



THAI CUISINE RESTAURAN T ANALYSIS

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Introduction: Business Problem

New York is filled with many large and very diverse ethnic groups like Portuguese, Mexican, Vietnamese, etc. These ethnic groups offer their very own unique cuisines for locals and foreigners to enjoy. The purpose of this project is to find the best restaurants that offer these cuisines. We shall narrow our search to find the best Thai cuisine in New York.

Data Acquisition

- New York data that consists of lists of boroughs and neighbourhoods with their respective details.

Data Source: https://cocl.us/new_york_dataset

- The number of Thai restaurants and their venue details in each neighbourhood in New York will be obtained.

Data Source: [Foursquare API](#)

- GeoSpace (Geospatial) data will be used to obtain the New York Borough boundaries and be able to visualize a choropleth map of New York

Data Source: [NY Borough Boundaries](#)

Data Cleaning

- We will begin by extracting the New York data and from there, the boroughs with the associated neighbourhoods will be collected. The coordinates of each neighbourhood will also be displayed.

	Borough	Neighbourhood	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

- Next, we will use the FourSquare API to obtain the venues of each Thai restaurant in New York Venue details such as ID, Name, Likes, Rating and Tips will also be collected as well.

	Borough	Neighbourhood	ID	Name
0	Bronx	Riverdale	4b94a4a2f964a520787f34e3	Nam Thai
1	Bronx	Kingsbridge	4b94a4a2f964a520787f34e3	Nam Thai
2	Manhattan	Marble Hill	4a739e29f964a520f5dc1fe3	Siam Square
3	Bronx	Country Club	4b4c90d3f964a52046b626e3	Honey's Thai Pavilion
4	Bronx	Parkchester	5585c948498e0bd8a8a706f1	Thai Cuisine

Thai Restaurant Venues

	Borough	Neighbourhood	ID	Name	Likes	Rating	Tips
0	Bronx	Riverdale	4b94a4a2f964a520787f34e3	Nam Thai	3	7.2	5
1	Bronx	Kingsbridge	4b94a4a2f964a520787f34e3	Nam Thai	3	7.2	5
2	Manhattan	Marble Hill	4a739e29f964a520f5dc1fe3	Siam Square	15	7.0	13
3	Bronx	Country Club	4b4c90d3f964a52046b626e3	Honey's Thai Pavilion	19	7.2	28
4	Bronx	Parkchester	5585c948498e0bd8a8a706f1	Thai Cuisine	17	7.5	1

Thai Restaurant Venue Details

- The geospatial data that will be obtained online and saved as a text file will be used to draw up the boundaries of each borough which will later be used to find the average ratings of Thai restaurants for each borough. Those results will be displayed in the Results and Discussion section.
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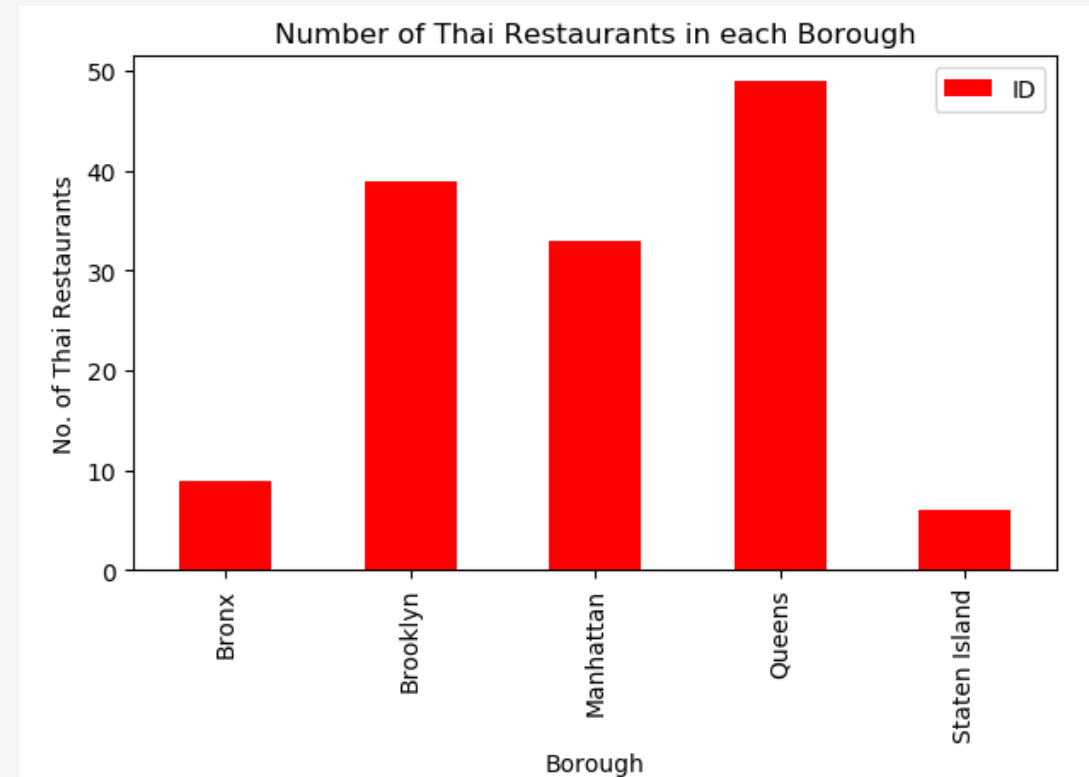
Exploratory Data Analysis

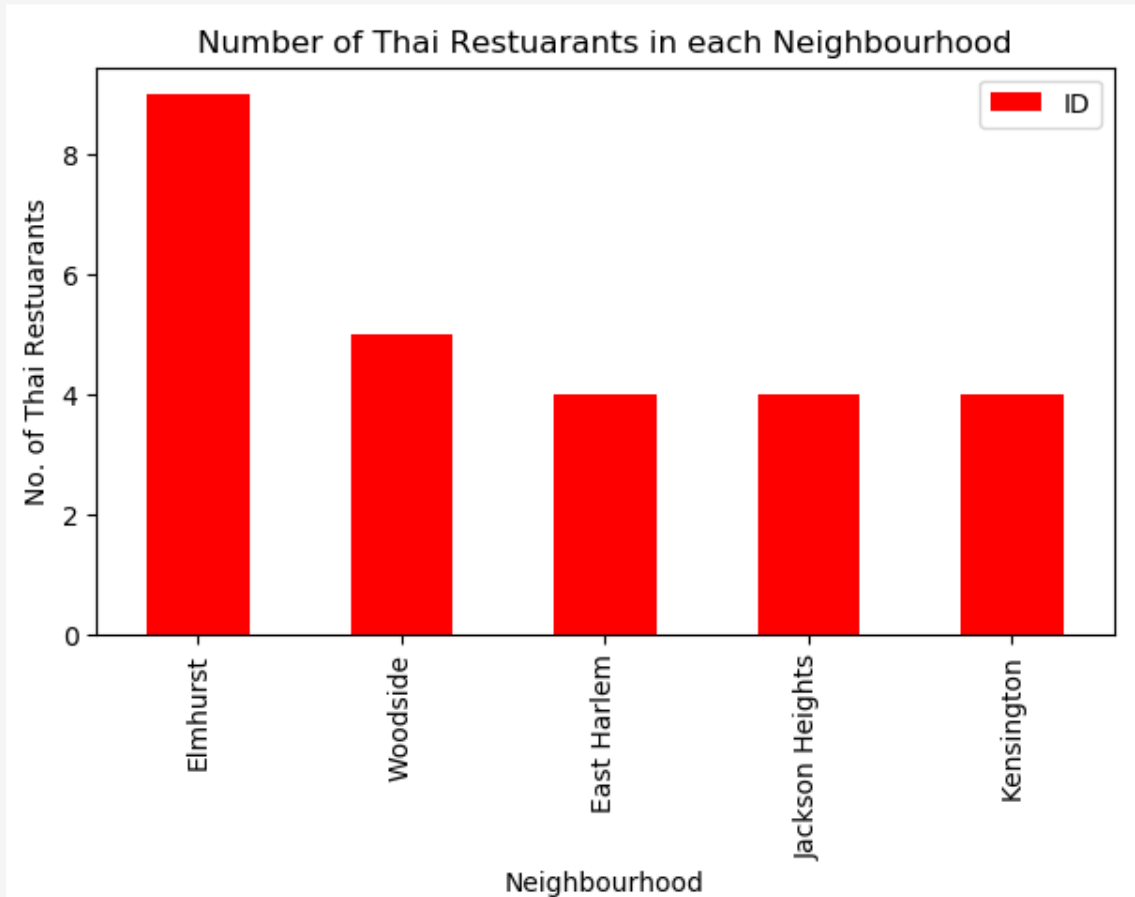
- There is a total of 136 restaurants in New York.
- The borough with the most Thai restaurants is Queens with a total of 67 restaurants.

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# Displaying the shape of the above dataset
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```
Thai_Cuisine_df.shape
```

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(136, 4)
```





- The neighbourhood with the most Thai restaurants is Elmhurst with a total of 9 restaurants.

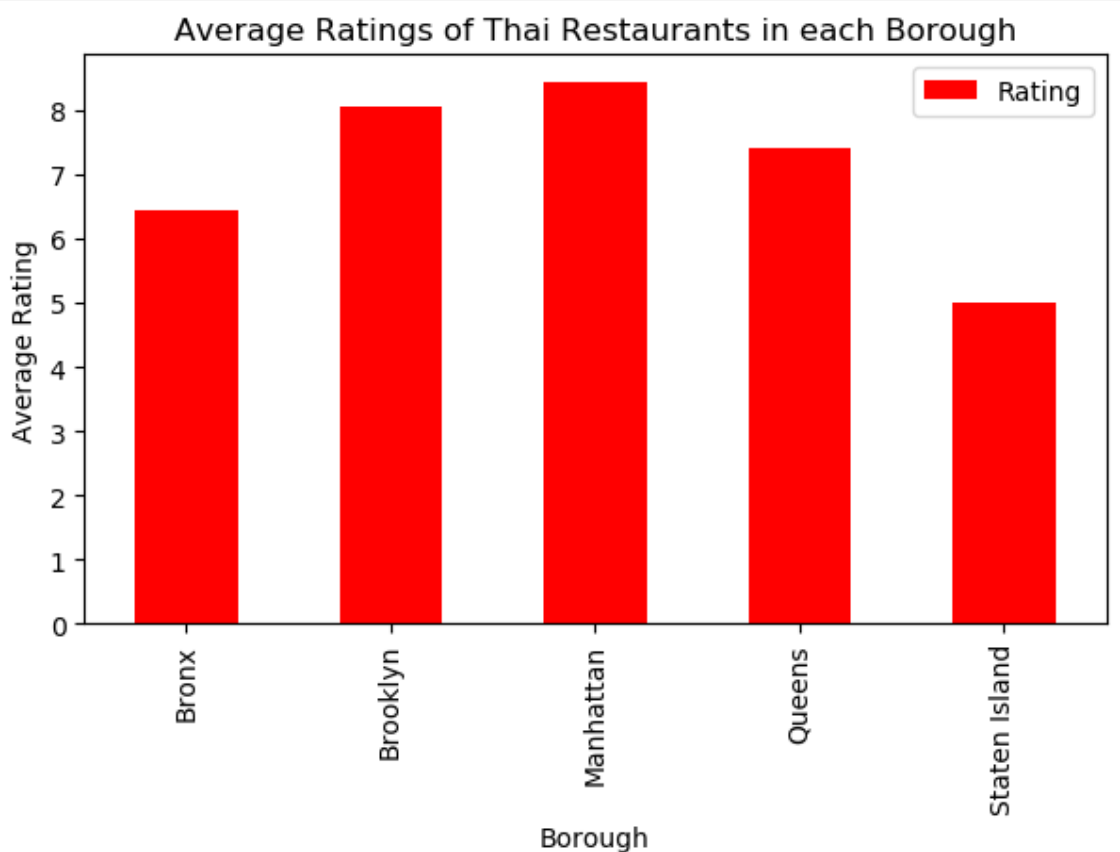

```
Borough           Manhattan
Neighbourhood      Little Italy
ID                516863b1011ca6684e37a88f
Name              Uncle Boons
Likes             1015
Rating            9.1
Tips              328
Name: 62, dtype: object
```

```
Borough           Manhattan
Neighbourhood      Chinatown
ID                5cc4e9d0c876c8002c3010cb
Name              Wayla
Likes             126
Rating            9.2
Tips              26
Name: 46, dtype: object
```

```
Borough           Queens
Neighbourhood      Woodside
ID                3fd66200f964a5204ef11ee3
Name              SriPraPhai
Likes             766
Rating            8.9
Tips              357
Name: 71, dtype: object
```

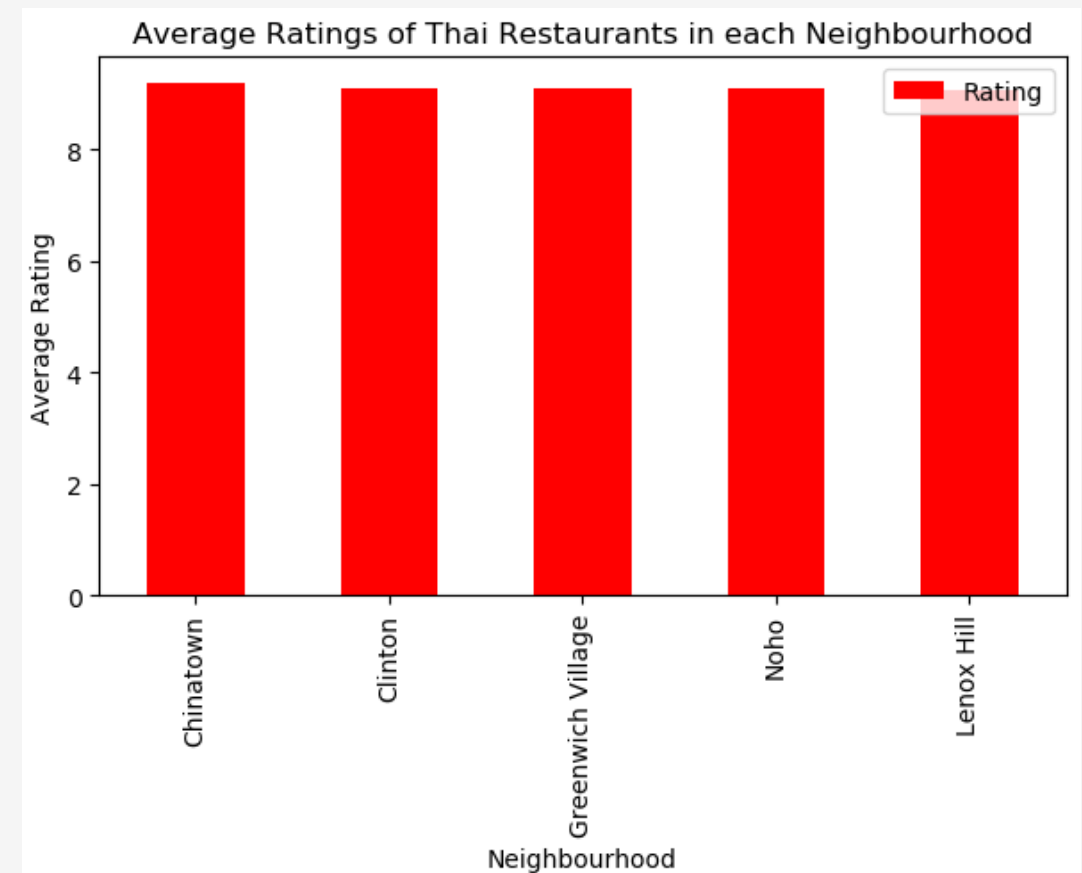
- The restaurant with the most likes is Uncle Boons with 1015 likes in total. The restaurant is situated in a neighbourhood called Little Italy in Manhattan.
- The restaurant with the highest rating of 9.2 is Wayla and the restaurant is situated in a neighbourhood called Chinatown in Manhattan.
- The restaurant with the most tips is SriPraPhai with a tip of 357 tips in total. The restaurant is situated in a neighbourhood called Woodside in Queens.

- Manhattan has most of the highly rated Thai restaurants than the other boroughs with an average rating of 8.44 followed by Brooklyn with an average rating of 8.07.



	Borough	Average Rating
2	Manhattan	8.442424
1	Brooklyn	8.066667
3	Queens	7.410204
0	Bronx	6.444444
4	Staten Island	5.000000

- Chinatown has most of the highly rated Thai Restaurants than the other neighbourhoods in New York with an average rating of 9.20 followed by Noho, Greenwich Village and Clinton which all have the same average rating of 9.10.



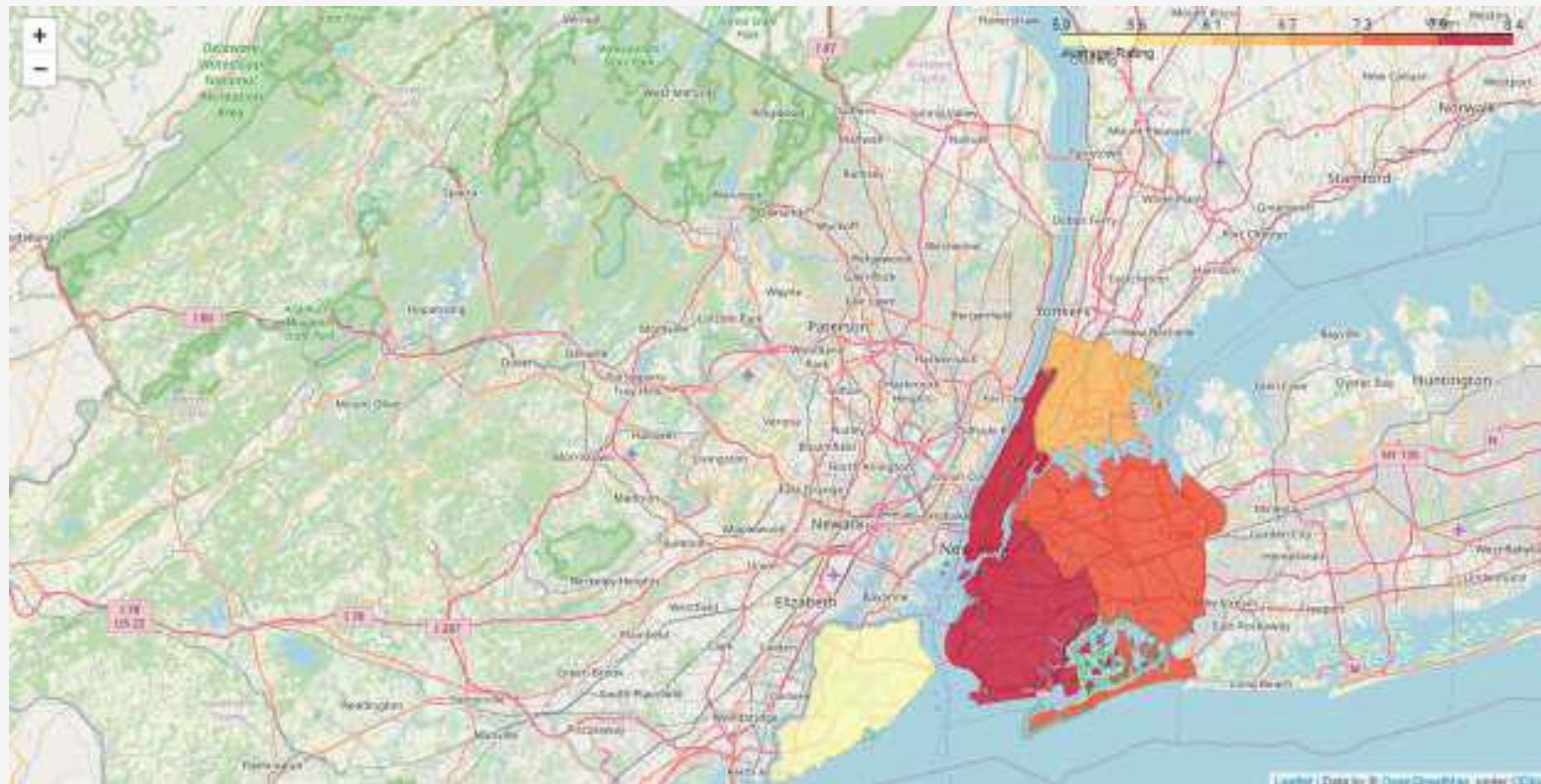
	Neighbourhood	Average Rating
10	Chinatown	9.20
51	Noho	9.10
34	Greenwich Village	9.10
11	Clinton	9.10
44	Lenox Hill	9.05



- Chinatown, Manhattan (9.20)
- Noho, Manhattan (9.10)
- Greenwich Village, Manhattan (9.10)
- Clinton, Manhattan (9.10)
- Lenox Hill, Manhattan (9.05)
- Boerum Hill, Brooklyn (9.00)
- Downtown, Brooklyn (9.00)
- Upper East Side (9.00)



- Rockaway Beach, Queens (0.0)
- Utopia, Queens (0.0)
- Tompkinsville, Staten Island (0.0)
- Kew Gardens Hills (0.0)
- St. George, Staten Island (0.0)



- Manhattan (Range of average rating: 7.9 – 8.4)
- Brooklyn (Range of average rating: 7.9 – 8.4)
- Queens (Range of average rating: 7.3 – 7.9)
- Bronx (Range of average rating: 6.1 – 6.7)
- Staten Island (Range of average rating: 5.0 – 5.6)

Discussion

The aim of this project is to help stakeholders find areas with the best Thai restaurants for dining purposes. For example, stakeholders such as tourists will be interested in the results of this project. The results indicate that Manhattan and Brooklyn are a hotspot for highly rated Thai restaurants and boroughs such as Staten Island and Bronx should be avoided as they have lowly rated Thai restaurants. Entrepreneurs who are interested in opening their own Thai restaurants will be looking into areas such as Staten Island who have low ratings as the barrier of entry into the Thai restaurant market will be low, therefore making it a great opportunity for business.

Conclusion

This project helps stakeholders get a better understanding of the restaurant market, especially restaurants that offer Thai cuisines in New York. Not only does it give them a better understanding of the market but also the demographics of all the Thai restaurants across New York. This knowledge will help them find the best Thai restaurant where they will be able to dine and enjoy the best Thai food New York has to offer. The results of this project will also aid stakeholders such as entrepreneurs who are interested in starting their own chain of Thai restaurants in New York.
