Coursera Capstone Project — The Battle of Neighbourhoods

As part of the final project, I have chosen to explore **Chinese restaurants** in the city of New York.

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 over 8.3 million people in 2019, 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 neighbourhoods 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 neighbourhoods such as Flushing, Sunset Park, and Corona.

With its diverse culture, comes diverse food items. There are many restaurants in New York City, each belonging to different categories like Chinese, Indian , French etc. So, as part of this project, we will list and visualise all major parts of New York City that has great **Chinese restaurants**.

Target Audience
Citizens from New York and Travellers from all over the world who are in New York, and are found of Chinese Cuisines.

Data
For this project we need the following data:
1. **New York City data**
   - **Description**: New York City data that contains list of Boroughs, Neighbourhoods
   - **Used for**: Explore various neighbourhoods of New York city
   - **Source**: https://cocl.us/new_york_dataset
2. **Restaurant Data**
   - **Description**: Chinese restaurants in each Neighbourhoods of New York city
   - **Used for**: Identify Neighbourhoods with most Chinese restaurants
   - **Source**: Fousquare API (Regular Call)

3. **Ratings Data**
   - **Description**: Ratings for every Chinese restaurants
   - **Used for**: To identify Popular Chinese restaurants
   - **Source**: Fousquare API (Premium Call)
4. **GeoSpace data**
   - **Description**: By using this geo space data we will get the New York Borough boundaries
   - **Used for**: To visualize choropleth map based on highest ratings for Borough
   - **Soruce**: https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm

Approach:
- Collect the New York city data
- Using FourSquare API we will find all venues for each neighbourhood.
- Filter out all venues that are Chinese Restaurants.
- Find rating , tips and like count for each Chinese Restaurants using FourSquare API.
- Using rating for each restaurant, we will sort that data.
- Visualize the Ranking of neighbourhoods using folium library(python)

What questions can we answer using above approach?
- Which is the best location in New York City for Chinese Cuisine ?
- Which areas have potential Chinese Restaurant Market ?
- Which all areas lack Chinese Restaurants?
- Which is the best place to stay if I prefer Chinese Cuisine?

Analysis
The results are as present below:

Number of records
There are 306 records present in the dataset. The snapshot shows the visual data that we read from Jupyter notebook.

new_york_df.head()

	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

new_york_df.shape

(306, 4)

**Highest number of neighbourhoods – Queens**

Number of Neighborhood for each Borough in New York City
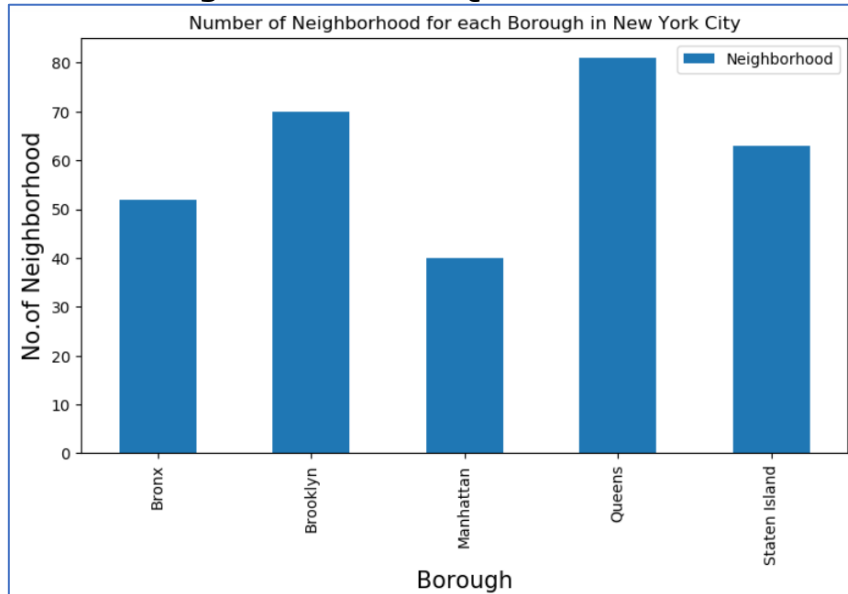
Highest number of Chinese restaurants - Queens

Number of Chinese Restaurants for each Borough in New York City
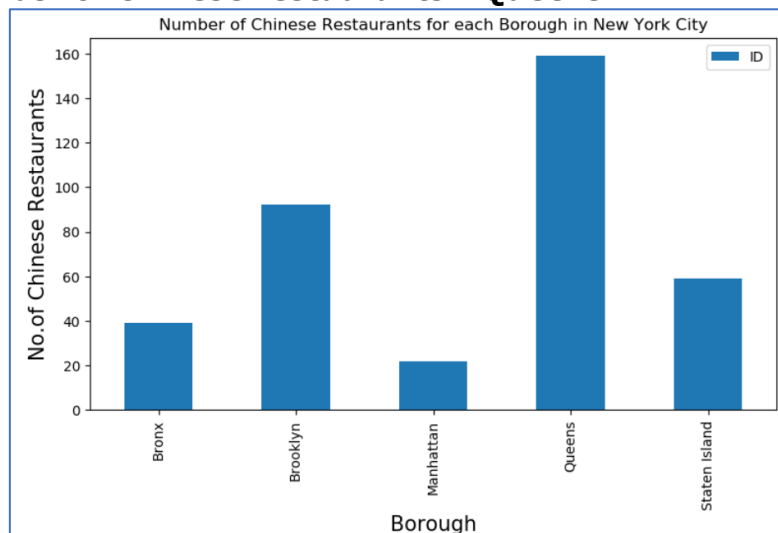
Queensboro Hill in **Queens** has the highest number of Chinese Restaurants with a total count of 14.

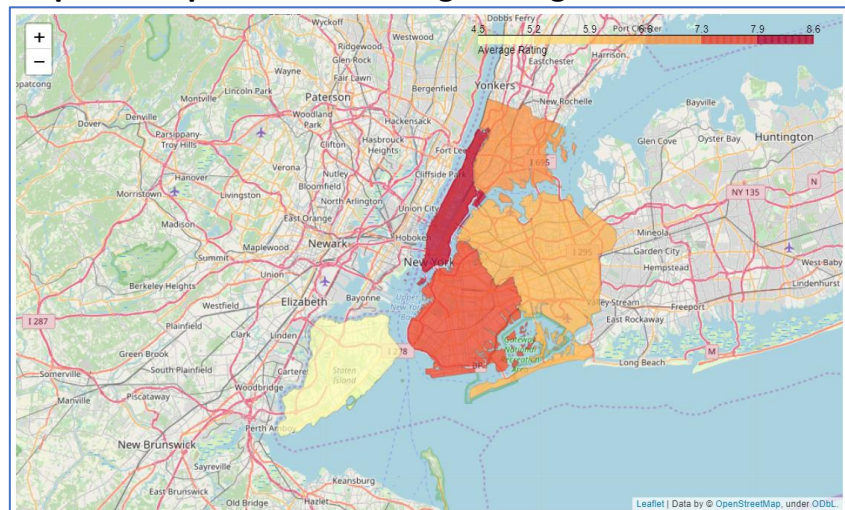Number of Chinese Restaurants for each Neighborhood in New York City
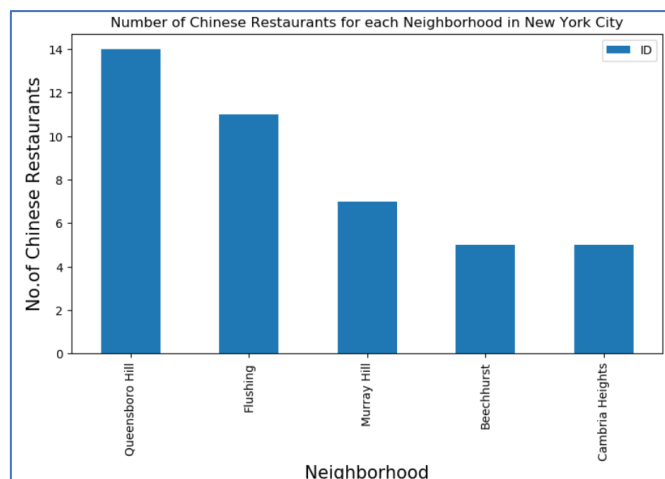
Manhattan has the highest average rating for Chinese Restaurants
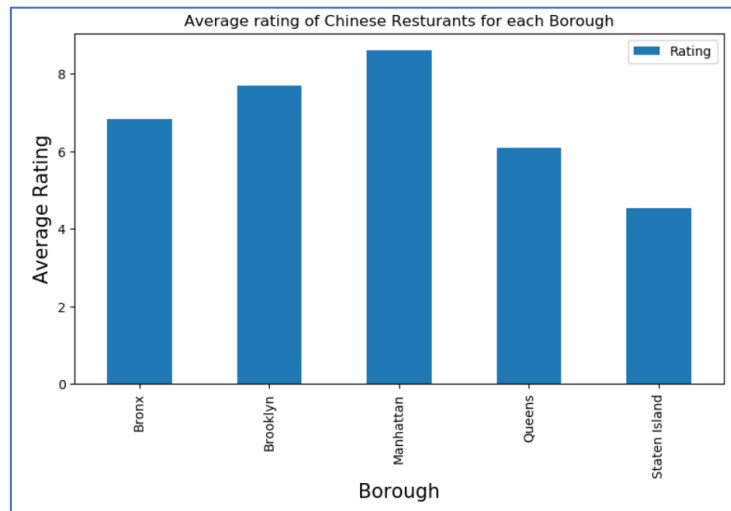
Best neighbourhoods in New York that has **highest average rating** for Chinese Restaurants
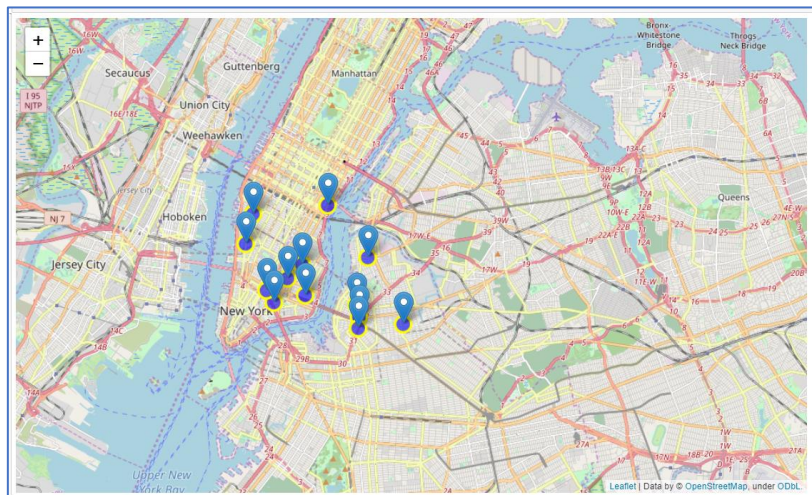
Borough **Choropleth map** based on average rating of Chinese Restaurants

Conclusion

- Chelsea(Manhattan), Noho (Manhattan), Greenpoint(Brooklyn) are some of the best neighbourhoods for Chinese cuisine.
- Manhattan have potential Chinese Restaurants Market
- Manhattan is the best place to stay if you prefer Chinese Cuisine.

Limitations

- The ranking is purely on basis of rating of restaurants
- The accuracy of data depends purely depends on the data provided by FourSquare