Capstone Project - The Battle of Neighborhoods

Chinese restaurants in New York

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Introduction/ Business problem

The New York metropolitan area is home to the largest and most prominent ethnic Chinese population outside of Asia. New York City is experiencing a Chinese food renaissance. Never before have the city's offerings been so diverse; not only are multiple regions represented, but price points range, too. Despite the fact that the COVID-19 pandemic is far from over, chinese restaurants have reopened faster than any other category of independent restaurant. As follows from the above, New York City attracts many to start their business in the Chinese food industry. Before opening your business, you need to correctly determine the location, for which you need to analyze the situation with existing restaurants, their specifics and ratings in different areas of New York.

Data.

New York City data that contains list of Boroughs and 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.

Chinese restaurants 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 chinese resturants.

GeoSpace data

Data source : https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm

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 Chinese Resturants.

Find rating , tips and like count for each Chinese Resturants using FourSquare API.

Using rating for each resturant , we will sort that data.

Visualize the Ranking of neighborhoods using folium library

Methodology

Required Libraries

pandas and numpy for handling data.

request module for using FourSquare API.

geopy to get co-ordinates of City of New York.
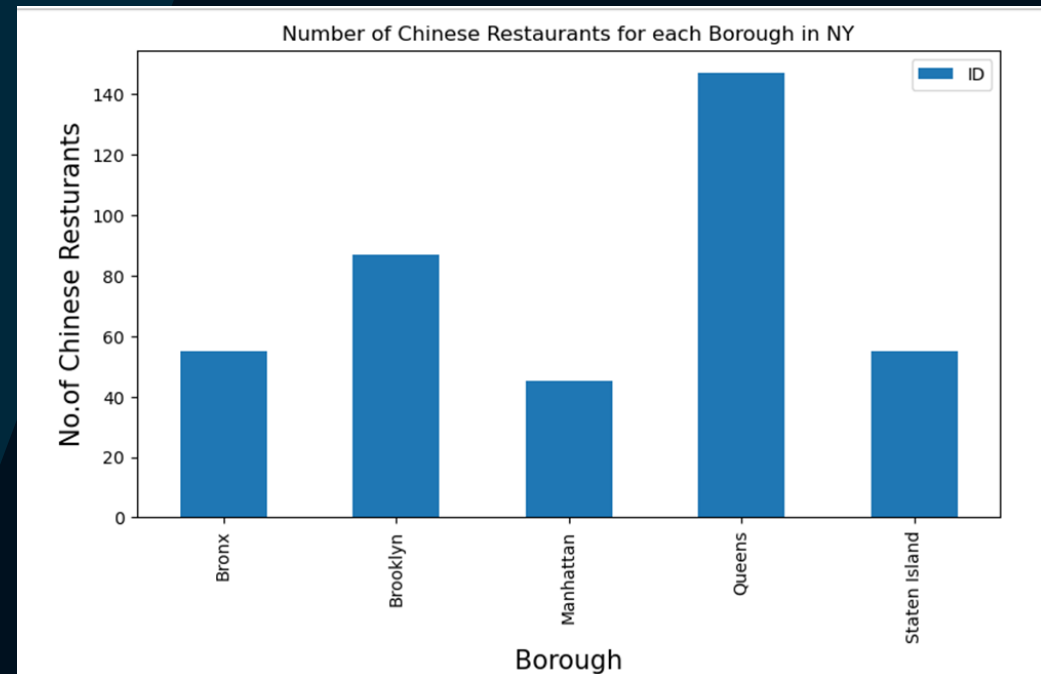
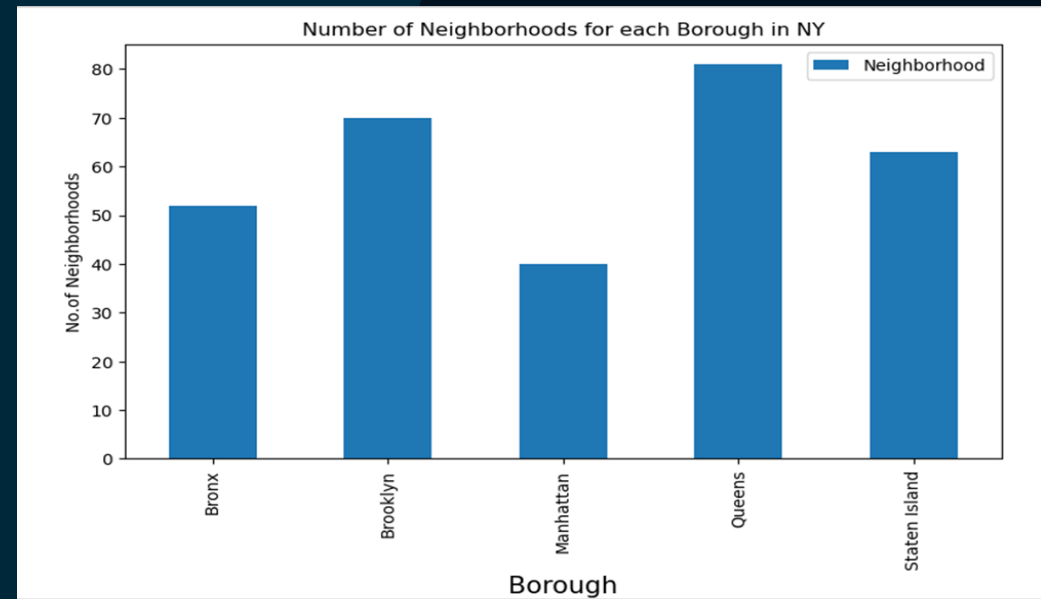folium to visualize the results on a map

Defining functions

Function to get the geocodes i.e latitude and longitude of a given location using geopy.

Function to intract with FourSquare API and get top 100 venues within a radius of 1000 metres for a given latitude and longitude

Function to get venue details like like count , rating , tip counts for a given venue ID

Function to get the New York city data such as Boroughs, Neighborhoods along with their latitude and longitude

Results

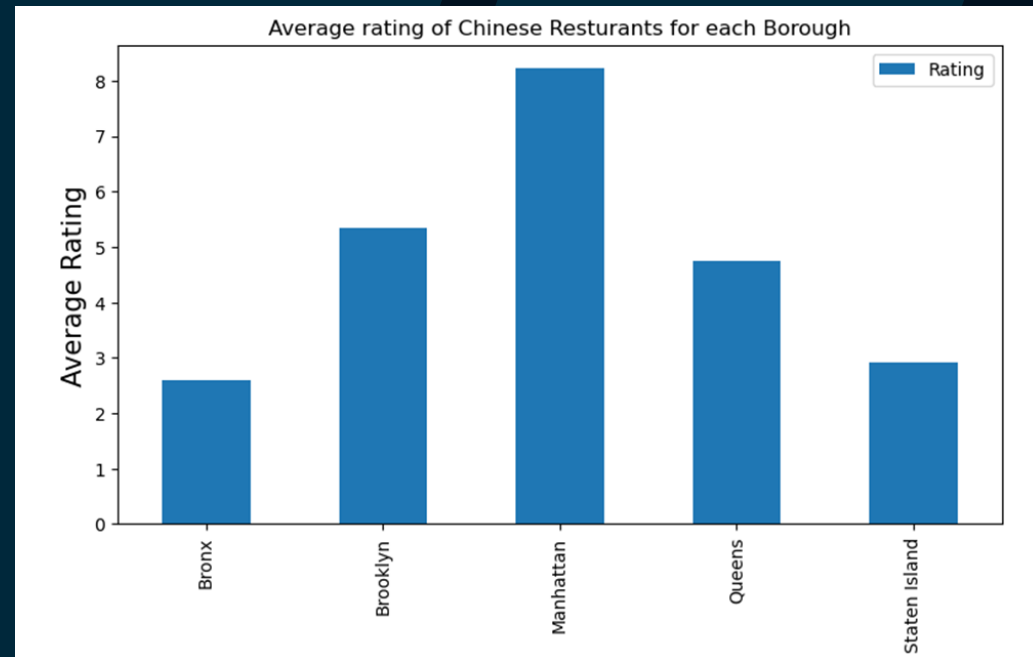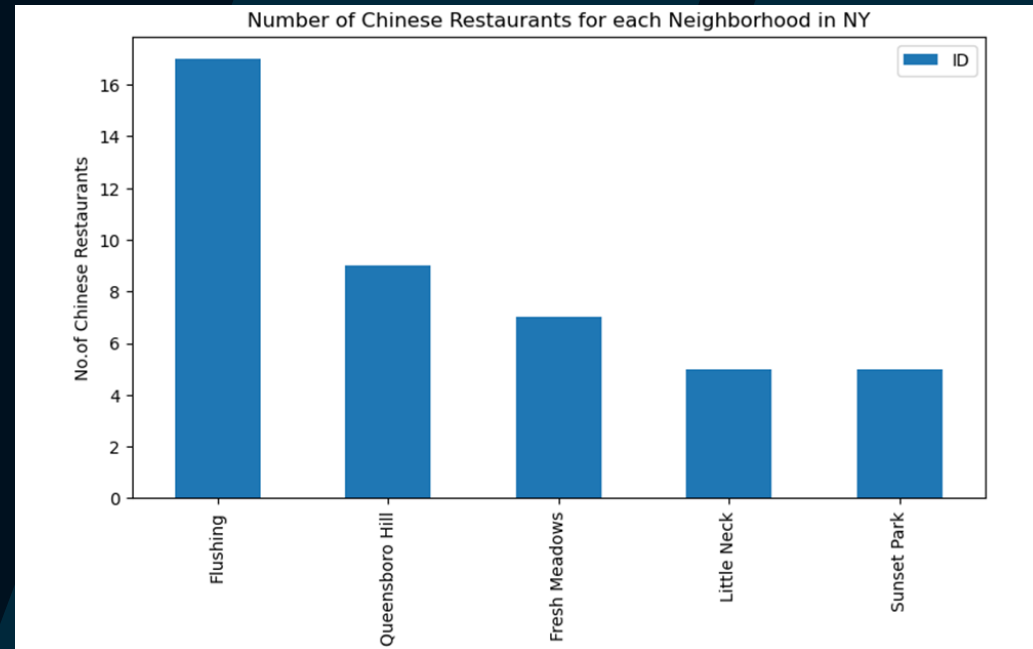We see that Queens has the highest number of Neighbourhoods.

Also Queens has the highest number of Chinese Restaurants

Number of Neighborhoods for each Borough in NY

Number of Chinese Restaurants for each Borough in NY

Results

Flushing in Queens has the highest number of Chinese Restaurants with a total count of 17

Manhattan has the highest average rating for Chinese Restaurants

Number of Chinese Restaurants for each Neighborhood in NY

Average rating of Chinese Resturants for each Borough

Results

We will consider all the neighborhoods with average rating greater or equal 8.0 to visualize on map

We will join this dataset to original new york data to get lonitude and latitude

Now we will show this data on a map

Conclusion

Queens borough has the largest amount of chinese reatuarants in NY, far ahead of others. Bronx, Manhattan and Staten island have not large amount, relatively equal in size.

Manhattan has an excellent rating of chinese restaraunts, while Brooklyn and Queens have a moderate one, Bronx and Staten island with poorest rating.

Buddakan (Chelsea, Manhattan) is the most popular chinese restaurant in NY, and Kings County Imperial (Lower East Side, Manhattan) is the most respectable and refined.

Manhattan has significant potential for the opening of new restaurants.

Since Queens is a popular area and not very highly rated, its potential for chinese restaurant market requires further study. It also colud be recommended for for visitors who are not too demanding on the quality of the establishment.

Brooklyn is obviously a much better borough based on the price / quality criterion, than Bronx and Staten Island.

Limitations

The ranking is purely on basis of rating of resturants

The accuracy of data depends purely depends on the data provided by FourSquare

Thank You!