COURSERA CAPSTONE PROJECT

THE BATTLE OF NEIGHBOURHOODS

FINAL REPORT

Identifying Indian Restaurants in New York City

Introduction / Business Problem:

New York City has a large and ethnically diversified population. Being the largest city in the United States, it has a long history of international immigration. In 2014, New York City was home to 8.5 million people which is 40% of the New York State which houses 23.6 million people. New York is by far the leading metropolitan area for legal immigrants into United States.

New York City has also 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. Many Indians have migrated and settled in the United States many of whom in New York due to professional and personal reasons. Due to huge demand of spicy Indian food this Capstone project aims at suggesting various Indian Restaurants with good reviews and ratings in New York City.

Through this Capstone Project one can answer to following:

[1] Listing all neighbourhoods in New York City that has good Indian Restaurants.

[2] Best Indian Cuisine Restaurant in New York City.

[3] Potential Indian Restaurant market.

[4] Areas lacking Indian Restaurants.

[5] Places to stay if one prefers Indian Cuisine.

Data Section:

For this Capstone Project, following data were used:

▪ Data Source:- https://cocl.us/new_york_dataset
Description: - New York City data that contains the list of Boroughs, Neighbourhoods and their respective longitudes and latitudes.

▪ Data Source: - https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm
Description: - Contains geospatial data of New York Boroughs used in Choropleth maps.

▪ Data Source: - Foursquare
Description: - Using Foursquare API to get all venues in all neighbourhoods and then filtering them to obtain Indian Restaurants.

Methodology:

1. We begin by collecting the New York city data from the Cognitive Classes database. Link: - https://cocl.us/new_york_dataset
2. We find all the venues for each neighbourhood using Foursquare API.

We will call the above funtion to get the New York City data.

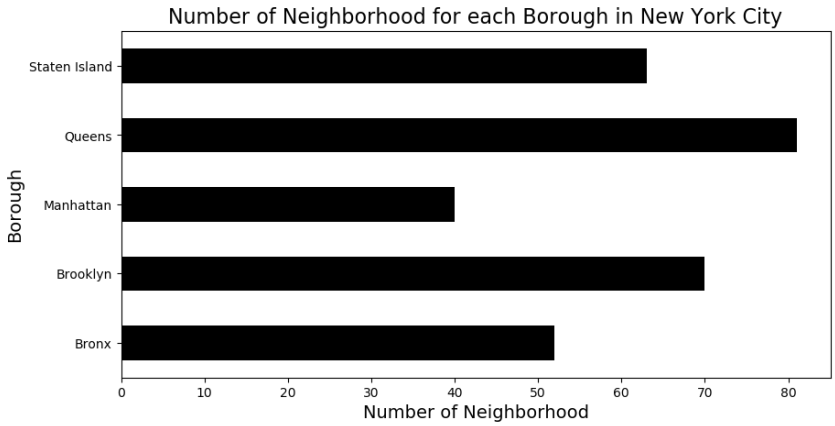
```
In [11]:
1 new_york_data = get_new_york_data()
2 print(new_york_data.shape)
3 new_york_data.head()
```

```
(306, 4)
```

Out[11]:

	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

The above result shows that there are 306 different Neighborhoods in New York.



3. Then filter out all venues with Indian Restaurants for further analysis.

4. Using Foursquare API, find Ratings, Tips and Likes for all Indian Restaurants.

```
In [100]:
1 print(indian_rest_stats_ny.shape)
2 indian_rest_stats_ny.head()
```

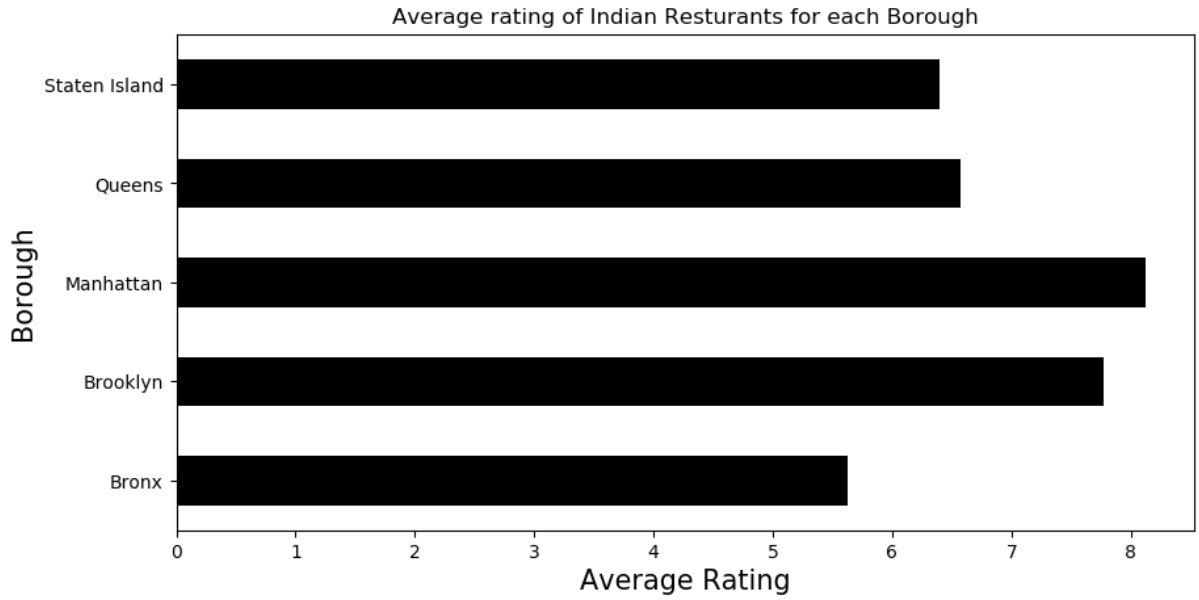
```
(140, 7)
```

Out[100]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Bronx	Woodlawn	4c0448d9310fc9b6bf1dc761	Curry Spot	5	7.8	10
1	Bronx	Parkchester	4c194631838020a13e78e561	Melanies Roti Bar And Grill	3	6.0	2
2	Bronx	Parkchester	0	0	0	0.0	0
3	Bronx	Spuyten Duyvil	4c04544df423a593ac83d116	Cumin Indian Cuisine	13	6.0	9
4	Bronx	Concourse	551b7f75498e86c00a0ed2e1	Hungry Bird	8	6.8	3

5. Then sort the Neighbourhoods and Boroughs on the basis of the Average Ratings of the Indian Restaurants in respective regions.

	Neighborhood	Average Rating
0	Astoria	9.0
5	Blissville	9.0
59	Sunnyside	9.0
24	Fort Greene	8.8
12	Clinton Hill	8.8
68	West Village	8.7
47	Prospect Heights	8.7
48	Prospect Lefferts Gardens	8.7
11	Civic Center	8.6
63	Tribeca	8.6



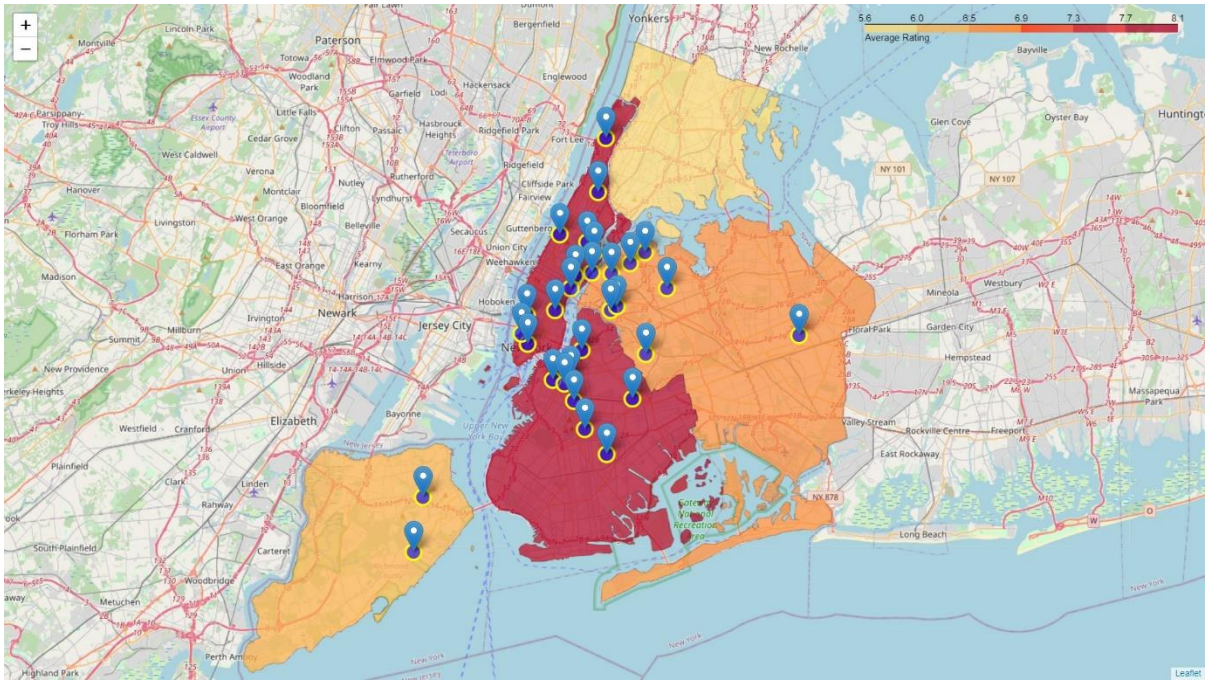
6. Consider all the neighbourhoods with Average Rating greater or equal to 8.0 for visualising on map.

	Neighborhood	Average Rating
0	Astoria	9.0
5	Blissville	9.0
59	Sunnyside	9.0
24	Fort Greene	8.8
12	Clinton Hill	8.8
68	West Village	8.7
47	Prospect Heights	8.7
48	Prospect Lefferts Gardens	8.7
11	Civic Center	8.6
63	Tribeca	8.6

7. Append this data with original New York dataset to obtain latitudes and longitudes of the Neighbourhoods.

	Borough	Neighborhood	Latitude	Longitude	Average Rating
0	Queens	Astoria	40.768509	-73.915654	9.000000
1	Queens	Blissville	40.737251	-73.932442	9.000000
2	Manhattan	Carnegie Hill	40.782683	-73.953256	8.400000
3	Manhattan	Central Harlem	40.815976	-73.943211	8.000000
4	Manhattan	Civic Center	40.715229	-74.005415	8.600000
5	Brooklyn	Clinton Hill	40.693229	-73.967843	8.800000
6	Brooklyn	Downtown	40.690844	-73.983463	8.000000
7	Brooklyn	East Flatbush	40.641718	-73.936103	8.300000
8	Brooklyn	Fort Greene	40.688527	-73.972906	8.800000
9	Manhattan	Gramercy	40.737210	-73.981376	8.333333

8. Visualise the Neighbourhood and Borough based on Average Rating on Map of New York Area.



Result:

1. Here we have listed all the neighbourhoods which have good Indian Restaurants.
2. Seva Indian Cuisine in Astoria, Queens has the Best Customer Rating (9.0/10) in Indian Restaurants.
3. Manhattan and Brooklyn have a great potential to open a Indian Restaurant.
4. Queens, Staten Island and The Bronx lacks a good Indian Restaurants. Opening a new Indian Restaurant in these regions could be profitable.
5. Manhattan and Brooklyn are best places to stay if one prefers Indian Cuisine.

Conclusion:

There is always room for improvement and hence the above solution I have provided can also be improved for best results depending upon the data we have.