

FINAL REPORT

Capstone Project - The Battle of Neighbourhoods

Problem statement:

For an Indian national who has either secured a job at New York or an Indian student who has just enrolled into a university situated at New York city, it becomes quite a task to identify the locations within New York which can offer him/her options from Indian cuisine. Indians are usually more inclined and attached to their local cuisines such as curries and indian breads/rice, so it becomes all the more necessary for them to have a data supported idea as to where they can find some quality Indian food. This information can help them in taking a decision as to where to stay or dine out at.

Some facts:

1. New York(N.Y) is the most diverse city in terms of languages spoken, ethnicity and races
2. Around 8% of New York's population is Indian(1.7%) and Chinese(6%)
3. English is not the primary language in areas in outer borough such as Corona and Sunset Park

Questions we need answers for:

1. Parts of N.Y with max Indian restaurants
2. Potential market for Indian restaurants
3. Areas with very less Indian restaurants
4. Best places to stay for people preferring Indian cuisines

Data Section:

For this project we need the following data:

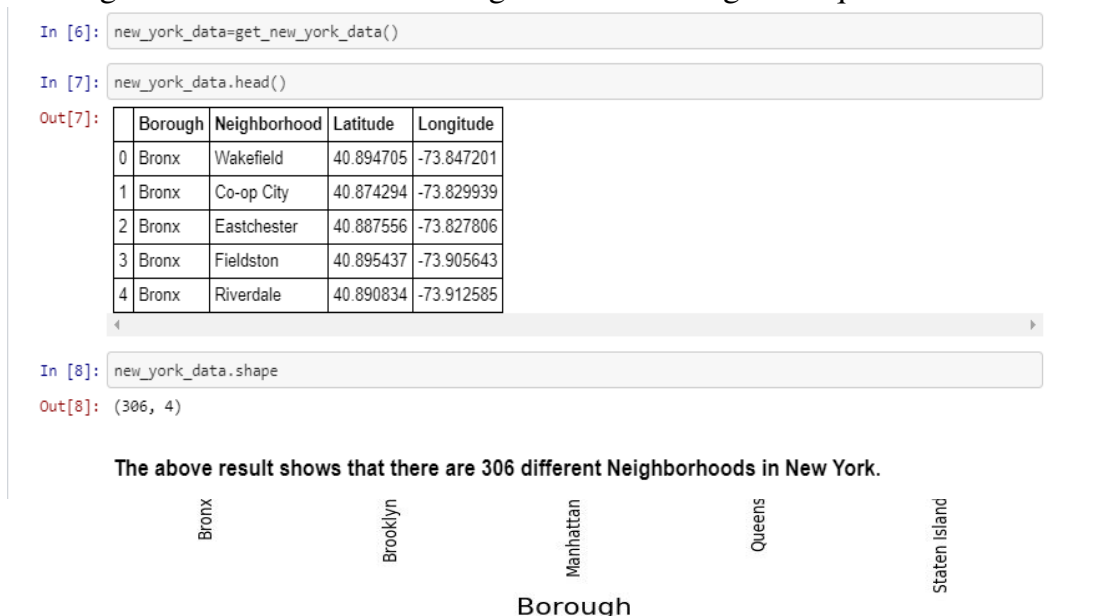
- New York City data that contains list Boroughs, Neighbourhoods along with their latitude and longitude.
 - Data source : https://cocl.us/new_york_dataset
 - Description: This data set contains the required information. And we will use this data set to explore various neighbourhoods of New York City
- Indian restaurants in each neighbourhood of New York City.
 - Data source : Foursquare API

- Description: By using this API we will get all the venues in each neighbourhood. We can filter these venues to get only Indian restaurants.
- GeoSpace data
 - Data source : <https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm>
 - Description: By using this geo space data we will get the New York Borough boundaries that will help us visualize choropleth map.

Methodology:

1. Collecting the New York city data from the following link
"https://cocl.us/new_york_dataset"
2. Finding all the venues for each neighbourhood using Foursquare API

3.



Filtering out all venues with Indian restaurant for further analysis.

4. Next using Foursquare API, we will find the Ratings, Tips, and Number of Likes for all the Indian Restaurants.

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Bronx	Woodlawn	4c0448d9310fc9b6bf1dc761	Curry Spot	5	7.6	10
1	Bronx	Parkchester	4c194631838020a13e78e561	Melanies Roti Bar And Grill	3	5.8	2
2	Bronx	Spuyten Duyvil	4c04544df423a593ac83d116	Cumin Indian Cuisine	13	6.1	9
3	Bronx	Concourse	551b7f75498e86c00a0ed2e1	Hungry Bird	8	6.9	3
4	Bronx	Unionport	4c194631838020a13e78e561	Melanies Roti Bar And Grill	3	5.8	2

5. We will then sort Neighbourhoods and Borough the data keeping Ratings as the constraint.

	Neighborhood	Average Rating
12	Civic Center	9.100000
69	Tribeca	9.100000
0	Astoria	9.000000
5	Blissville	9.000000
75	West Village	8.800000
44	Midtown South	8.800000
43	Midtown	8.800000
29	Gramercy	8.733333
25	Fort Greene	8.700000
11	Chelsea	8.700000

	Borough	Average Rating
2	Manhattan	8.210000
1	Brooklyn	7.700000
3	Queens	6.552113
0	Bronx	5.585714
4	Staten Island	3.533333

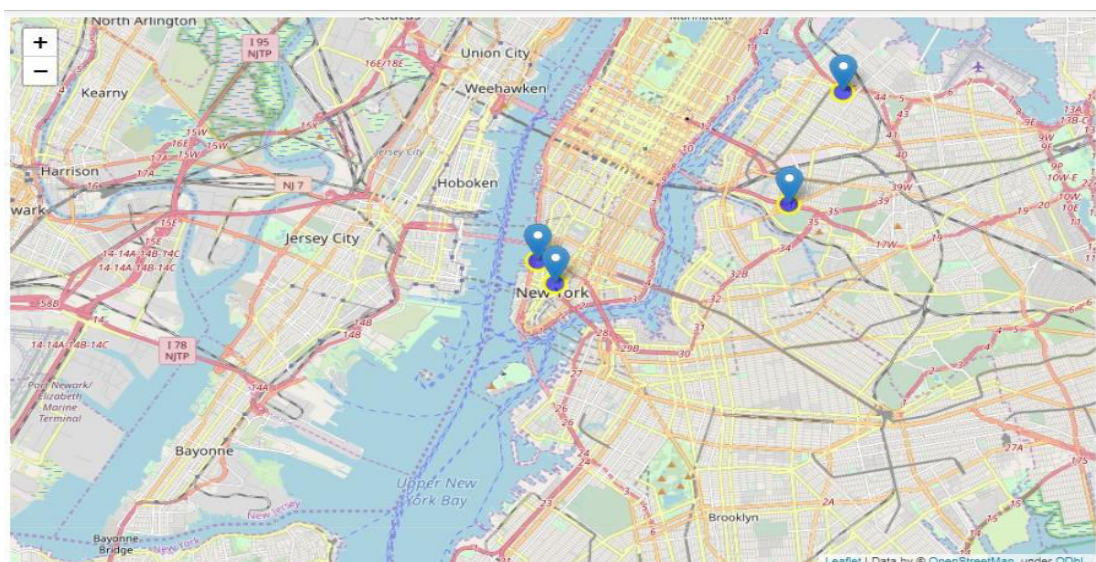
6. Next we consider all the neighborhoods with average rating greater or equal 9.0 to visualize on map.

	Neighborhood	Average Rating
0	Astoria	9.0
5	Blissville	9.0
12	Civic Center	9.1
69	Tribeca	9.1

7. We will join this dataset to original New York data to get longitude and latitude.

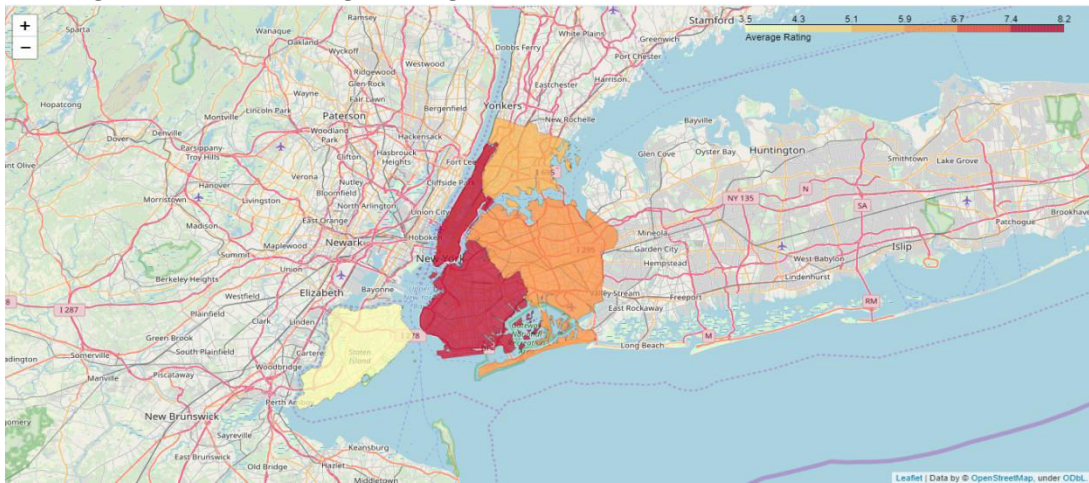
	Borough	Neighborhood	Latitude	Longitude	Average Rating
0	Queens	Astoria	40.768509	-73.915654	9.0
1	Queens	Blissville	40.737251	-73.932442	9.0
2	Manhattan	Civic Center	40.715229	-74.005415	9.1
3	Manhattan	Tribeca	40.721522	-74.010683	9.1

8. Finally, we will visualize the Neighborhoods and Borough based on average Rating using python's Folium library.



Neighborhoods based on average rating:

Borough based on average rating:



Conclusions:

So now we can answer the questions asked above in the Questions section:

Findings:

1. The following location in New York City has great Indian restaurants.

	Borough	Neighborhood	Latitude	Longitude	Average Rating
0	Queens	Astoria	40.768509	-73.915654	9.0
1	Queens	Blissville	40.737251	-73.932442	9.0
2	Manhattan	Civic Center	40.715229	-74.005415	9.1
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2. Astoria (Queens), Blissville (Queens), Civic Center (Manhattan) are some of the best neighbourhoods for Indian cuisine.
3. Manhattan have potential Indian Restaurant Market.
4. Staten Island ranks last in average rating of Indian Restaurants.
5. Manhattan is the best place to stay if you prefer Indian Cuisine.