AIRBNB CASE STUDY METHODOLOGY

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:

For the past few months, Airbnb has seen a major decline in its revenue due to the worldwide pandemic. Now that the restrictions have started lifting up and people have started to travel more. Airbnb wants to make sure that it is fully prepared for this change.

Airbnb needs to take the appropriate steps in order to grow our business. Match and grow above the pre-COVID level revenue. In order to keep our head above water, we need to implement new services and try branching out the unexplored territories.

About the dataset:

The data set: AB_NYC_2019.exe

The data set describes the listing activity and metrics in NYC from 2011 to 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.

Analyzing the dataset:

- We used Tableau application to analyze the data set which helped us to gain insights about different the Airbnb properties in NYC.

- Data Cleaning and Binning:

1. We cleaned the dataset using the Data Interpreter present in Tableau.
2. New Calculated fields created:
   - **Availability**: Availability 365 is binned into 5 bins.
     Code:
     IF [Availability 365] >= 0 AND [Availability 365] < 30 THEN "0-30 days"
     ELSEIF [Availability 365] >= 30 AND [Availability 365] < 60 THEN "30-60 days"
     ELSEIF [Availability 365] >= 60 AND [Availability 365] < 90 THEN "60-90 days"
     ELSEIF [Availability 365] >= 90 AND [Availability 365] < 180 THEN "90-180 days"
     ELSE "Above 180 days" END

   - **Price Range**: Price column is binned into 12 bins each of $50.
     Code:
     IF [Price] >= 0 AND [Price] < 50 THEN "0-50"
     ELSEIF [Price] >= 50 AND [Price] < 100 THEN "50-100"
     ELSEIF [Price] >= 100 AND [Price] < 150 THEN "100-150"
     ELSEIF [Price] >= 150 AND [Price] < 200 THEN "150-200"
     ELSEIF [Price] >= 200 AND [Price] < 250 THEN "200-250"
     ELSEIF [Price] >= 250 AND [Price] < 300 THEN "250-300"
     ELSEIF [Price] >= 300 AND [Price] < 350 THEN "300-350"
     ELSEIF [Price] >= 350 AND [Price] < 400 THEN "350-400"
     ELSEIF [Price] >= 400 AND [Price] < 450 THEN "400-450"
     ELSEIF [Price] >= 450 AND [Price] < 500 THEN "450-500"
     ELSEIF [Price] >= 500 AND [Price] < 1000 THEN "500-1000"
     ELSE">1000" END

Location:
- There are 5 neighborhood groups in NYC, namely: Bronx, Brooklyn, Manhattan, Queens and Staten Island.

  - **Manhattan** - the smallest and most densely populated borough. It is the symbol of New York City, home to many skyscrapers and landmarks (like Times Square and Central Park). Often described as the cultural, financial, media and entertainment capital of the world.

  - **Brooklyn** - the most populous borough. It is known for its cultural, social, and ethnic diversity. Brooklyn has evolved into a thriving hub of entrepreneurship and high technology startup firms.

  - **Queens** - the geographically largest borough. It is the most ethnically diverse urban area in the world. Queens is the site of Citi Field where the New York Mets play. In addition to this, John F. Kennedy International Airport and LaGuardia Airport are located in this borough.

  - **The Bronx** - the only borough that is part of the United States mainland. Home to the largest cooperatively owned housing complex in the United States, it is also the location of Yankee Stadium. In addition to this, the world's largest metropolitan zoo, the Bronx Zoo is located here as well as the New York Botanical Garden and Pelham Bay Park (the largest park in New York
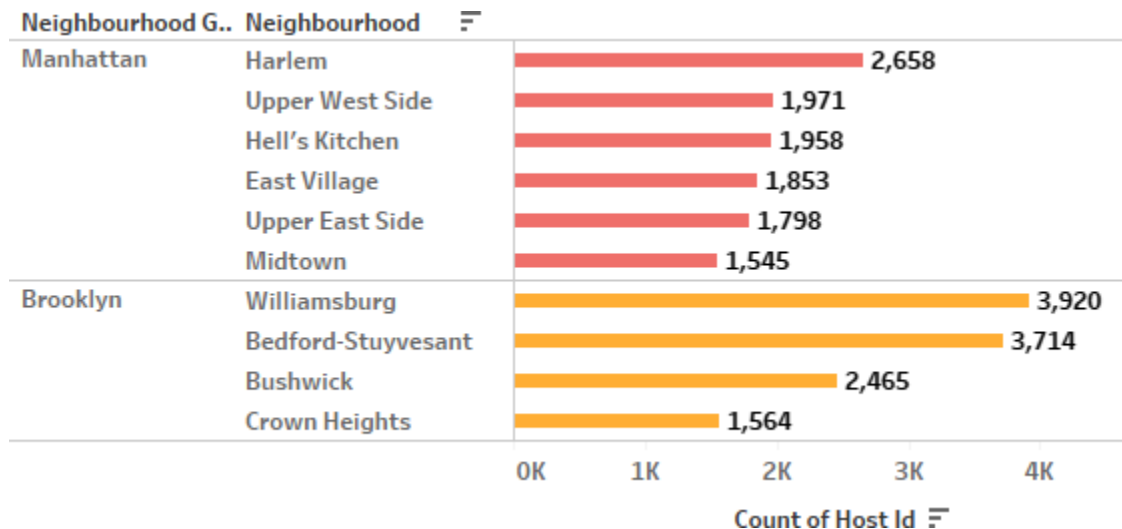
City).

- **Staten Island** - the most suburban in character of the five boroughs. Connected to Brooklyn by the Verrazano-Narrows Bridge and Manhattan via the Staten Island Ferry. Home to the Staten Island Greenbelt, one of the last undisturbed forests in the city.

- Each of these areas have following property listings with Airbnb:

Neighbourhood Group	% of Total Total Count	
Manhattan	44.39%	21,258
Brooklyn	41.12%	19,690
Queens	11.66%	5,583
Bronx	2.25%	1,077
Staten Island	0.78%	372
Grand Total		**47,885**

- There are about 47,885 hosts in NYC. The vast majority of listings on Airbnb are in Manhattan and Brooklyn, making up 86% of the total rooms. This makes sense since Manhattan is densely populated and Brooklyn has a large population in general.

- Also, the most famous areas being Williamsburg, Bedford-Stuyvesant and Harlem.

- Some of these properties belong to same hosts and the number of hosts in each area are:

Neighbourhood Group	Count of Host Id
Manhattan	21,661
Brooklyn	20,104
Queens	5,666
Bronx	1,091
Staten Island	373

Neighbourhood G..	Neighbourhood	Count of Host Id
Manhattan	Harlem	2,658
	Upper West Side	1,971
	Hell's Kitchen	1,958
	East Village	1,853
	Upper East Side	1,798
	Midtown	1,545
Brooklyn	Williamsburg	3,920
	Bedford-Stuyvesant	3,714
	Bushwick	2,465
	Crown Heights	1,564

- 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.
- Bush wick in Brooklyn with 2,465 properties.
- Upper east side in Manhattan with 1,971 properties.

Room Types:

- There are 3 types of properties:

  - **Entire home/apt** - You get the entire dwelling to yourself, usually including a bedroom, bathroom, kitchen, and a dedicated entrance. The best option if you are seeking a "home away from home". Probably the best option if you are staying in a location for a few days.

  - **Private room** - You get a private room in the apartment/home for sleeping and might share some spaces with others (either the host or other guests). Good for if you want a little privacy, but value a local connection.

  - **Shared room** - You are sleeping in a space shared with others and share the entire space with other people. Popular among flexible travelers looking for budget-friendly stays or someone looking for new friends.
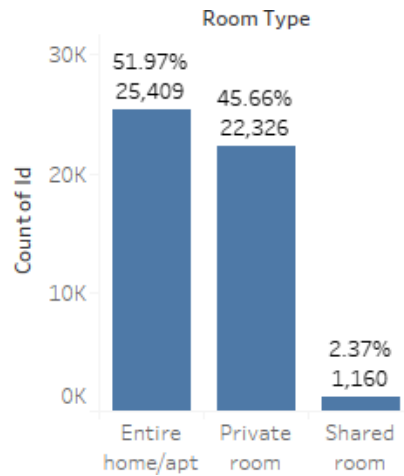
- In NYC, each property is present in following numbers:
  Entire Home/Apartment – 25,409
  Private room – 22,326
  Shared room – 1,160

- The average prices of these rooms are:

| Room Type	Count of Host Id	Avg. Price
Entire home/apt	25,409	$214.80
Private room	22,326	$91.86
Shared room	1,160	$70.80

Hosts

- The top 10 hosts for NYC Airbnb that have maximum reviews are: Michael, David, John, Alex, Daniel,Sarah,Maria,Jessica,Sonder(NYC).
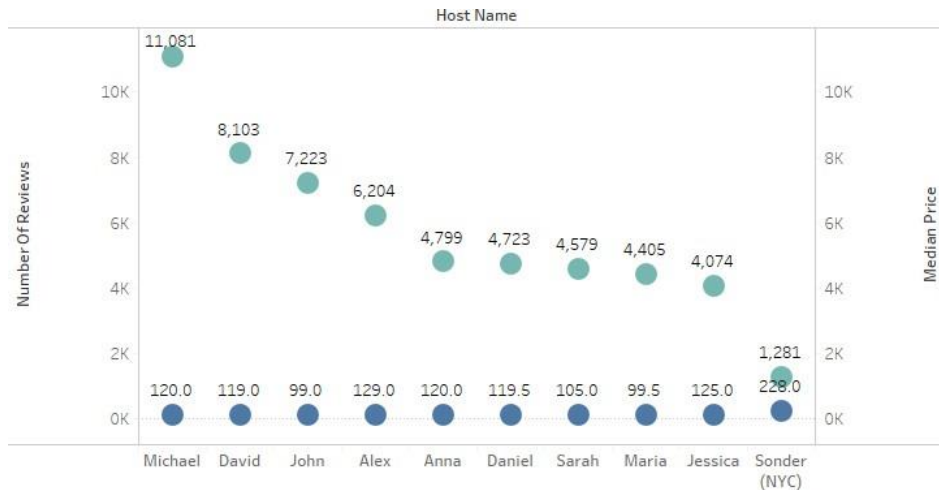
- The hosts that have received most reviewed are:
  Danielle, David, Eric, Jaosn, John, Kevin, Maya, Michael, Sarah These hosts have received **more than 2000reviews**.

- We observed that the count, 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 yea**r, the property is available at least 150 days of the year. These properties are situated in areas of Brooklyn and Manhattan.

Pricing:

- 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.
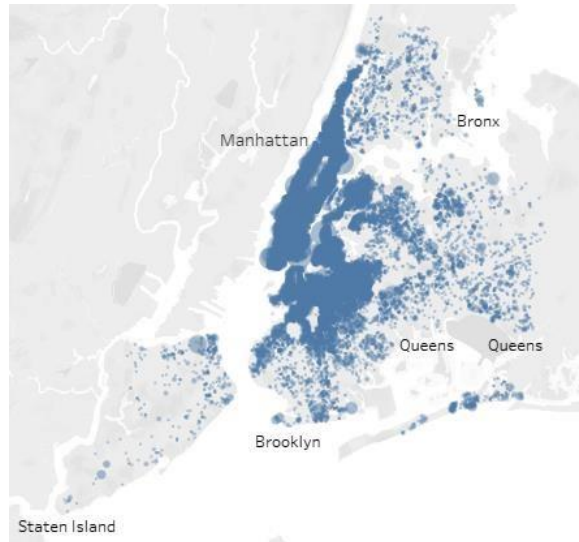
- Average Price according to neighborhood and neighborhood group

Neighbourhood	Neighbourhood Group	Avg. Price
Fort Wadsworth	Staten Island	$800.00
Woodrow	Staten Island	$700.00
Tribeca	Manhattan	$490.64
Sea Gate	Brooklyn	$487.86
Riverdale	Bronx	$442.09
Prince's Bay	Staten Island	$409.50
Battery Park City	Manhattan	$367.56
Flatiron District	Manhattan	$341.93
Randall Manor	Staten Island	$336.00
NoHo	Manhattan	$295.72

- 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.

- Ranking for neighborhoods (most to least expensive), using the median:

Manhattan ($150) > Brooklyn ($90) > Queens ($75) = Staten Island ($75) > Bronx ($65)

- The majority of the listings are in Manhattan and Brooklyn, so it makes sense that there is more variation in the prices. With all of the stuff to do in New York City, Manhattan would be the first choice for a person to stay, since it would be close to a lot of places. But, if you're willing to spend a bit more time getting to your location, you can save a bit of money by just staying in Brooklyn.

Number of Reviews:

- No. of Reviews for every neighborhood group:
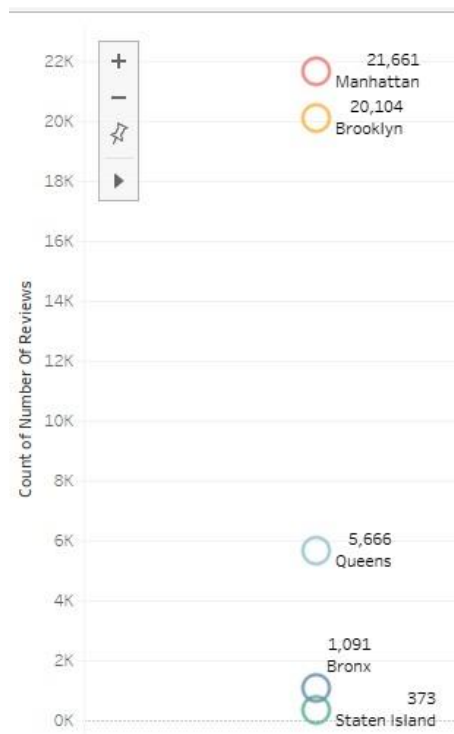
- Average Price according to neighborhood and no. of reviews:

Avg Price varying according to neighborhood area and reviews per month
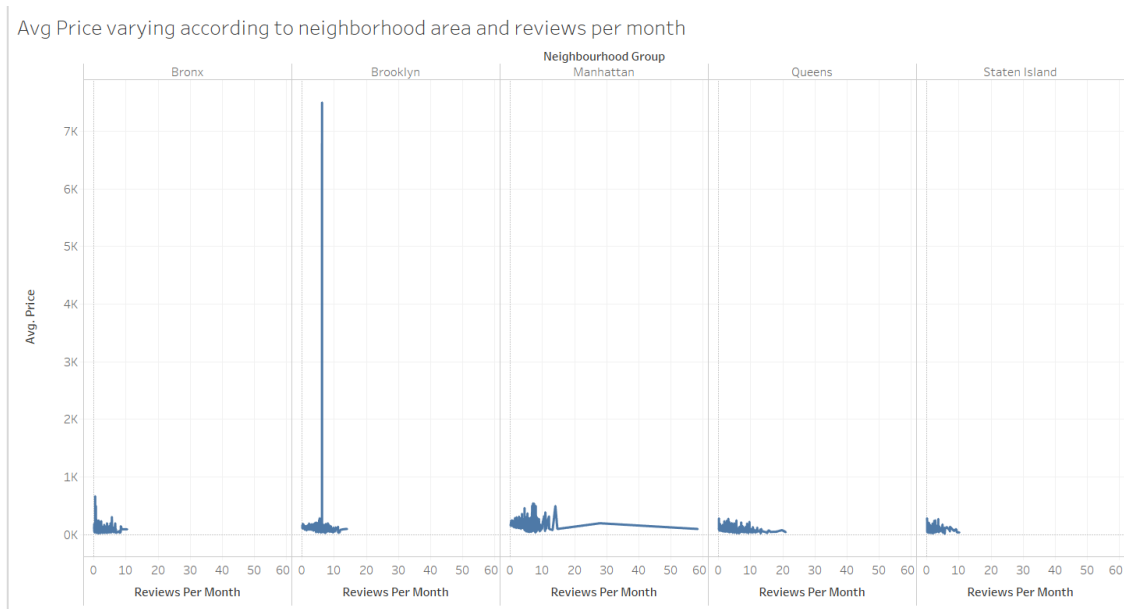
Through the results we can see that the combination of the neighborhood group and no. of reviews do not affect the average price of a listing.

Recommendations:

- Airbnb should focus on long stays (30 days and more) as it is gaining traction and post COVID, guests will be using as staycation (working or studying) along with doing tourism.

- The prices of the Entire apartment can be taken into consideration if the stay duration is longer.

- Focus on increase properties in Bronx as it is a part of US mainland with attractions such as Bronx Zoo and Yankee Stadium.

- Minimum no. of nights offered by the host should be on a lesser side as it attracts more tourists.

- People are looking to get away from crowded cities to remote locations. Hence, Properties in Queens and Staten Island will also attract travelers as the places are less populated.