

COURSERA CAPSTONE

IBM APPLIED DATA SCIENCE CAPSTONE

CHINESE RESTAURANT

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Introduction

If you carefully watch American TV shows from the 80-90s, you can notice that heroes like to order Chinese food from the delivery service. For example, Bones, The Big Bang Theory, Friends, Sex and the City, and other popular TV series. Chinese food is very popular in New York, not only in multiple neighborhoods, like Chinatown but also in Little Italy, Homecrest, Little Neck. New York is a very popular destination for tourists who come here for experiences, it is a very cosmopolitan city, nevertheless, Chinese cuisine is one of the most popular here, not only among natives, however most Chinese live in New York. So there is good potential for opening a Chinese restaurant here. The food industry is a very good option for investment because it is not that ambiguous as start ups, and people will always be hungry.

This Capstone Project examines the best neighborhoods for opening Chinese restaurants using data analysis and visualization. Location plays an important role in the business, which means it will go bankrupt or survive.

Data

For this project, we use New York data from week 3, for instance, longitude, latitude, neighborhoods, boroughs, using web scraping. Then we use Foursquare API to extract venue details, as location, ratings, tips, likes. Finally, we need to visualize this as a map using Folium.

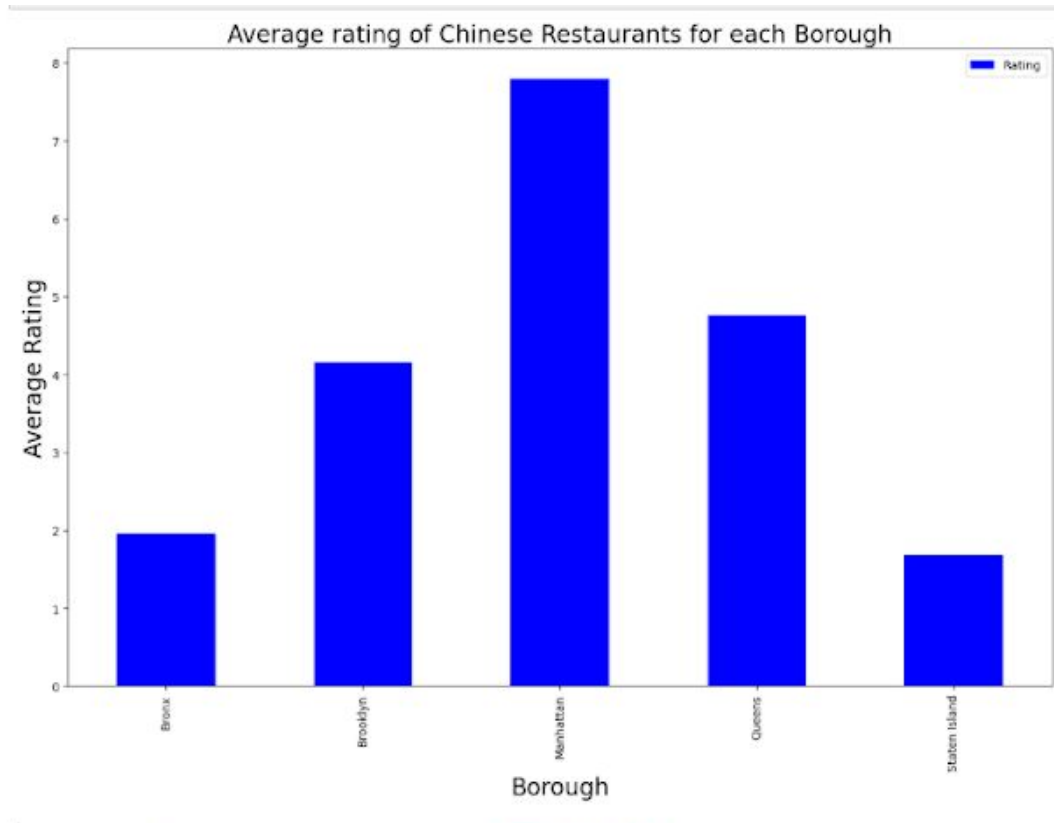
Methodology

1. New York data was scraped from 'https://cocl.us/new_york_dataset'
2. Foursquare API was used to explore boroughs and neighborhoods according to ratings and likes.

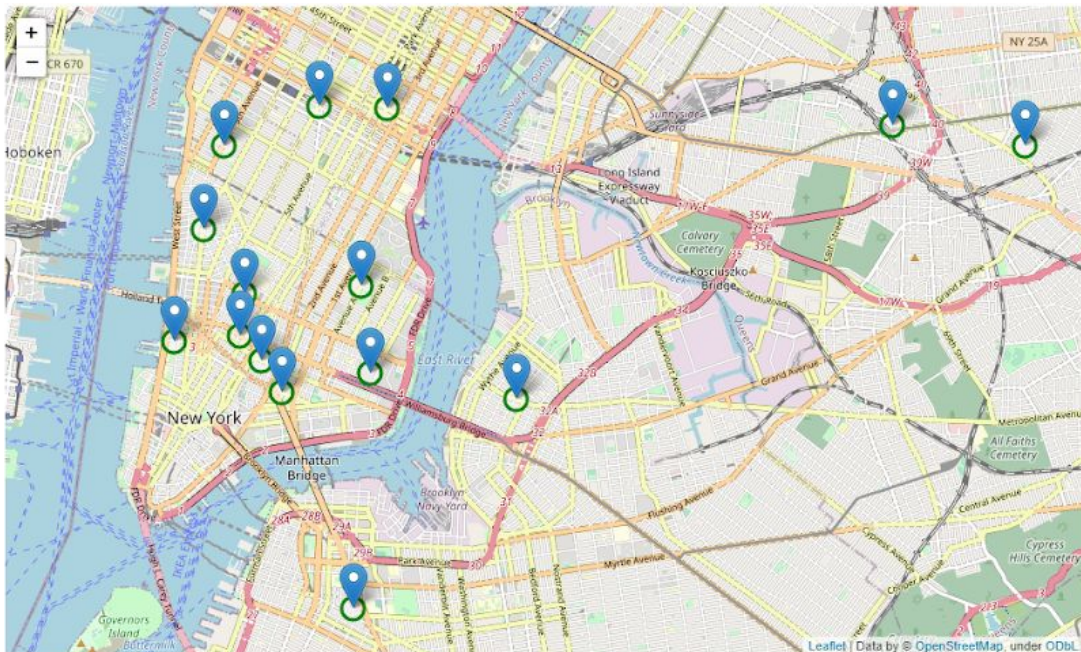
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| | Neighborhood | Average Rating |
|-----|-------------------|----------------|
| 16 | Chelsea | 8.800000 |
| 17 | Chinatown | 8.344444 |
| 29 | Downtown | 8.333333 |
| 33 | East Village | 8.300000 |
| 35 | Elmhurst | 8.200000 |
| 47 | Greenwich Village | 8.400000 |
| 59 | Little Italy | 8.200000 |
| 62 | Lower East Side | 8.350000 |
| 67 | Midtown South | 8.700000 |
| 69 | Murray Hill | 8.700000 |
| 74 | North Side | 8.400000 |
| 94 | Soho | 8.600000 |
| 106 | Tribeca | 8.500000 |
| 108 | Upper West Side | 8.800000 |
| 113 | West Village | 8.850000 |
| 117 | Woodside | 8.400000 |

3. For data analysis we created plots, bar charts:

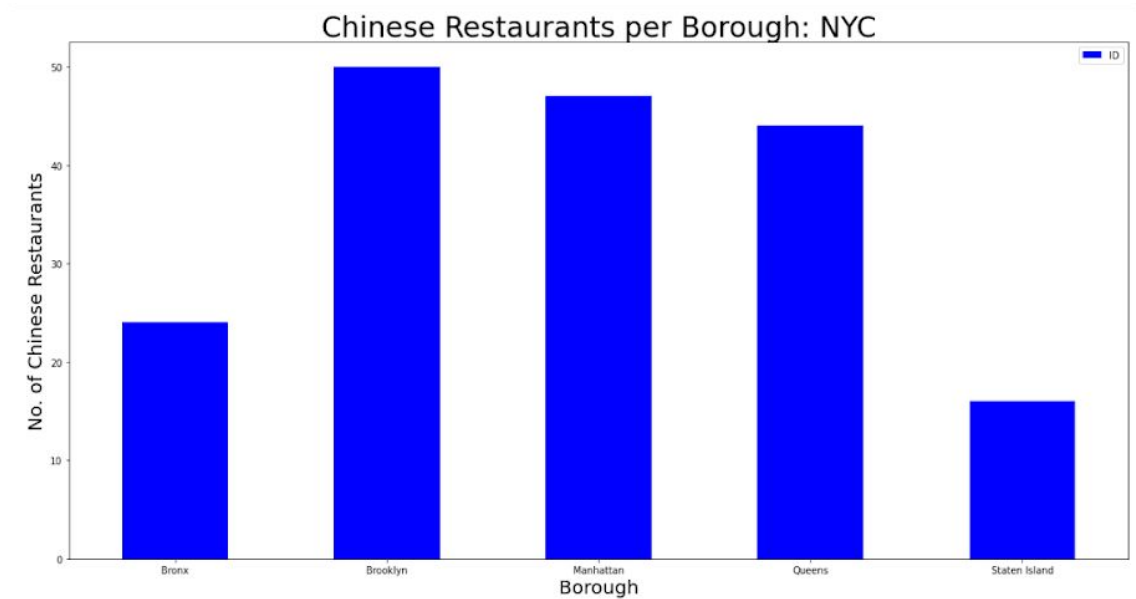


4. For the data visualization, the map was created using python folium library:

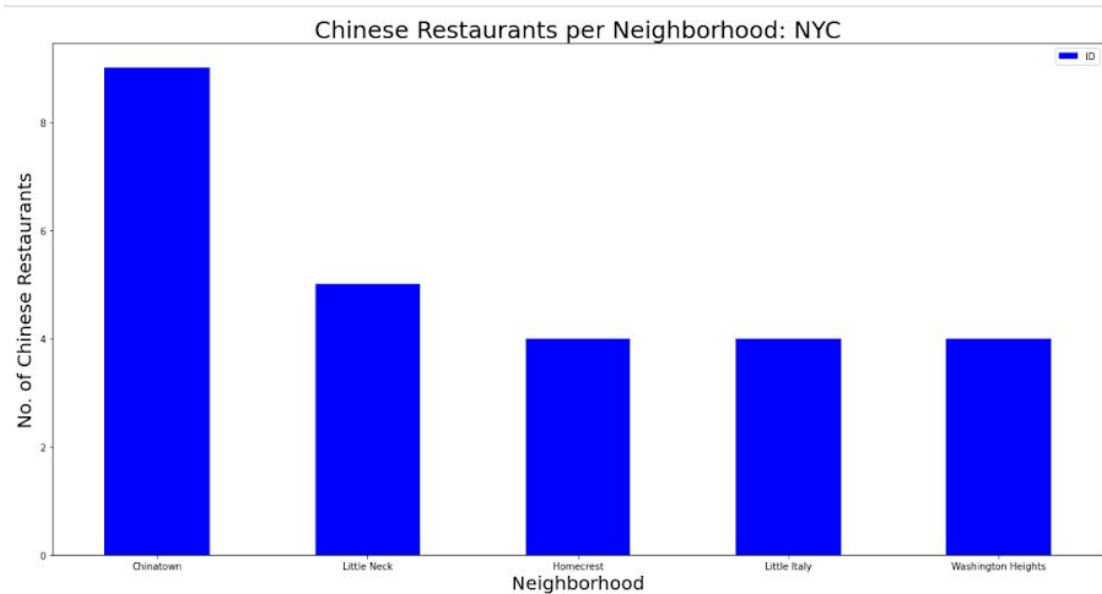


Results

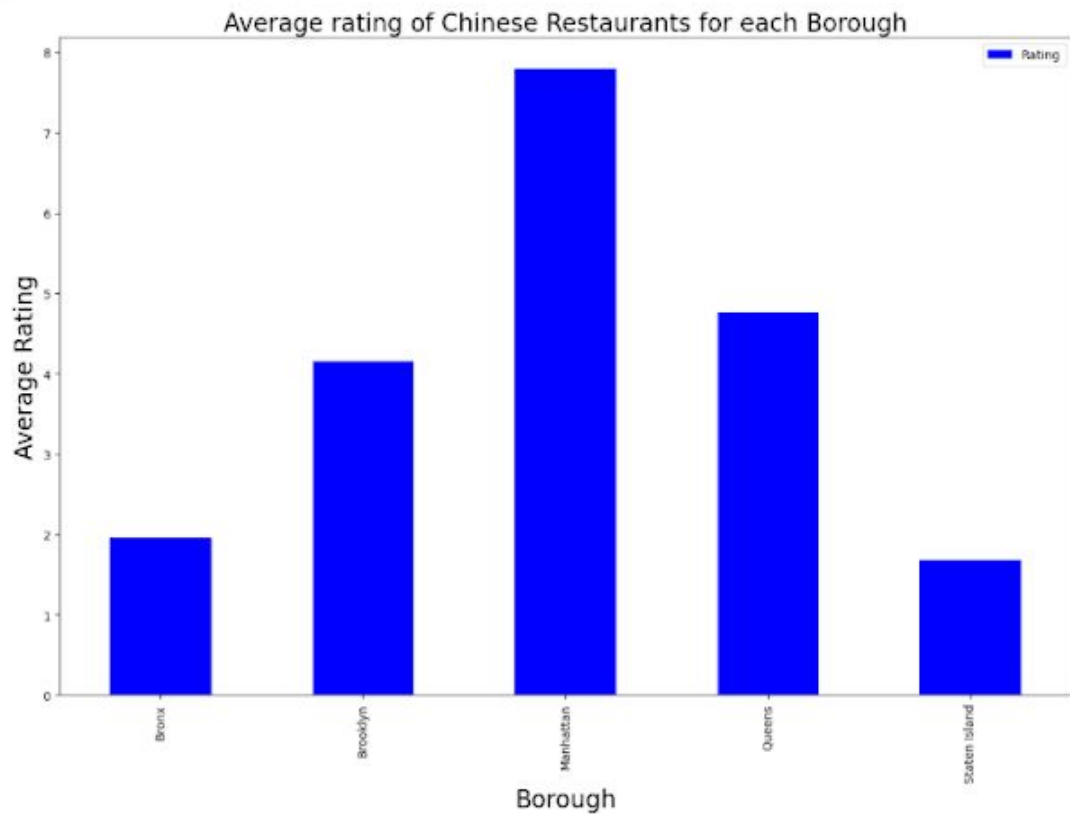
1. Most Chinese restaurants are located in Brooklyn, second in Manhattan, third - Queens.



2. Not surprisingly, Chinatown is the neighborhood where most Chinese restaurants are located, but also Little Italy is the third popular place among Chinese restaurants.



3. Manhattan has the highest average rating of Chinese restaurants, which is far higher than in other boroughs.



4. All the restaurants with rating higher than 8.2:

| | Neighborhood | Average Rating |
|-----|-------------------|----------------|
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Discussion

From the information extracted, we see that there are a lot of Chinese restaurants in Brooklyn, Manhattan, and Queens, therefore, we can choose these places as popular locations for Chinese restaurants, however, there is a huge gap between average ratings, therefore, we can have a shot to establish good Chinese restaurant in Brooklyn or Queens with weaker competitors, also these places are cheaper for rent than Manhattan.

Limitations and Suggestions

On the other hand, our information was not that precise, because some venues could be new businesses that had not any reviews yet. Also, it depends upon what kind of restaurant we want to establish, whether can we compete with high rated restaurants. Further research needed to find out the demand for opening new business.

Conclusion

Big cities give enough data to manipulate and analyze what approach can give more benefits. The pattern shows how everything is connected, therefore we can prevent wrong assumptions, but more analysis needs to be done. This capstone project has improved our understanding of data analysis, visualization, and manipulation methods and gave a better understanding of its application.