

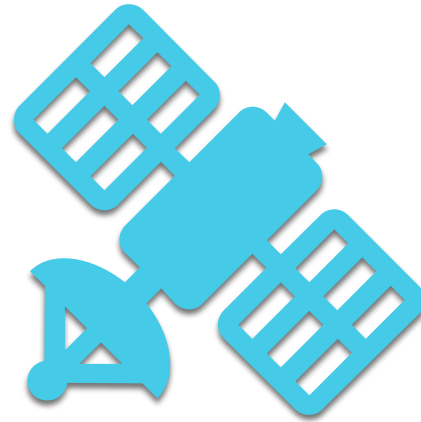


# CAPSTONE PROJ

CHINESE RESTAURANT RECOMMENDATION IN NYC



Description



Calculation result

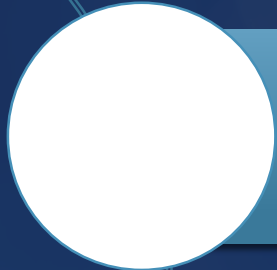


Conclusion

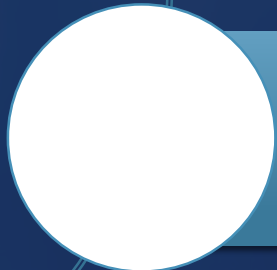
## DISCRIPTION - BACKGROUND

- There are large number of people especially for widespread consumers, travelers and local small business investors are desire to find the most appropriate restaurants for themselves in big city.
- However, the miscellaneous info on the web contain different noise and interfere the people's choice. These kinds of info not only based on the gourmet's review and the numbers of order, but also contain the malicious comments from other competitors. Consequently, in this project, we will identify the several different Chinese restaurants in New York based on location.

# DESCRIPTION PROBLEMS



What is the top ranked Chinese restaurants in terms of neighborhoods and boroughs?



How can we identify the location for small business investors to start and maintain their restaurant business in the city?

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# Description - Data

In this project, we will use the Foursquare data including ID, name and ranking etc. to data frames as the additional one in the later workflow, also we will address the geographic data to the data frames. These efficient elements will be taken into account when we count and analyze the Chinese restaurants, also play a significant role for the later process such as recognize the top ranked restaurants and location info.

Moreover, data visualization in the later process will bring a comprehensive and understandable way to observe the information. The geographic data comes from the official website of [cityofnewyork.us](http://cityofnewyork.us) and [cocl.us](http://cocl.us). Other ratable sources come from the Foursquare.

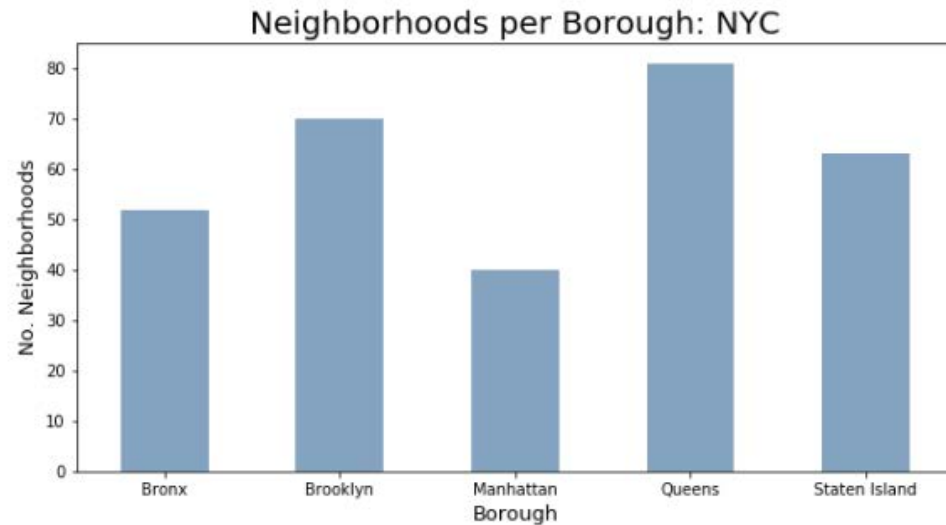


## DESCRIPTION - DATA

- The picture the right position demonstrate the initial data frame related with geographic information:

	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

# DESCRIPTION - DATA



- The bar chart illustrated the preliminary information involved with how many neighborhoods per borough. Apparently, there are great number of neighborhoods in Queens and the least number of neighborhoods in Manhattan.

## DESCRIPTION - DATA

- The next step is to generate the data frame which contains Names, ID and other information. This information are both comes from Foursquare. Through this graph, we can easily compare the total count of Chinese restaurants in different borough.

	Borough	Neighborhood	ID	Name
257	Staten Island	Prince's Bay	4bb7d282b35776b0b83dc801	Island Taste
258	Brooklyn	Madison	4be32bd7b02ec9b61fc34ec0	win hing
259	Bronx	Bronxdale	4c3f7f2eda3dc928b8f6c5b9	Peking Kitchen
260	Bronx	Allerton	4bc11181abf495219f7dc093	Li's Kitchen
261	Queens	Hammels	4c72ad2bad69b60cb31b84b9	301 Chinese Resturant

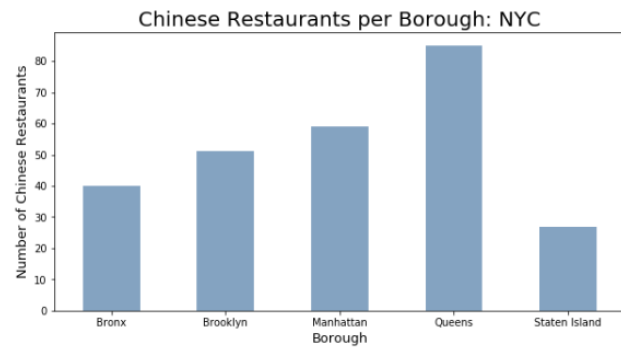


## CALCULATION RESULT

- From the table below we can get the information that it has 269 Chinese restaurants in total throughout the 5 different area in New York, and most of them are distributed in Queens borough.

	ID	Name
Borough		
Bronx	46	46
Brooklyn	56	56
Manhattan	60	60
Queens	83	83
Staten Island	24	24

# CALCULATION RESULT



- As you can see from the bar chart, Chinatown has the largest number of Chinese restaurants per neighborhood (around 10 restaurants).

# CALCULATION RESULT

- The picture shows the another Foursquare, it reveals the overall rating of the restaurants and the tendency of people's choice. In the data cleaning process, we clean the unnecessary data and NAN data (162 remain) in terms of the deep analysis.

	Borough	Neighborhood	ID	Name	Likes	Rating
0	Bronx	Eastchester	0	0	0	0.0
1	Bronx	Kingsbridge	0	0	0	0.0
2	Bronx	Woodlawn	0	0	0	0.0
3	Bronx	Norwood	0	0	0	0.0
4	Bronx	Pelham Parkway	4b9d6b45f964a52078ab36e3	Mr. Q's Chinese Restaurant	9	7.4

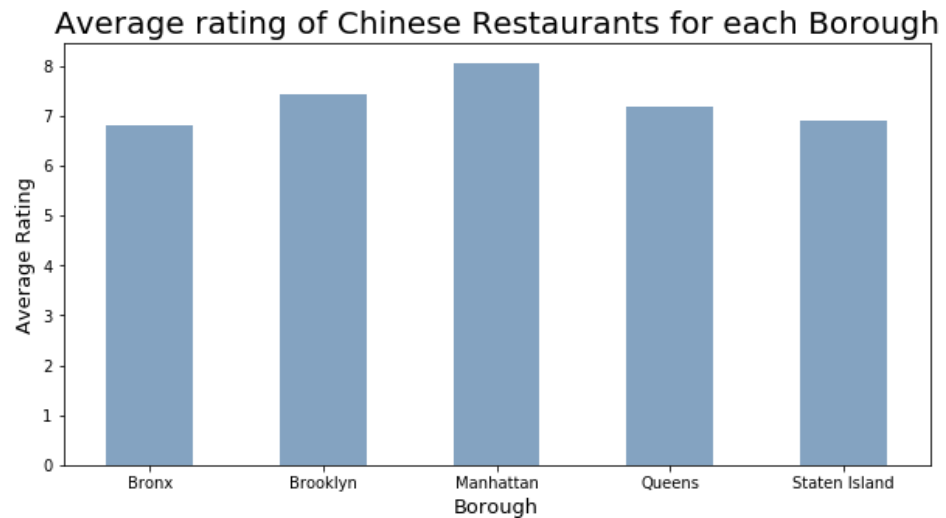
```
#drop rows with zero ratings
indexratingzero=chi_rest_stats_nyc[chi_rest_stats_nyc['Rating']==0].index
chi_rest_stats_nyc.drop(indexratingzero, inplace=True)
chi_rest_stats_nyc.tail()
```

	Borough	Neighborhood	ID	Name	Likes	Rating
263	Brooklyn	Homecrest	4b46743ff964a520892126e3	Golden "Z" Restaurant	9	7.6
264	Brooklyn	Homecrest	4d28b924ebacb1f72efbf34f	Wing Hing Seafood Restaurant	25	6.7
266	Bronx	Bronxdale	4c3f7f2eda3dc928b8f6c5b9	Peking Kitchen	9	7.4
267	Bronx	Allerton	4bc11181abf495219f7dc093	Li's Kitchen	2	7.1
268	Queens	Hammels	4c72ad2bad69b60cb31b84b9	301 Chinese Resturant	9	6.3

```
chi_rest_stats_nyc.info()

<class 'pandas.core.frame.DataFrame'>
Int64Index: 162 entries, 4 to 268
Data columns (total 6 columns):
Borough      162 non-null object
Neighborhood 162 non-null object
ID           162 non-null object
Name         162 non-null object
Likes        162 non-null int64
Rating       162 non-null float64
dtypes: float64(1), int64(1), object(4)
```

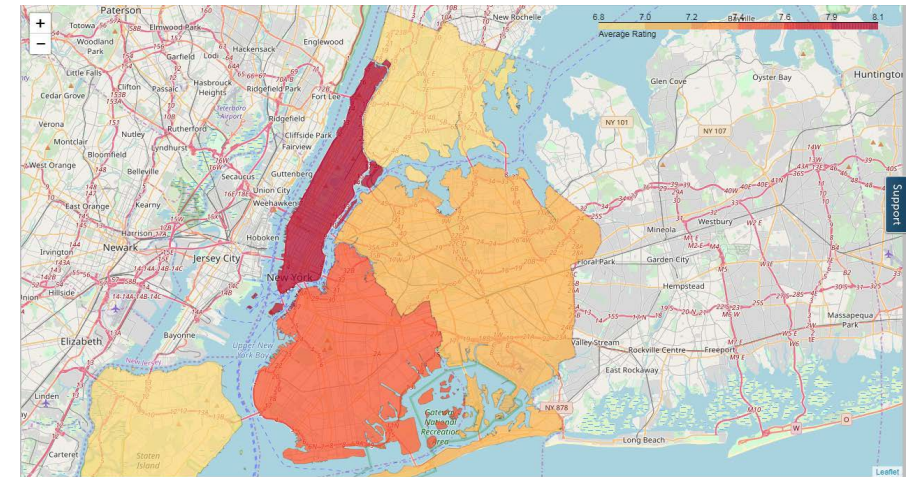
# CALCULATION RESULT



- The top popular restaurant which contains the most people's choice and top rating in the Chelsea neighborhood is Buddakan, as you can see from the picture.

# CALCULATION RESULT

For the last step, the data visualization will bring the data, tables and charts out together as the untreatable map. The following maps (cluster and choropleth) show the average rating of Chinese restaurants.



# CONCLUSION

- Overall, the boughs which contain the largest number of Chinese restaurants are Queens and Manhattan, while the Bronx has the least number of restaurants. For the average rating, the top-ranked area is Brooklyn. However, the best rated restaurants are more likely distributed in Neck. The recommendation and most appropriate suggestion for the small restaurant business investor is that starting a new restaurant in and Brooklyn will be a good choice. For the fresh off the boat and travelers. It is better to consider about Neck. Queen when they want to have a delicious experience and explore the Chinese cuisine culture.





THANKS