

THE BATTLE OF NEIGHBOURHOODS

Applied Data Science Capstone Project

IBM Data Science Professional Certification

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THE BATTLE OF NEIGHBOURHOODS

FINDING THE BEST PLACE IN NYC FOR INDIAN RESTAURANTS



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. 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. 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 visualize all major parts of New York City that has great Indian restaurants

ANALYTIC APPROACH

Can we determine the best neighbours in New York City for Indian Restaurants?

- What is the best location in New York City for Indian Cuisine?
- Which areas have a potential Indian Restaurant Market?
- Which are some of the best neighbourhoods for Indian cuisine?
- Which is the best place to stay if you prefer Indian Cuisine?

DATA REQUIREMENT

NYC data that contains list Boroughs,
Neighbourhoods along with their Lat and Long

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

Indian restaurants in each neighbourhood of NYC

Data source: Foursquare API

GeoSpace Data:

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

DATA COLLECTION AND METHODOLOGY

1. Collect the New York City data from https://cocl.us/new_york_dataset
2. Using FourSquare API we will find all venues for each neighbourhood.
3. Filter out all venues that are Indian Restaurants.
4. Find rating, tips and like count for each Indian Restaurants using FourSquare API.
5. Using rating for each restaurant, we will sort that data.
6. Visualize the Ranking of neighbourhoods using folium library(python)

DATA UNDERSTANDING AND PREPARATION

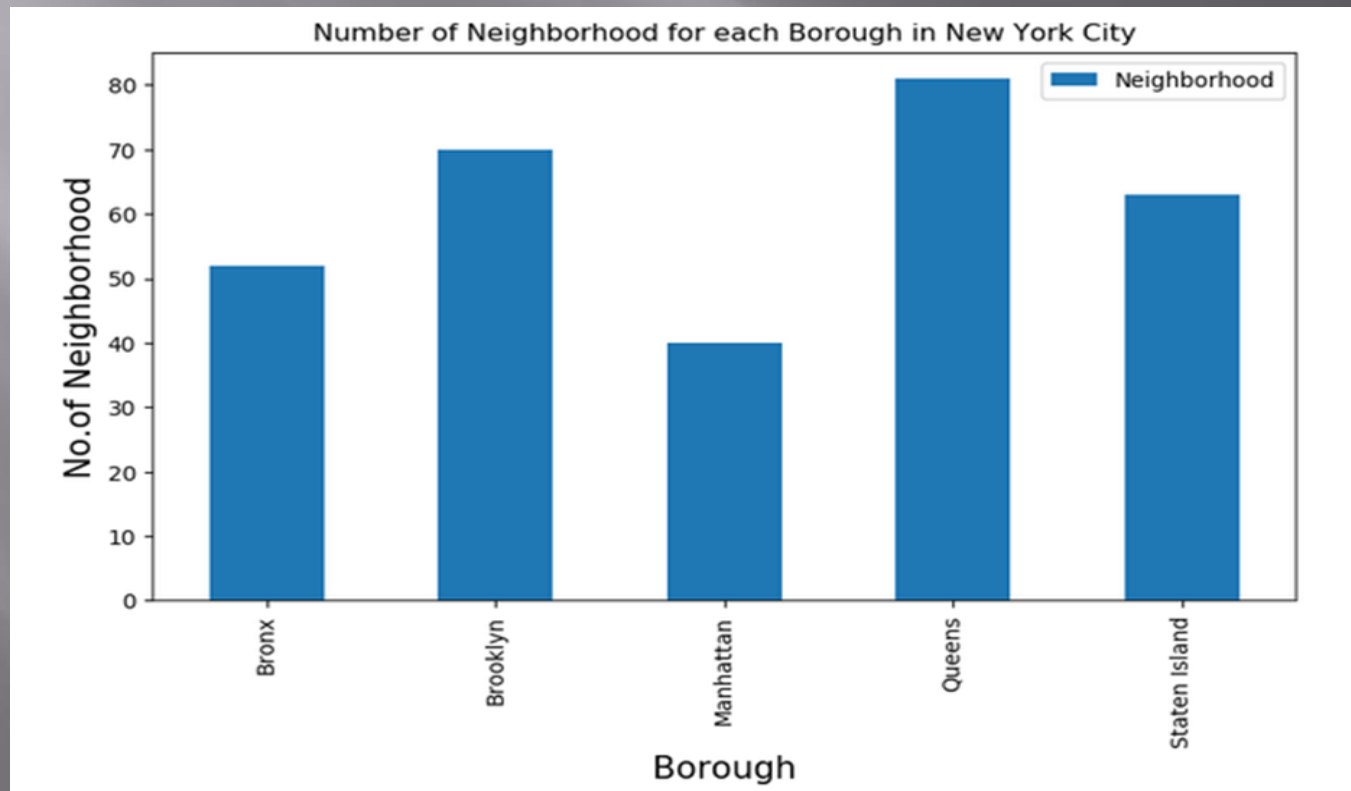
Data was collected and transformed into data frames

	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

```
def geo_location(address):  
    # get geo location of address  
    geolocator = Nominatim(user_agent="ny_explorer")  
    location = geolocator.geocode(address)  
    latitude = location.latitude  
    longitude = location.longitude  
    return latitude, longitude
```

DATA UNDERSTANDING AND PREPARATION(2)

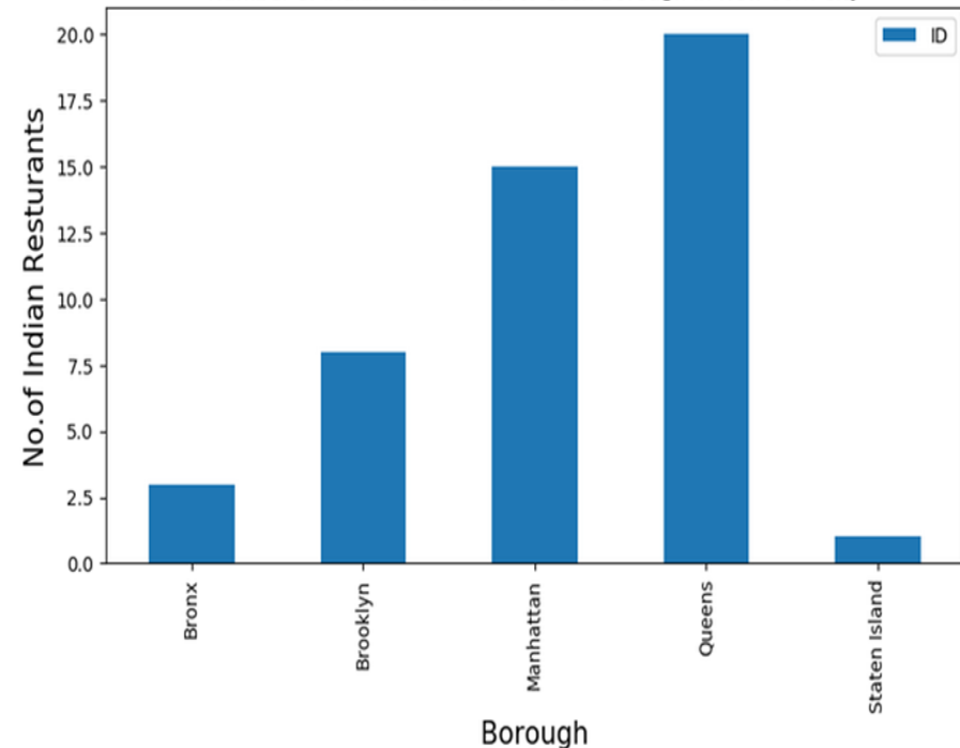
Data visualized in bar charts for different Boroughs



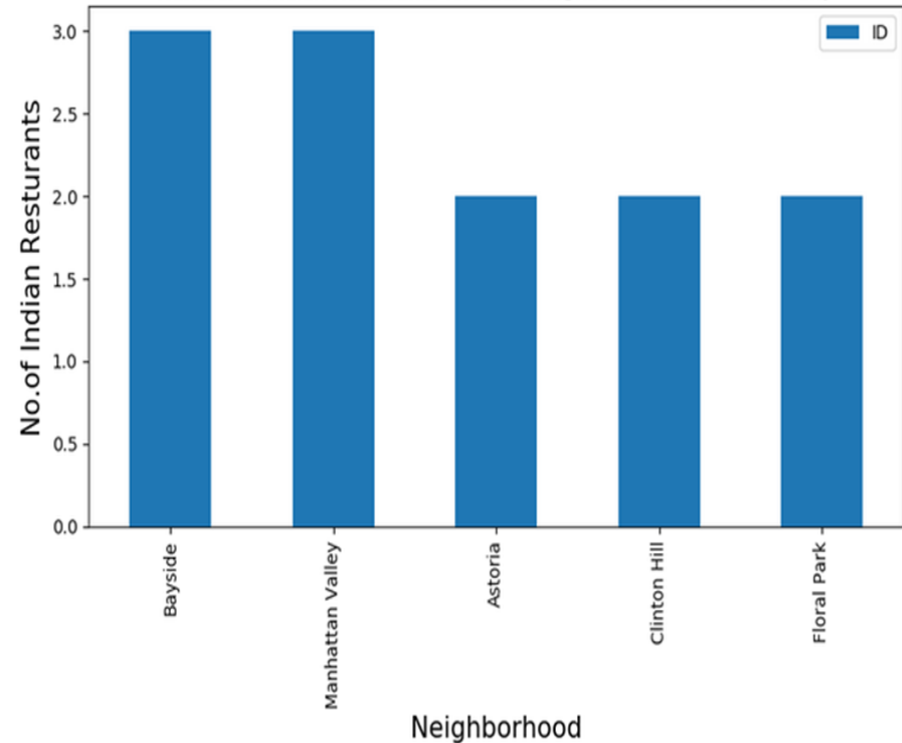
MODELLING AND EVALUATION

No of Indian Restaurants in different Boroughs and Neighbourhoods

Number of Indian Restaurants for each Borough in New York City



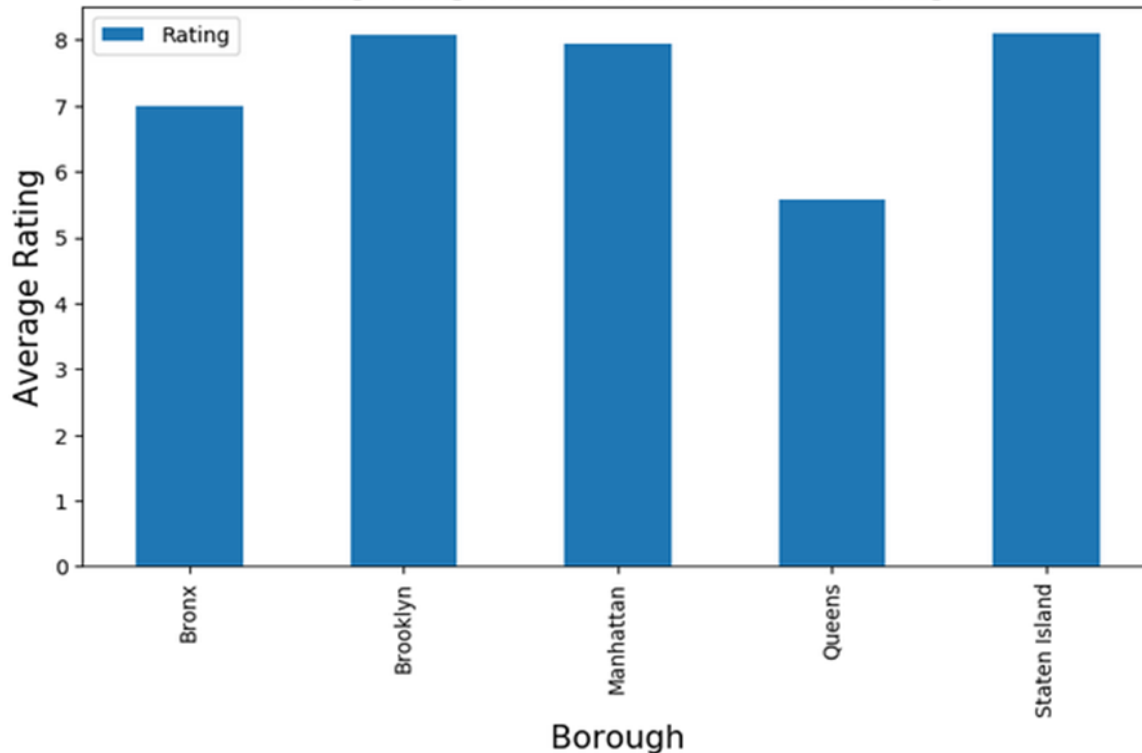
Number of Indian Restaurants for each Neighborhood in New York City



MODELLING AND EVALUATION(2)

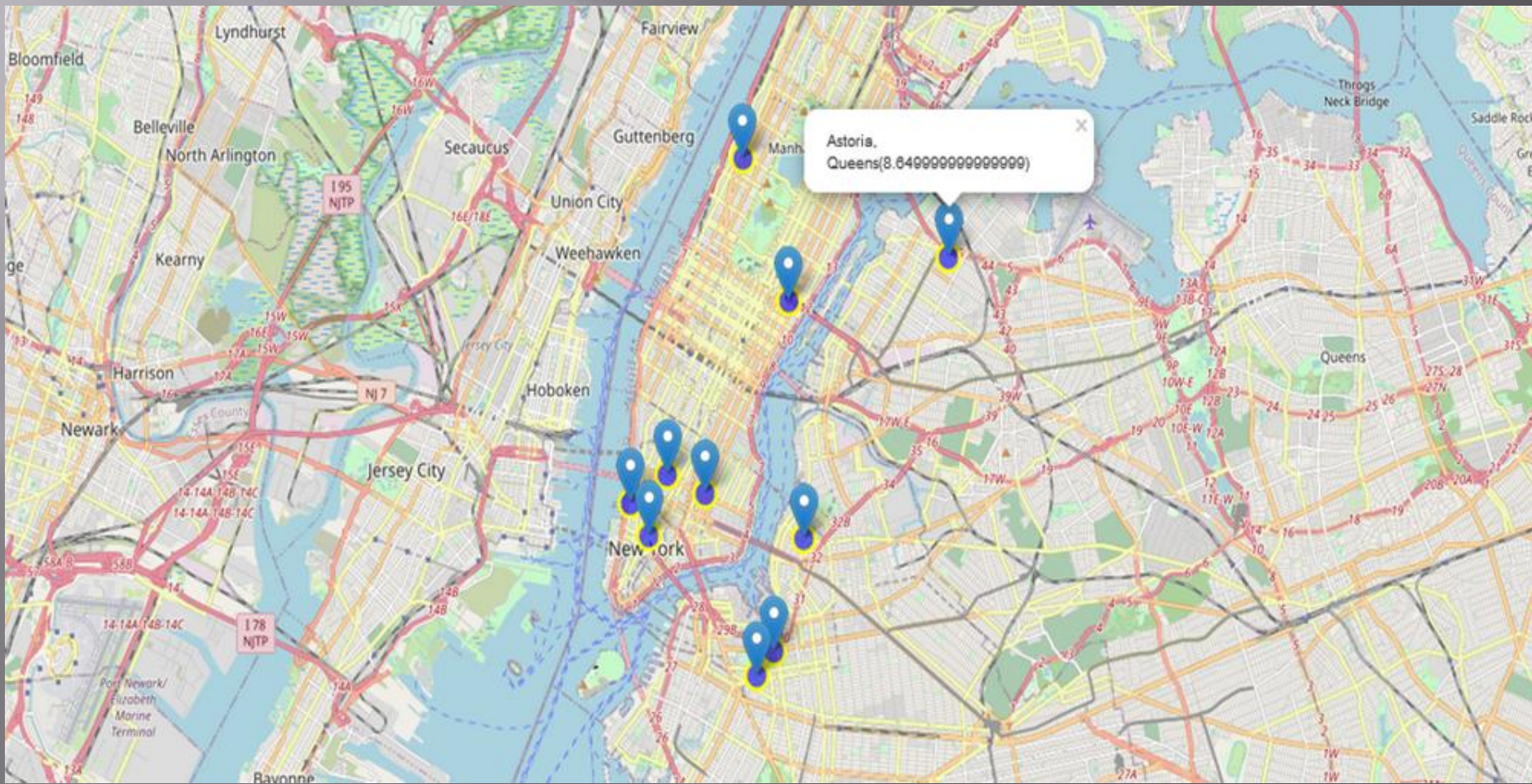
Average Rating of Neighbourhoods and Indian Restaurants in Boroughs

Average rating of Indian Resturants for each Borough



	Neighborhood	Average Rating
30	Tribeca	9.10
21	Noho	8.80
8	Fort Greene	8.70
0	Astoria	8.65
22	North Side	8.50
11	Greenwich Village	8.40
32	Upper West Side	8.40
29	Sutton Place	8.40
4	Civic Center	8.20
5	Clinton Hill	8.10

Highly rated neighbourhoods on map of NYC



RESULTS AND DISCUSSION

The analysis has been carried out to list and visualize all major parts of New York City that has great Indian restaurants. The restaurants with various attributes like maximum likes, rating and tips is also provided. The accuracy of data is completely depends on the data provided by FourSquare.

CONCLUSION

- Queens has the largest number of Indian Restaurants.
- The Bayside in Queens has the highest number of Indian Restaurants i.e 3.
- Astoria (Queens), Civic Centre (Manhattan), Clinton Hill (Brooklyn) are some of the best neighbourhoods for Indian cuisine.
- Queens and Manhattan are the best places to stay if you prefer Indian Cuisine.
- Astoria (Queens) has the highest rating that is 8.65
- Though Manhattan ranks 2nd and Brooklyn ranks 3rd in ranking ; the difference in their average rating is minimal i.e. Manhattan is with 8.20 and Brooklyn is with 8.10

THANK YOU