



NEW YORK CITY AIRBNB ANALYSIS

IS 590 DW :
Data warehouse and Business
Intelligence

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Introduction:

About Airbnb – A company that provides an online platform for accommodation to guests , travelers and tourists. It provides different varieties of rooms and homestays which are hosted by various people registered with Airbnb properties. These rental properties include apartments, homes, boats in different neighborhood and are widespread all across the world. The booking arrangement, charges 3% of the value of booking and the guests are charged 6%-12% dependent on the type of booking. The prices for properties vary according to city and area, neighborhood and availability of rooms.

New York city is one of the most visited cities that caters to many tourists and travelers from around the globe. Properties that serve to different requirements based on pricing, areas, 1 BR, 2BR and many other provide home to many tourists.

Objective of the project :

The project aims to understand how the property listing of Airbnb in New York depends on other parameters :

It also aims to understand various things like :

- How many neighborhood areas are there in NYC?
- How are rental properties distributed across the neighborhoods of NYC?
- How do prices vary with respect neighborhoods, rental property types and rental amenities?
- How many reviews are given to a particular property?
- Who are the top 10 hosts in NYC and what kind of property do they have?
- What is the average price of different types of properties?
- How many properties are available in each area?
- What is the availability for every host?
- Does the price of the listing vary according to its location?
- What is the average price for a listing based on the neighborhood and neighborhood area?
- What's the average price depending on the room type and the minimum no. of nights?
- Does the price of the listing depend on the availability of the listing?
- What's the median price based on neighborhood?
- Which neighborhood area has the maximum reviews?
- What is the last date of review for a particular price?
- How does the average price vary based on neighborhood and no. of reviews?
- What is the minimum no. of nights for properties with a median price greater than 100?
- What is the count of listing for every host?

About the dataset :

The data set is downloaded from :

<https://www.kaggle.com/dgomonov/new-york-city-airbnb-open-data>

<https://www.kaggle.com/new-york-city/nyc-inspections>

1. The data set describes the listing activity and metrics in NYC for 2019. It includes information about hosts, geographical availability, reviews and rating. It has 16 columns that provide data about host id, host name, latitude and longitude, reviews, room type, availability of 365 days, etc.
2. The data set gives information of the various cuisine restaurant available in the neighborhood areas of NYC. It gives data for the street, zip code and inspection details of a restaurant.

Analyzing the dataset:

We used tableau and Power BI applications to analyze the data set which helped us to gain insights about different the Airbnb properties in NYC.

- There are 5 neighborhood groups in NYC, namely: Bronx, Brooklyn, Manhattan, Queens and Staten Island. Each of these areas have following property listings with airbnb:

Neighborhood Group	Properties
Bronx	1091
Brooklyn	20,104
Manhattan	21,661
Queens	5,666
Staten Island	373
Total Properties	48895

There are about 37,500 hosts in NYC, some of these properties belong to same hosts and the number of hosts in each areas are:

Neighborhood Group	Hosts in every area
Bronx	789
Brooklyn	15,966
Manhattan	16,578
Queens	3,983
Staten island	256
Total hosts in NYC	37,572

- The most popular areas in NYC where there are maximum airbnb properties are:

Williamsburg in Brooklyn with 3920 properties.

Bedford-Stuyvesant in Brooklyn with 3,714 properties.

Harlem in Manhattan with 2,658 properties.

Bushwick in Brooklyn with 2,465 properties.

Upper east side in Manhattan with 1,971 properties.

Maximum Airbnb properties are in area of Brooklyn and Manhattan with the most famous areas being Williamsburg, Bedford-Stuyvesant and Harlem .

- There are 3 types of properties : Entire home/apt , Shared room and private room .
In NYC , each property is present in following numbers:
Entire Home/Apartment – 25,409
Shared room – 1,160
Private room – 22,326
- The average price of these rooms are :

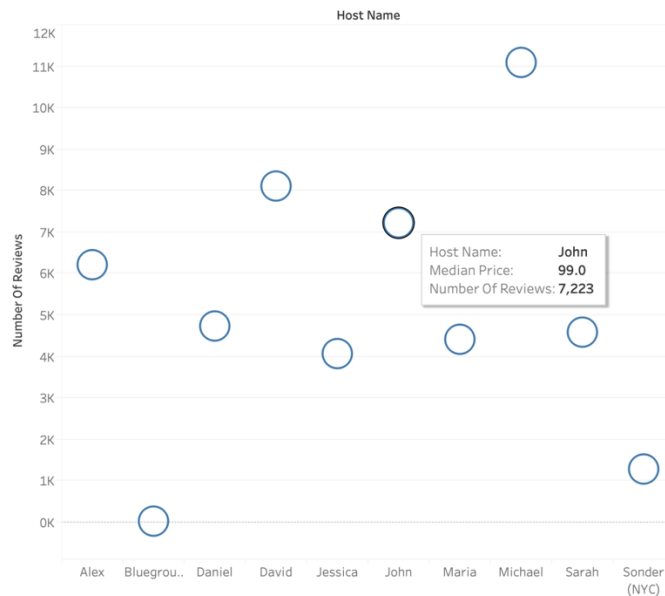
Room type	Number of properties	Average price
Entire Home/Apartment	25,509	212\$
Shared room	1,160	70\$
Private room	22,326	90\$

- The top 10 hosts for NYC Airbnb that have maximum reviews are:
Michael , David, John, Alex, Daniel, Sarah, Maria, Jessica, Sonder(NYC)

Screenshot (1) – The top 10 hosts with the number of reviews and the median price of their properties.

(The sheet can be visualized in tableau workbook)

Top 10 hosts



- The hosts that have received most reviewed are :
Danielle , David, Eric, Jaosn, John, Kevin, Maya, Michael, Sarah

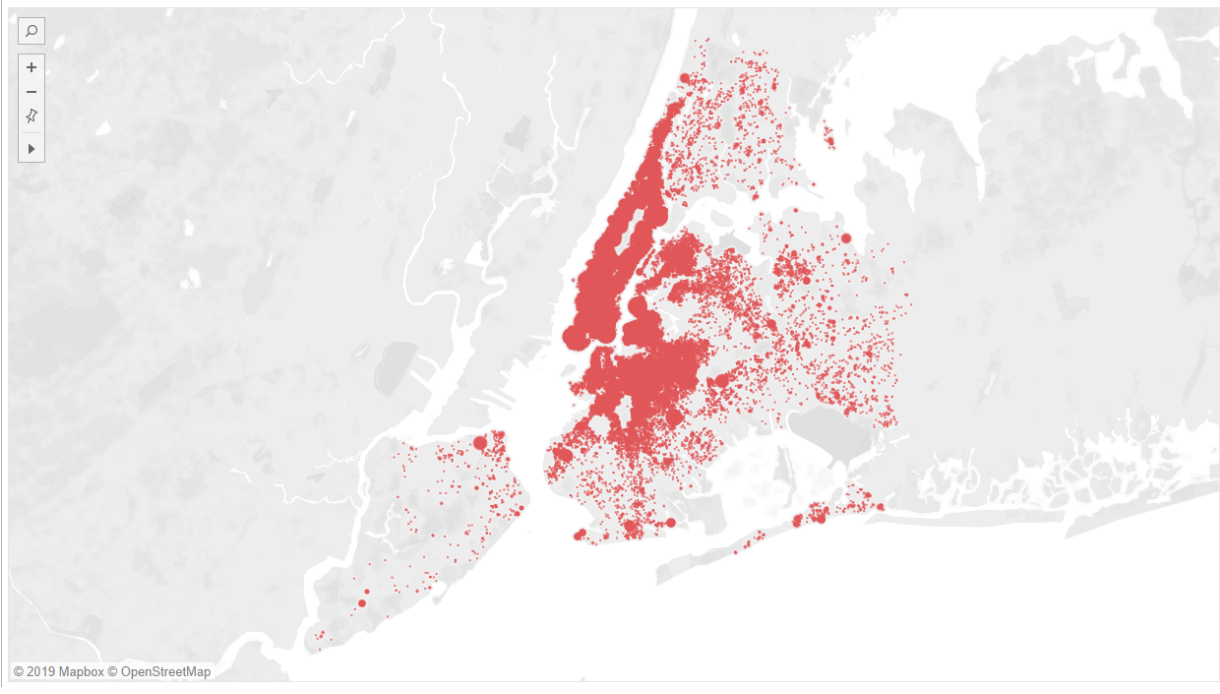
These hosts have received **more than 2000 reviews**.

We observed, that number or properties and reviews have a strong correlation as there are hosts that have number or properties and great number of reviews.

- About **37 hosts own a property that is available for half of the year**, the property is available at least 150 days of the year. These properties are situated in areas of Brooklyn and Manhattan.
- Price according to locations:
If we look at the results in the tableau sheet we can clearly see that the listings which are towards the west are generally much more expensive than the listings on the east.

Latitude	Longitude	Price
40.65	-73.95	150\$
40.63	-73.96	90\$
40.72	-74.00	8,500\$

Price according to location



- Average Price according to neighborhood and neighborhood group

Neighborhood	Neighborhood group	Avg Price
Tribeca	Manhattan	490.6\$
Fort Wadsworth	Staten Island	800\$
Breezy Point	Queens	213.3\$
Sea Gate	Brooklyn	487.9\$
Riverdale	Bronx	442.1\$

- Median Price of listing according to availability:

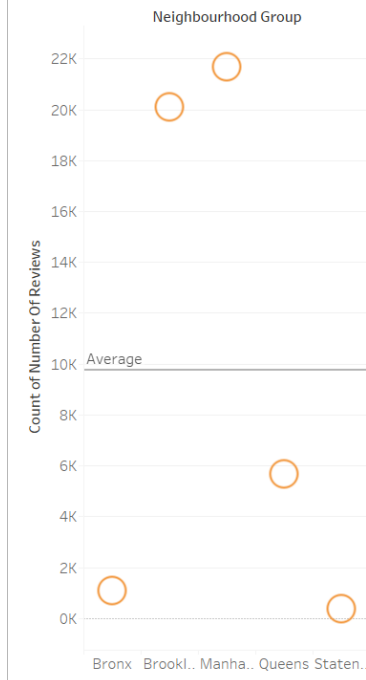
Availability	Price
109	132
361	80
72	94.5
134	105.5

Through these results we can conclude that there is no relationship between the price of the listing and the availability of the listing.

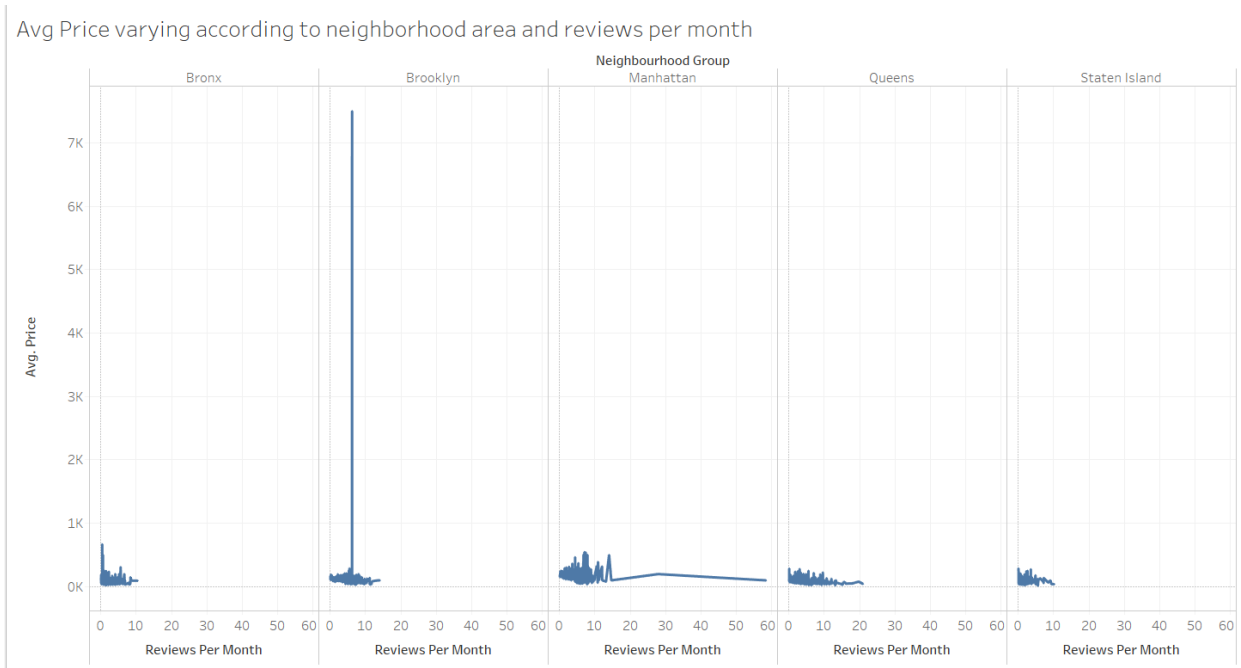
- No. of Reviews for every neighborhood group:

Neighborhood Area	No. of Reviews
Bronx	1,091
Queens	5,666
Staten Island	373
Manhattan	21,661
Brooklyn	20,104

No. of reviews depending on neighborhood group

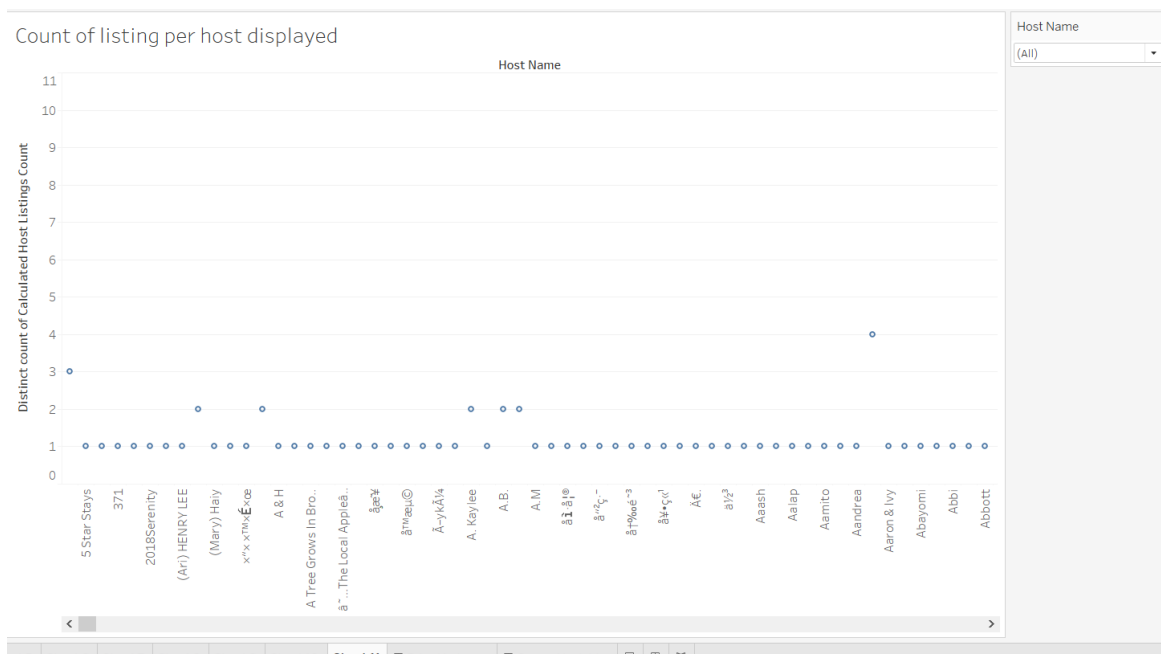


- Average Price according to neighborhood and no. of reviews:



Through the results we can see that the combination of the neighborhood group and no. of reviews do not affect the average price of a listing.

- Count of listings per host:

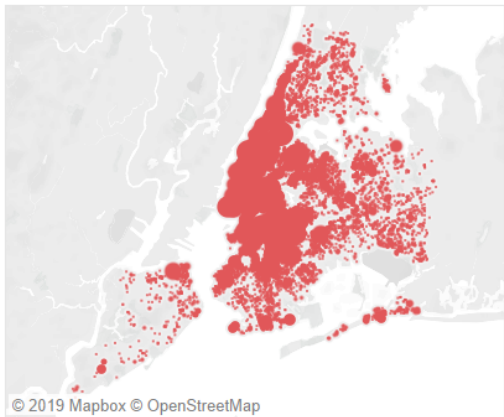


We can see the no. of listing for each host by selecting a particular host's name from the dropdown on the right side.

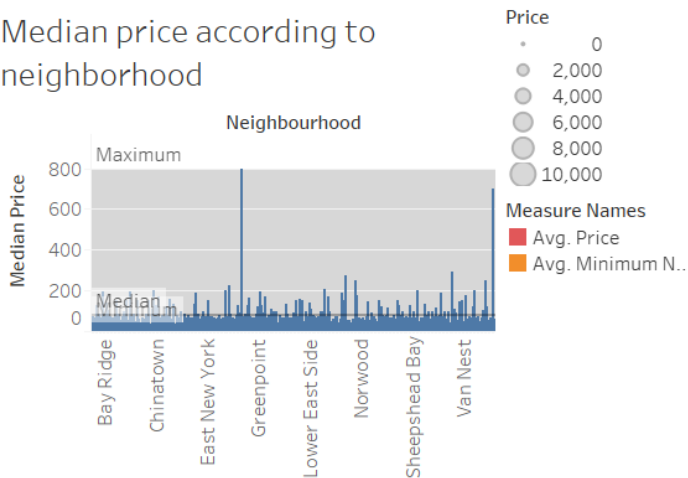
- We merged the two data files : Airbnb + Restaurant listing in NYC to gain information about the available cuisines.
- We analyzed the data for the famous cuisines available in neighborhood areas of NYC. It was observed that while cuisines like American, Indian, Chinese, Thai are available in almost all regions the vegetarian food is mostly available in areas of Brooklyn, Manhattan and Queens.

Dashboards:

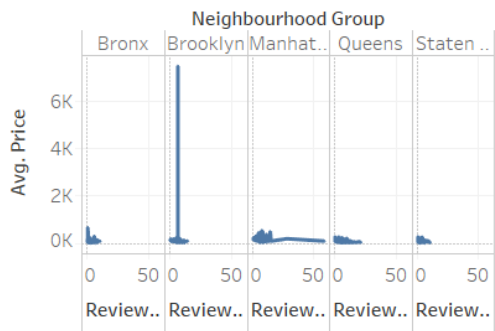
Price according to location



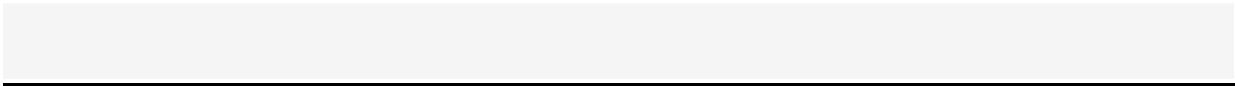
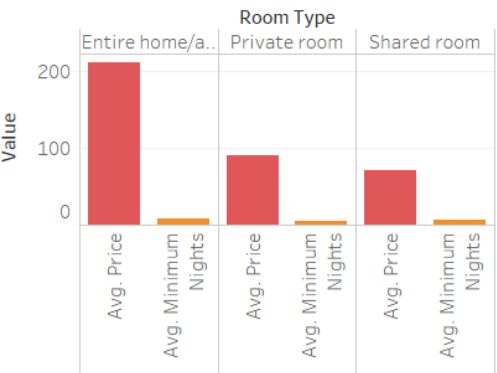
Median price according to neighborhood



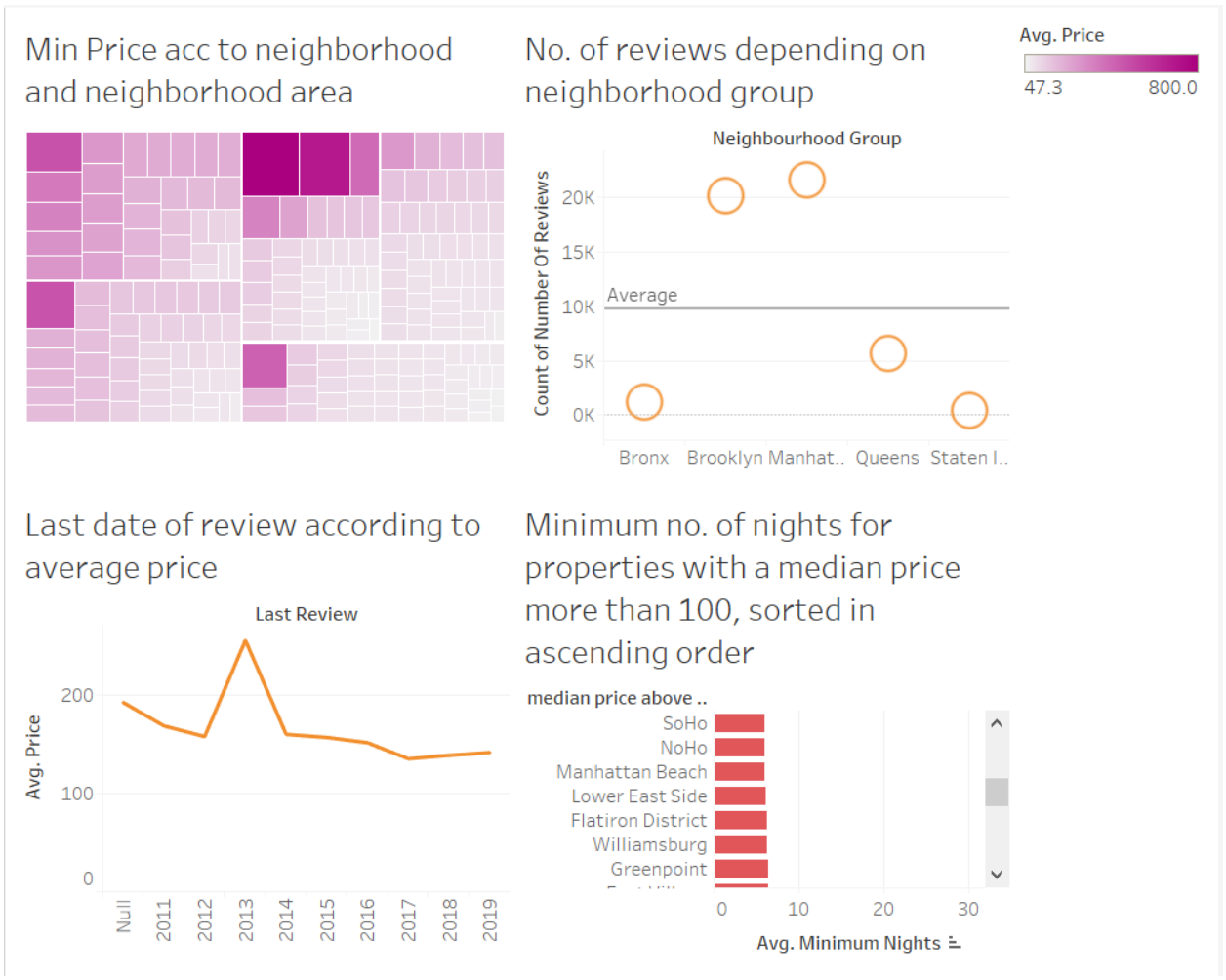
Avg Price varying according to neighborhood area and reviews per month



Avg Price and Minimum no. of nights for diff room types



Screenshot(1)



Screenshot(2)

Available cuisines in the neighborhood area



Screenshot(3)

Attachments:

- 3 Tableau dashboards
- 1 Power BI analysis report