Capstone Project
The Battle of Neighborhoods

Introduction

New York City's demographics show that it is a large and ethnically diverse metropolis. It is the largest city in the United States with a long history of international immigration. New York City was home to nearly 8.5 million people in 2014, accounting for over 40% of the population of New York State and a slightly lower percentage of the New York metropolitan area, home to approximately 23.6 million. Over the last decade the city has been growing faster than the region. The New York region continues to be by far the leading metropolitan gateway for legal immigrants admitted into the United States.

Throughout its history, New York City has been a major point of entry for immigrants; the term "melting pot" was coined to describe densely populated immigrant neighborhoods on the Lower East Side. As many as 800 languages are spoken in New York, making it the most linguistically diverse city in the world. English remains the most widely spoken language, although there are areas in the outer boroughs in which up to 25% of people speak English as an alternate language, and/or have limited or no English language fluency. English is least spoken in neighborhoods such as Flushing, Sunset Park, and Corona.

With it's diverse culture , comes diverse food items. There are many resturants in New york City, each beloning to different categories like Chinese , Sushi, Indian , French etc.

So as part of this project , we will list and visualize all major parts of New York City that has great sushi resturants.

Data

For this project we need the following data:

New York City data that contains list Boroughs, Neighborhoods along with their latitude and longitude. Data source : https://cocl.us/new_york_dataset Description : This data set contains the required information. And we will use this data set to explore various neighborhoods of new york city.

Sushi resturants in each neighborhood of new york city.

Data source : Fousquare API Description : By using this api we will get all the venues in each neighborhood. We can filter these venues to get only sushi resturants.

GeoSpace data

Data source : https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm Description : By using this geo space data we will get the New york Borough boundaries that will help us visualize choropleth map.

Approach

Collect the new york city data from https://cocl.us/new_york_dataset Using FourSquare API we will find all venues for each neighborhood. Filter out all venues that are Indian Resturants. Find rating , tips and like count for each Indian Resturants using FourSquare API. Using rating for each resturant , we will sort that data. Visualize the Ranking of neighborhoods using folium library(python) Questions that can be asked using the above mentioned

Datasets

What is best location in New York City for Indian Cuisine ? Which areas have potential Indian Resturant Market ? Which all areas lack Indian Resturants ? Which is the best place to stay if I prefer Indian Cuisine ?

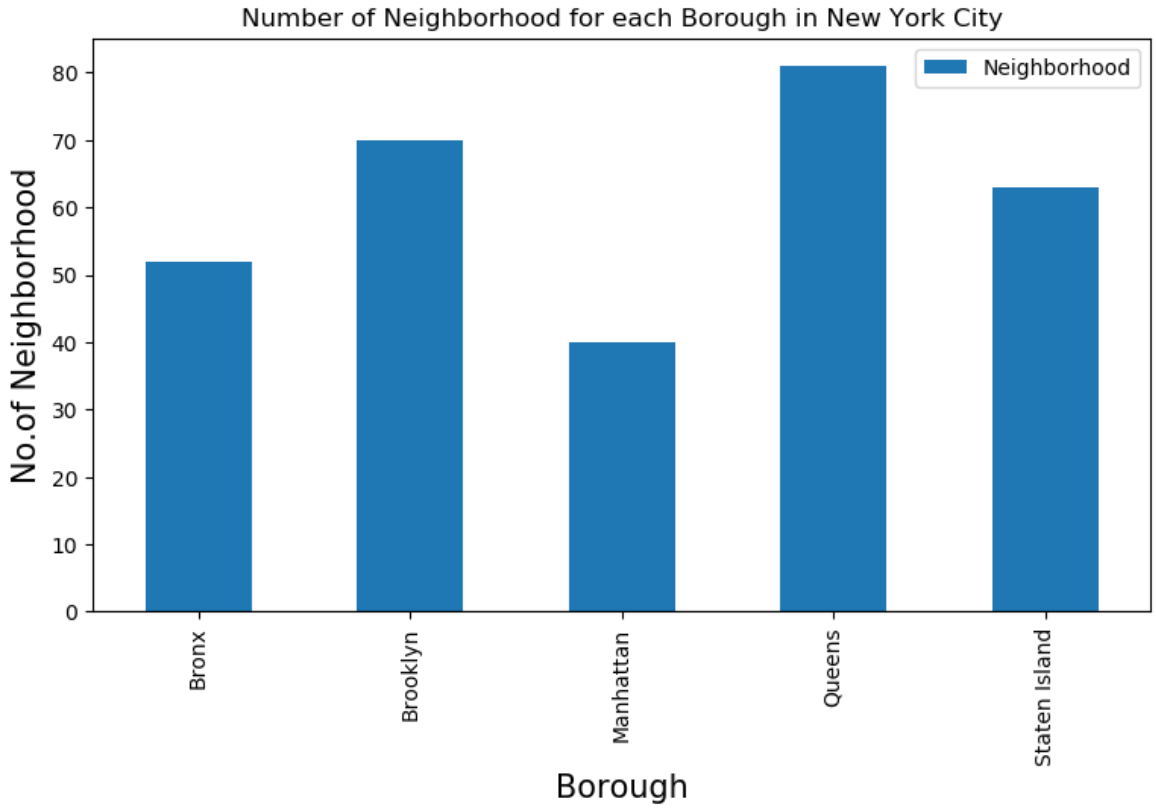
Analysis

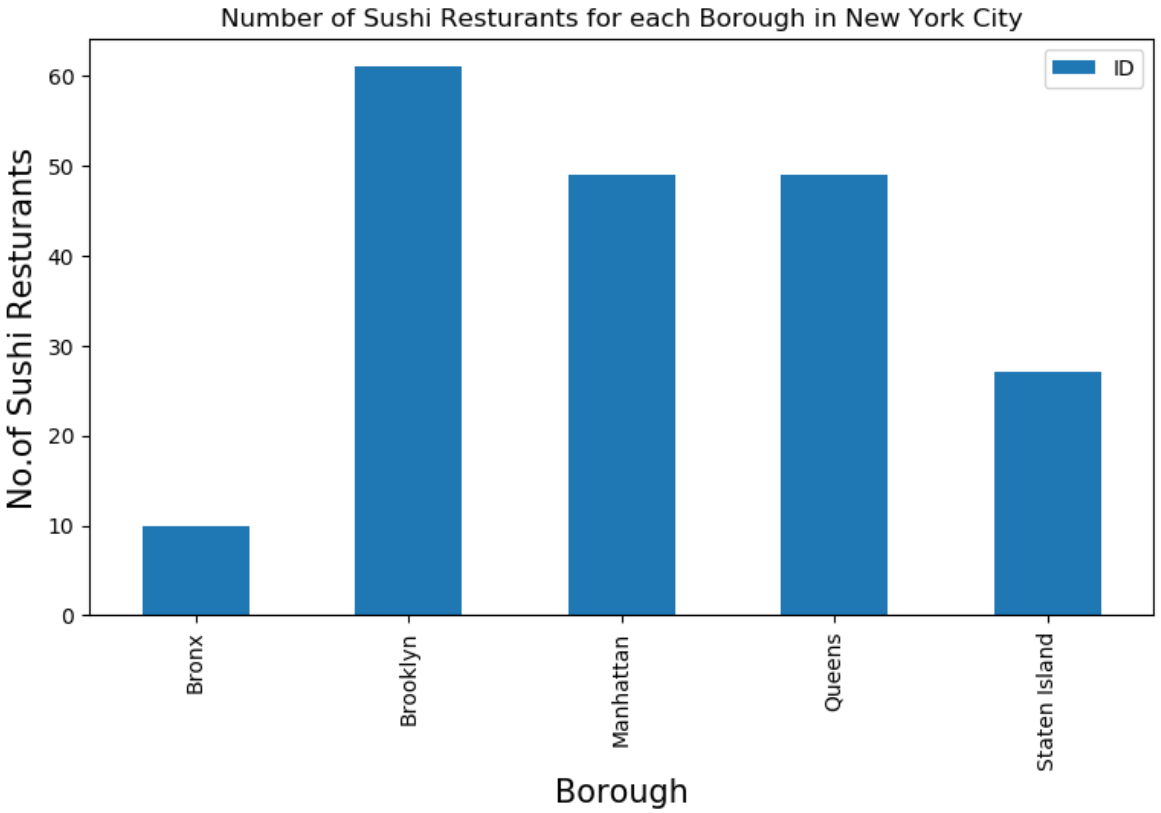
We will import the required libraries for python.

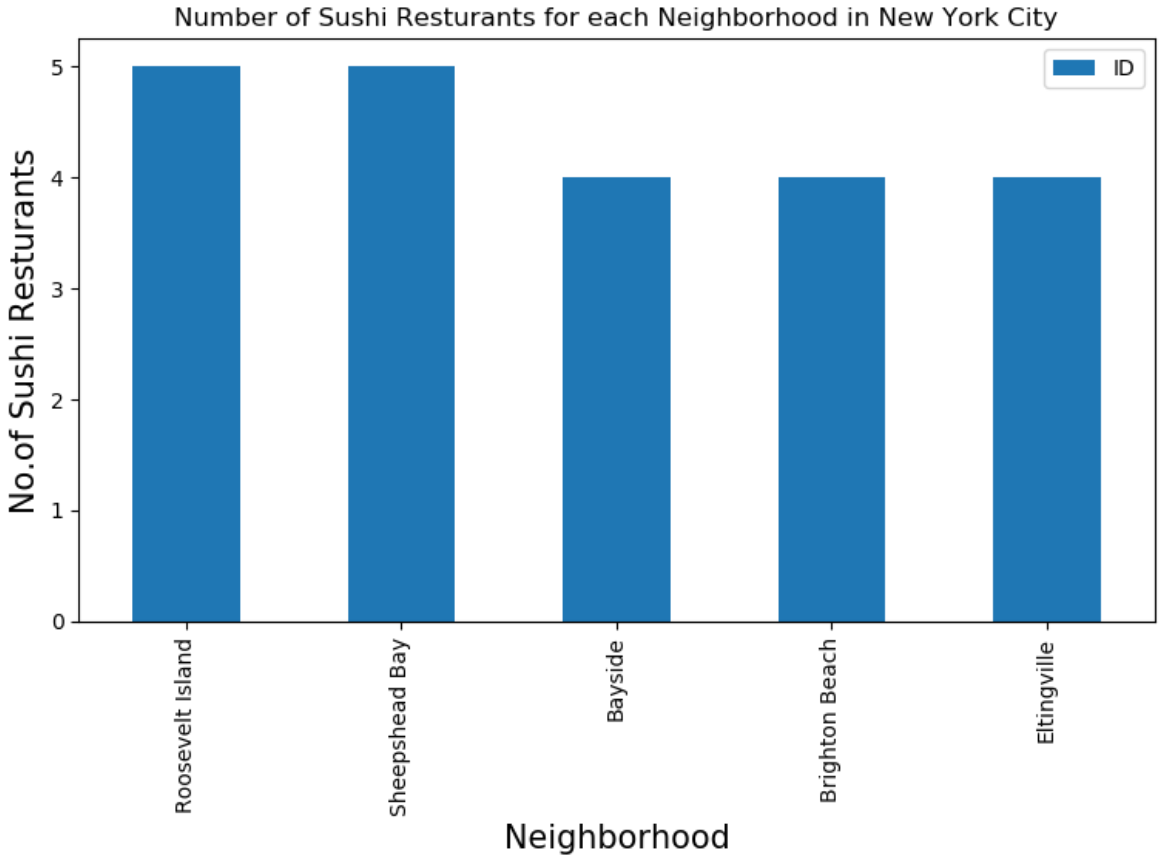
pandas and numpy for handling data. request module for using FourSquare API. geopy to get co-ordinates of City of New York. folium to visualize the results on a map

We will call the above funtion to get the new york city data.

	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585




Number of Sushi Resturants for each Borough in New York City
ID
No.of Sushi Resturants
0
10
20
30
40
50
60
Bronx
Brooklyn
Manhattan
Queens
Staten Island
Borough


Number of Sushi Resturants for each Neighborhood in New York City
ID
No.of Sushi Resturants
0
1
2
3
4
5
Roosevelt Island
Sheepshead Bay
Bayside
Brighton Beach
Eltingville
Neighborhood

Data set of the Values, Tips and Strings

We see that values like Likes, Tips are strig values. We would need to convert them into float for further analysis

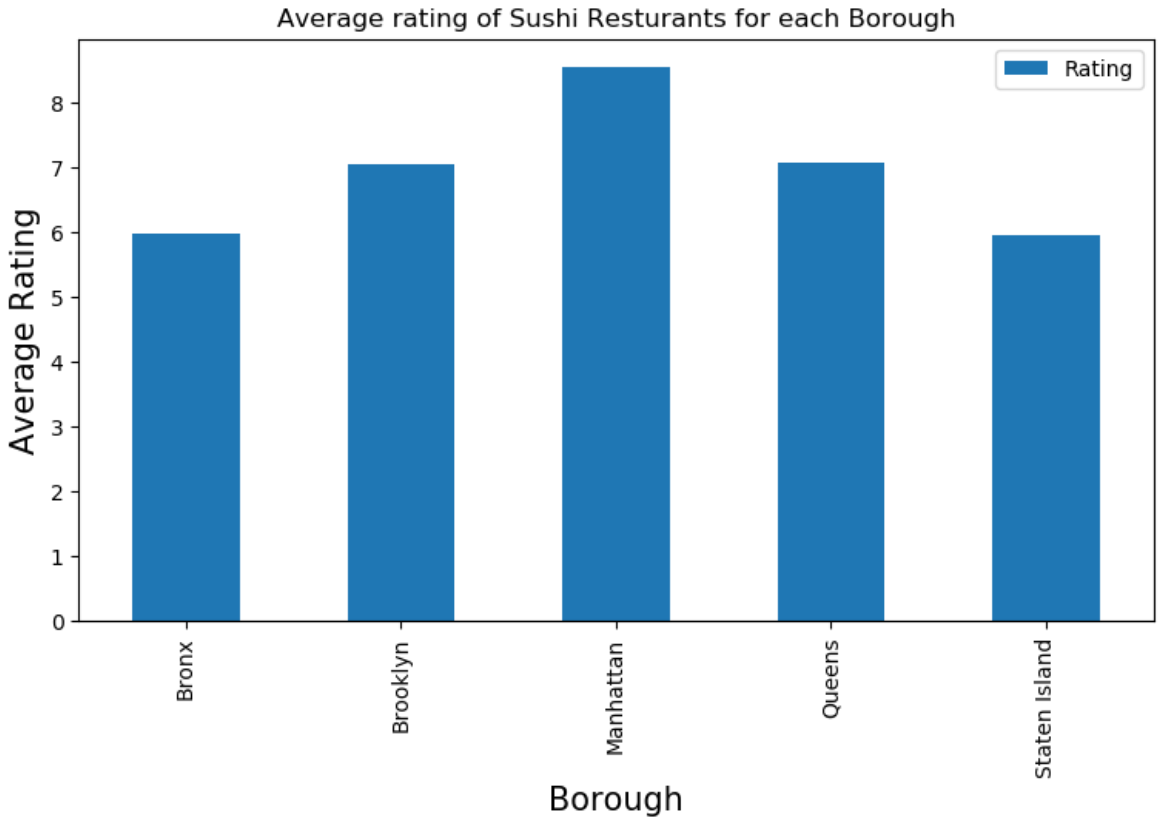
	Neighborhood	Average Rating
92	Soho	9.30
35	Flatiron	9.30
45	Greenwich Village	9.25
104	West Village	9.20
65	Midtown	9.20
21	Chelsea	9.20
107	Williamsburg	9.10
93	South Side	9.10
74	North Side	9.10
55	Lincoln Square	9.05

Above are the top neighborhoods with top average rating of Sushi resturants

	Borough	Average Rating
2	Manhattan	8.553061
3	Queens	7.069388
1	Brooklyn	7.059016
0	Bronx	5.980000
4	Staten Island	5.951852

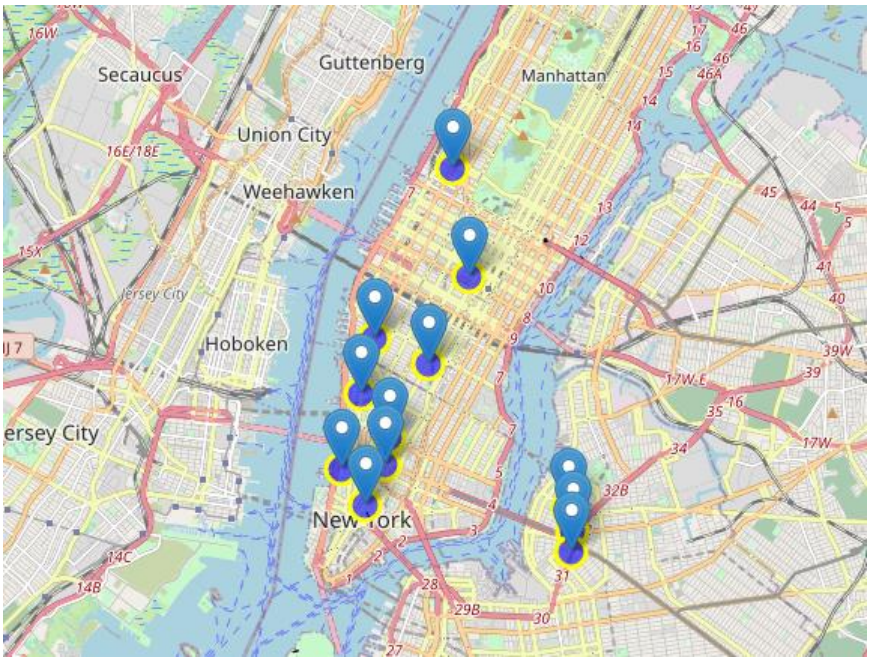
Similarly these are the average rating of Sushi Resturants for each Borough

Lets visualize it



We will consider all the neighborhoods with average rating greater or equal 9.0 to visualize on map

	Borough	Neighborhood	Latitude	Longitude	Average Rating
0	Manhattan	Chelsea	40.744035	-74.003116	9.20
1	Staten Island	Chelsea	40.594726	-74.189560	9.20
2	Manhattan	Civic Center	40.715229	-74.005415	9.00
3	Manhattan	Flatiron	40.739673	-73.990947	9.30
4	Manhattan	Greenwich Village	40.726933	-73.999914	9.25
5	Manhattan	Lincoln Square	40.773529	-73.985338	9.05
6	Manhattan	Midtown	40.754691	-73.981669	9.20
7	Brooklyn	North Side	40.714823	-73.958809	9.10
8	Manhattan	Soho	40.722184	-74.000657	9.30
9	Brooklyn	South Side	40.710861	-73.958001	9.10
10	Manhattan	Tribeca	40.721522	-74.010683	9.00
11	Manhattan	West Village	40.734434	-74.006180	9.20
12	Brooklyn	Williamsburg	40.707144	-73.958115	9.10



Conclusion¶

Manhattan are some of the best neighborhoods for Sushi cuisine. Manhattan have potential Sushi Resturant Market/ XXXXXXX ranks last in average rating of Sushi Resturants. Manhattan is the best place to stay if you prefer Indian Cuisine.

Limitations

The ranking is purely on basis of rating of resturants The accuracy of data depends purely depends on the data provided by FourSquare.