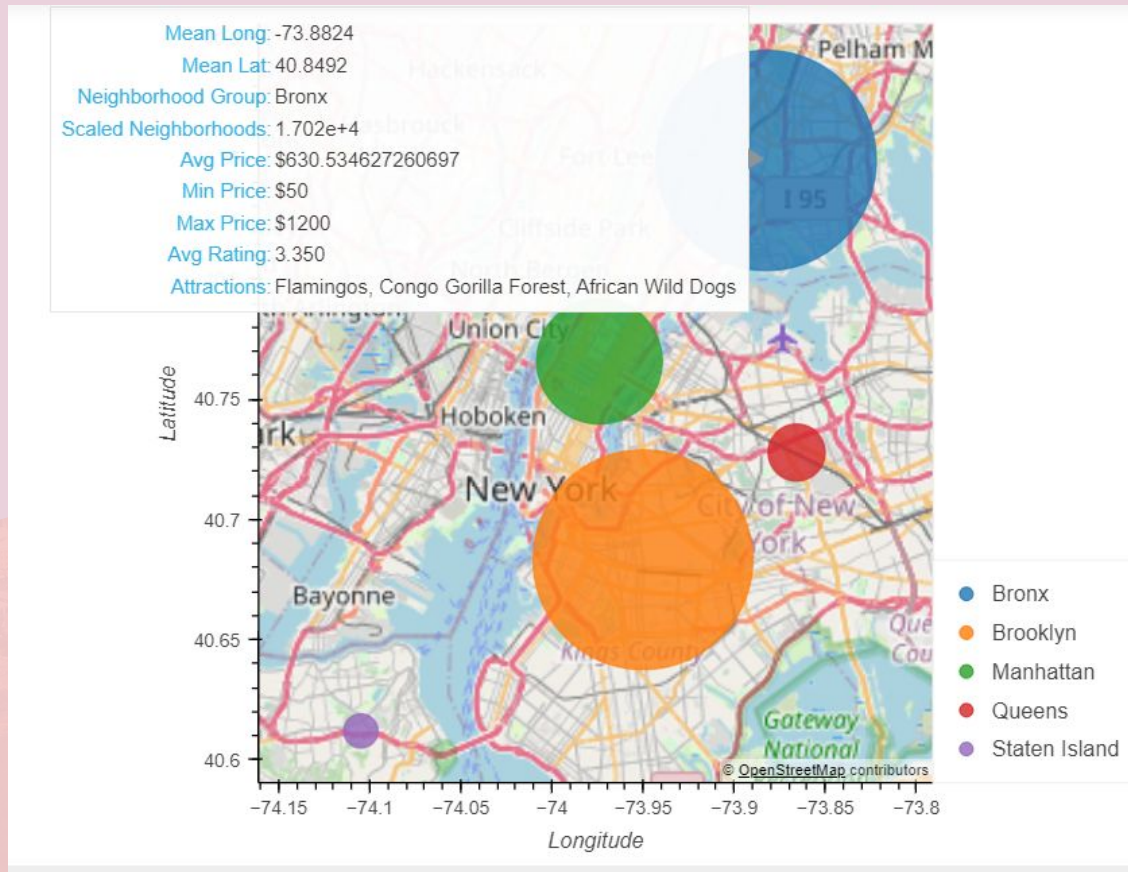
# Avg Prices and Rating of each neighborhood group

Choose airbnb based on Neighborhood group with -

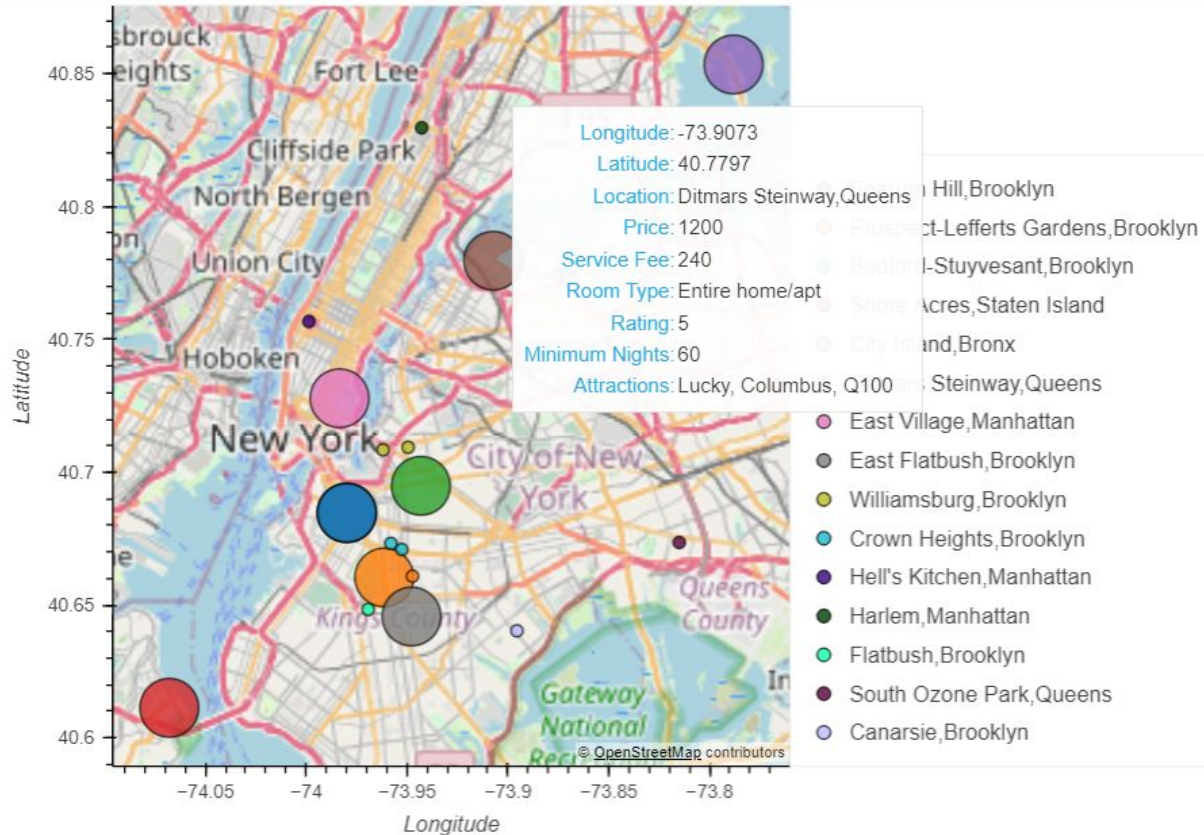
- Better rating
- Preferred price range
- Nearby attractions

Analysis:

No significant difference in the price or rating.



# Top 10 Most and least expensive listings with highest ratings



- Sized according to price.
- All details of a place displayed to help choose.

Analysis:  
The price does not seem to increase or decrease based on location.



# Closing Remarks

We have analysed the different types of listings of airbnb rentals.

- Highest number of listings are in Brooklyn followed by Manhattan.
- The majority of the listings are of private rooms (52.8%) and lowest are of hotel rooms(0.1%).
- We were not able to determine any significant parameter affecting price.
- Brooklyn has more expensive places in top rated listings.
- Ratings do not depend on verified host, location or price.