Introduction

The City of New York, usually referred to as either New York City (NYC) or simply New York (NY), is the most populous city in the United States. With an estimated 2018 population of 8,398,748 distributed over a land area of about 302.6 square miles (784 km2). 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.

Problem

A French entrepreneur has come to us for assistance on his new project So as part of this project , we will list and visualize all major parts of New York City that has French Resturants and possible sites for launching a french restaurant.

Data

For this project we need the following data :

1. 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.
2. French 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 French Resturants.
3. 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

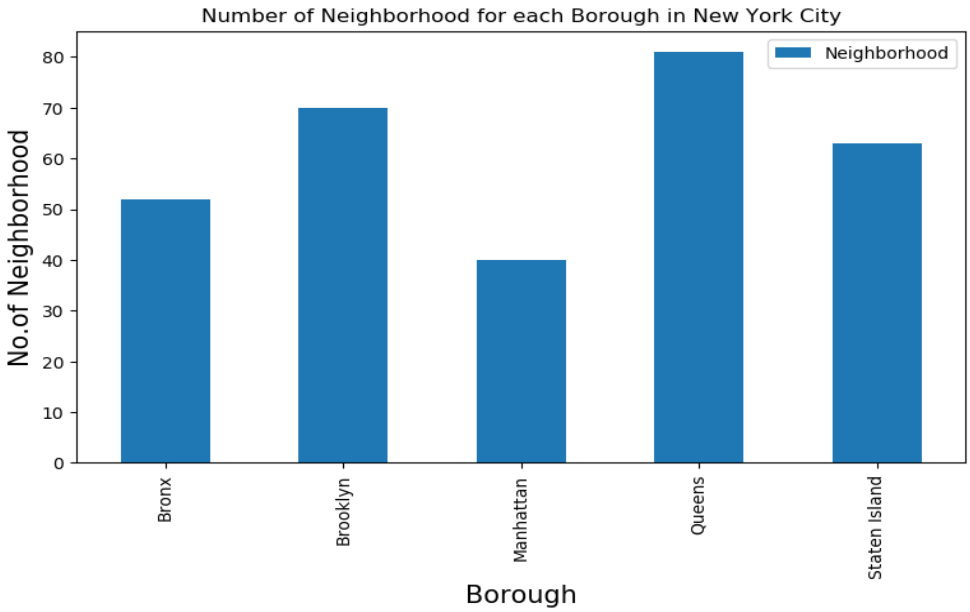
1. Collect the new york city data from https://cocl.us/new_york_dataset
2. Using FourSquare API we will find all venues for each neighborhood.
3. Filter out all venues that have French Resturants.
4. Find rating , tips and like count for each French Resturants using FourSquare API.
5. Using rating for each resturant , we will sort that data.
6. Visualize the Ranking of neighborhoods using folium library(python)

Questions that can be asked using the above mentioned datasets

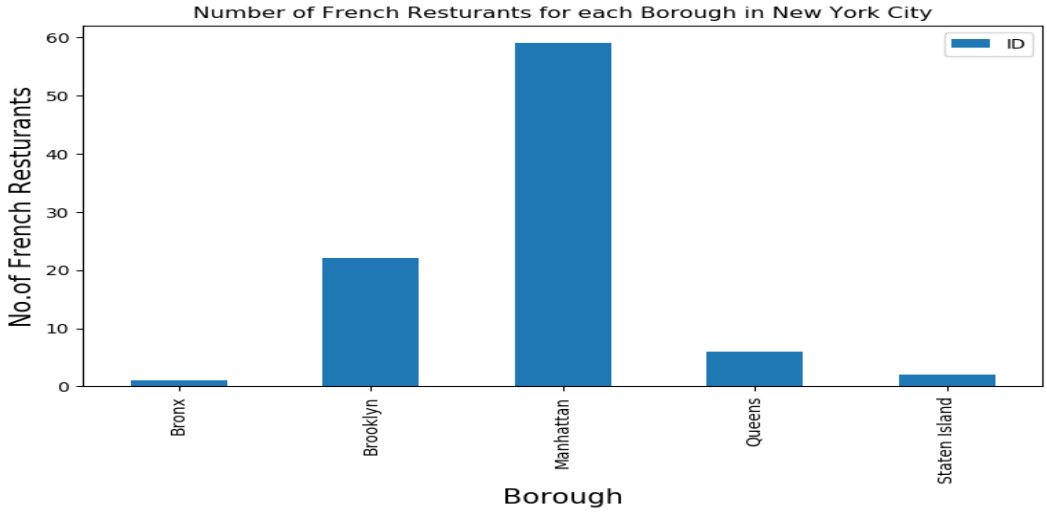
- What is best location in New York City for French Cuisine ?
- Which areas have potential French Resturant Market ?
- Which all areas lack French Resturant ?

Analysis

First, we will identify all the neighbourhoods in the city of New York clustering them by boroughs. We can observe the number of neighbourhoods in each borough as shown by the histogram.

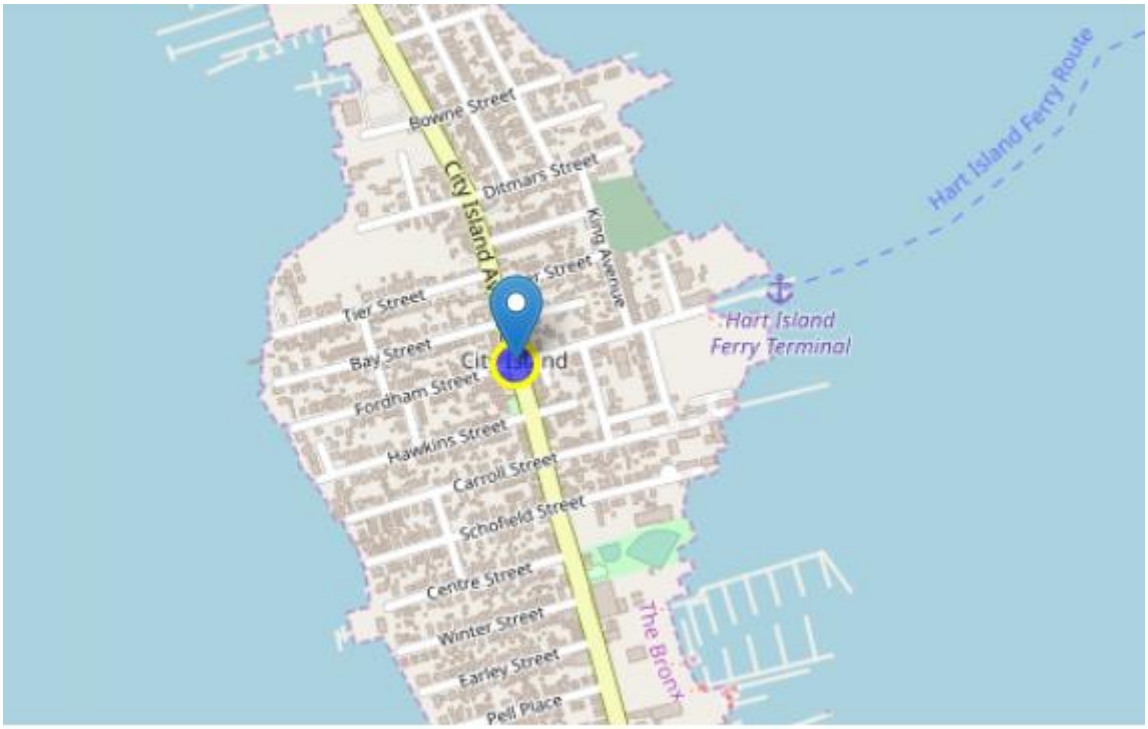


Our next objective is now to visualize all the French restaurants in each borough. As shown in the graph below, it seems Manhattan is quite a destination for the French cuisine but since we are identifying an ideal location for our client, we will aim for a borough which qualifies as a place lacking in both quantity and quality. We can see two places best suited i.e. Staten island and Bronx. Since Bronx is the 3rd most densely populated borough and Staten is not, we will choose Bronx to set up our new project as it has only 1 French restaurant.



Summary

Below is the map of the neighbourhood with 1 Restaurant, and if we further dig in for details using the Foursquare Api, it seems that this restaurant has not made a mark on the people.



	Borough_x	Neighborhood	ID	Name	Likes	Rating	Tips	Borough_y
0	Bronx	City Island	4d7aa83ee540f04d66ba16dc	Bistro SK	13	7.5	7	Bronx

Conclusion

Bronx is the 3rd most densely population borough in New York. We have 51 places to explore and set up a restaurant. We could use different methods like survey, footfalls etc which will help to pinpoint the exact set up location for the client.