

My First Data Science Project

Analysis of Indian Restaurants in New York

Introduction: Business Problem

- In this project will try to find an optimal location for a restaurant. Specifically, this report will be targeted to stakeholders interested in opening an Indian restaurant in New York city.
- Since there are lots of restaurants in New york I will try to detect locations that are not already crowded with restaurants. Also particularly interested in areas with no Indian restaurants in vicinity. We would also prefer locations as close to city center as possible, assuming that first two conditions are met.

Contd

- Questions to answer from datasets: ➤What is best location in New York City for Indian Cuisine? ➤Which areas have potential Indian Restaurant Market? ➤Which all areas lack Indian Restaurants? ➤Which is the best place to stay if I prefer Indian Cuisine?

Data

- Based on definition of the problem, factors that will influence our decision are: number of existing restaurants in the neighborhood (any type of restaurant) number of and distance to Indian restaurants in the neighborhood, if any distance of neighborhood from city center
- We decided to use regularly spaced grid of locations, centered around city center, to define the neighborhoods.
- Following data sources will be needed to extract/generate the required information:
- centers of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using Google Maps API reverse geocoding
- number of restaurants and their type and location in every neighborhood will be obtained using Foursquare API
- coordinate of New York City center can be obtained from the data shared in the course

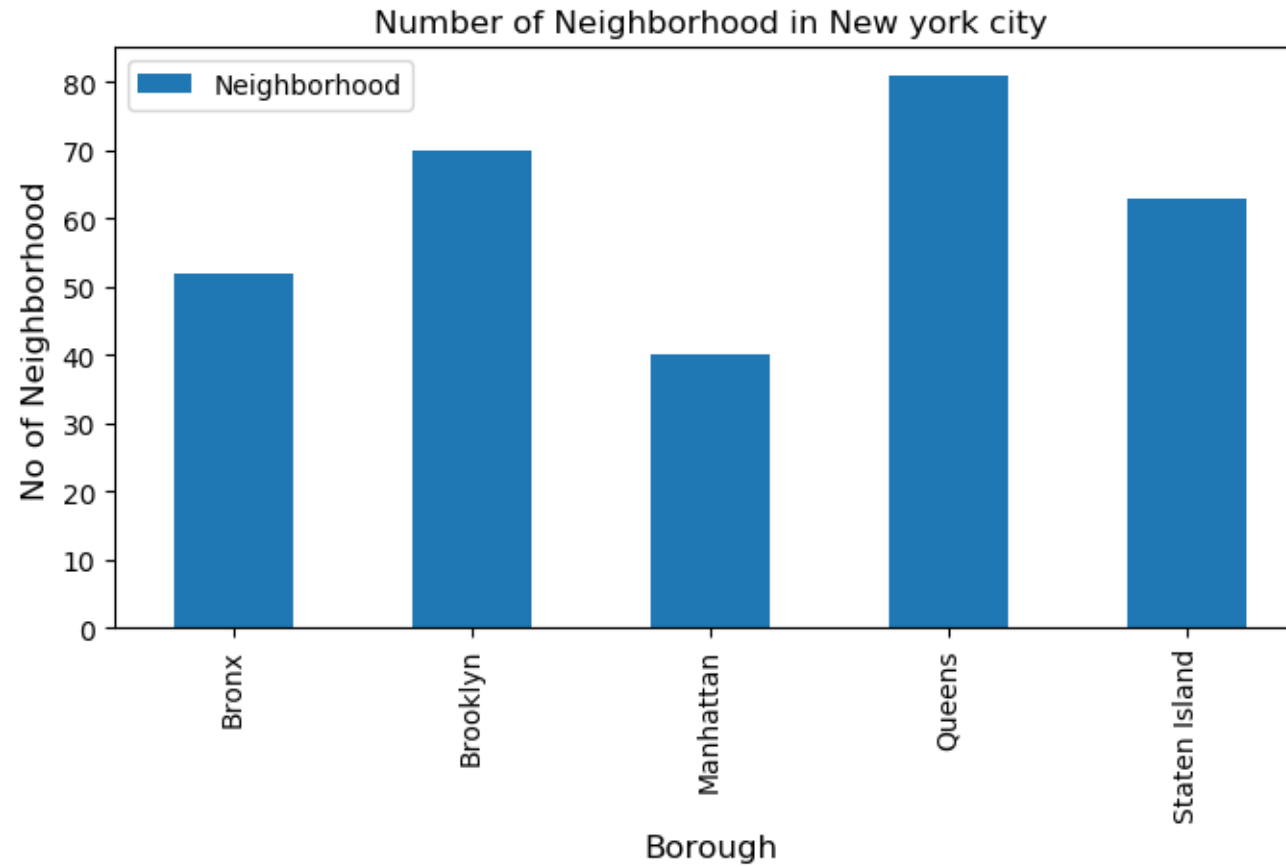
Approach of the Study:

- Collect the New York city data from https://cocl.us/new_york_dataset • Using FourSquare API we will find all venues for each neighborhood. • Filter out all venues that are Indian Restaurants. • Find ratings, tips and like count for each Indian Restaurants using FourSquare API. • Using rating for each restaurant, we will sort that data. • Visualize the Ranking of neighborhoods using folium library using python. (we will get the New York Borough boundaries that will help us visualize choropleth map and take proper decision for the entrepreneurs)

Data Processing:

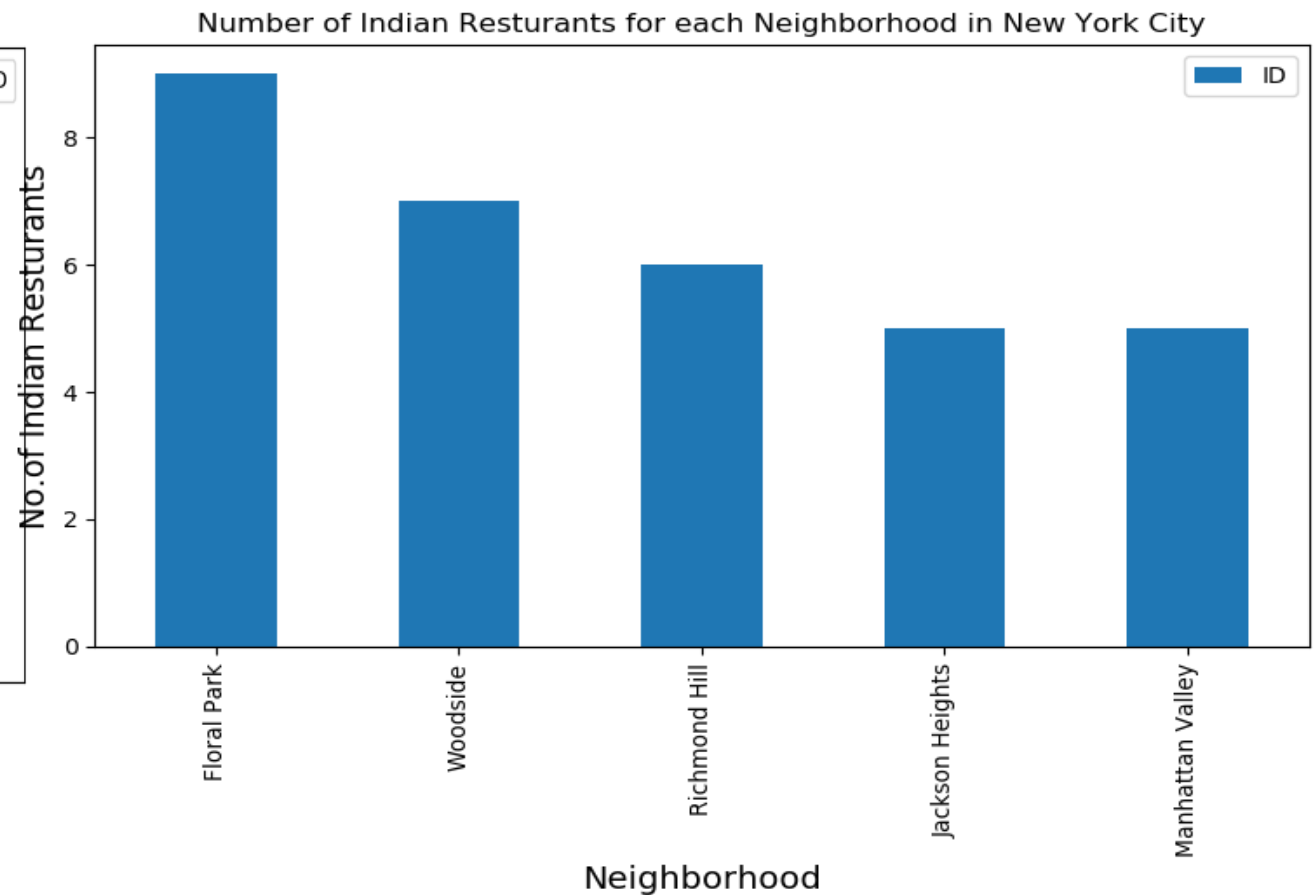
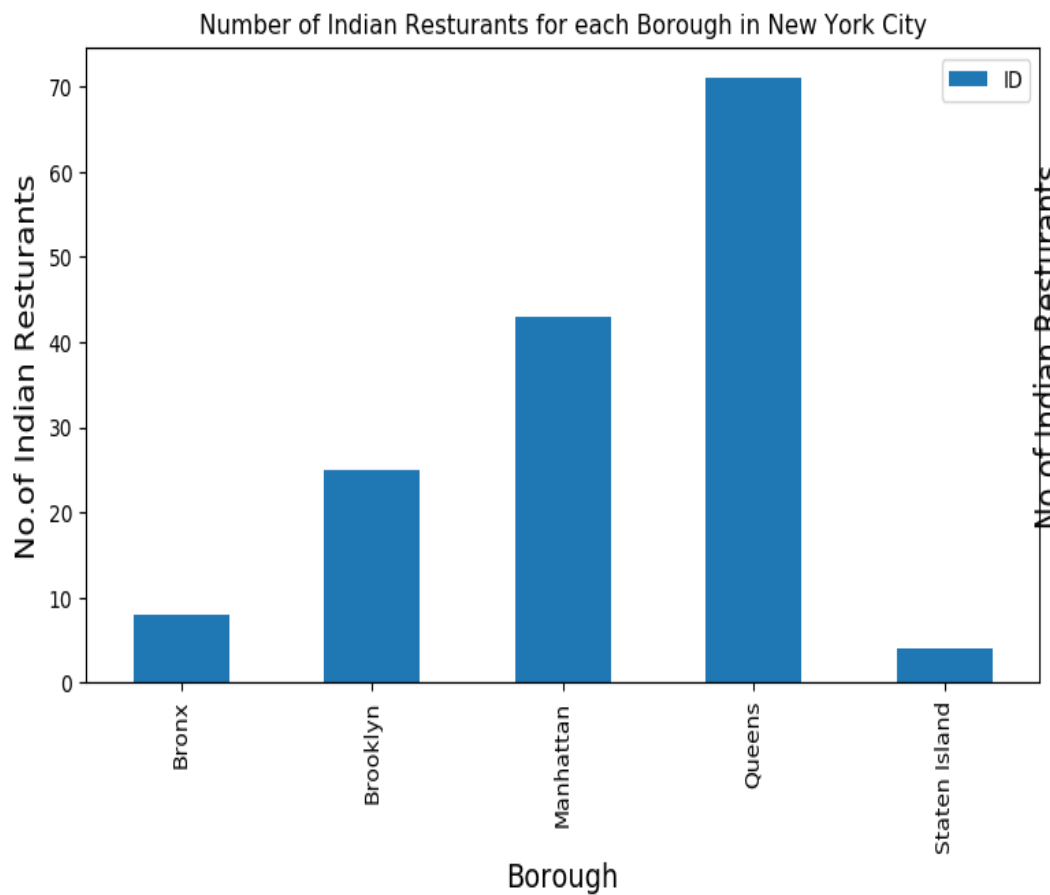
- New York Location data: • New York data set has the location information of New York Location. It has five Boroughs (Bronx, Manhattan, Brooklyn, Queens and Staten Island) along with their 306 Neighbourhoods with the Longitude and Latitude information
- Indian Restaurants in New York: • Using FourSquare API we extracted the Indian restaurant from all the above neighborhoods. (Top 100 venues within a radius of 1000 metres for a given latitude and longitude – with setting radius=1000 and LIMIT=100 in API setting) •
- We found 153 Indian restaurants from the API.
- Ranking of NY Indian Restaurants: • Using the FourSquare API we have extracted the rating related information for all mentioned Indian restaurant information in New York. Rating. The fields we got are Likes, Ratings (of Scale 10) and Tips

Analysis & Results: (1 of 7)



Analysis & Results:

- Indian Restaurants in NY boroughs and Neighborhoods • Queens has the largest number of Indian restaurants • Floral Park has the largest number of Indian restaurants (11)



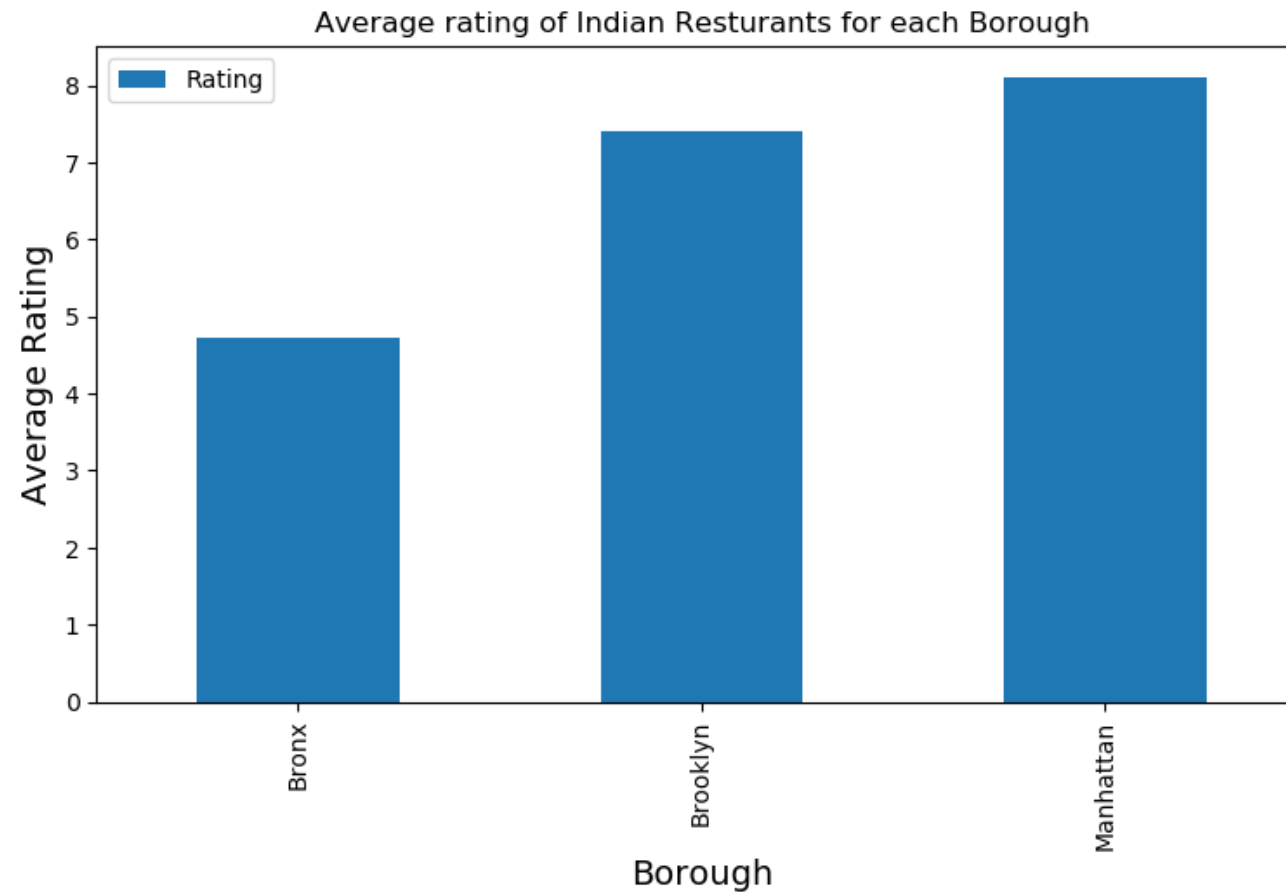
Ranking of NY Indian Restaurant

```
indian_rest_stats_ny.head()
```

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Bronx	Woodlawn	4c0448d9310fc9b6bf1dc761	Curry Spot	5	7.9	11
1	Bronx	Williamsbridge	0	0	0	0.0	0
2	Bronx	Parkchester	4c194631838020a13e78e561	Melanies Roti Bar And Grill	3	6.1	2
3	Bronx	Spuyten Duyvil	4c04544df423a593ac83d116	Cumin Indian Cuisine	13	5.8	9
4	Bronx	Concourse	551b7f75498e86c00a0ed2e1	Hungry Bird	8	7.1	3

- Using the FourSquare API we have extracted the rating related information for all mentioned Indian restaurant information in New York. Rating. The fields we got are Likes, Ratings (of Scale 10) and Tips

Average ratings of Indian Restaurants in Boroughs and Neighborhoods



```
ny_neighborhood_stats=ny_neighborhood_stats[ny_neighborhood_stats['Average Rating']>
```

	Neighborhood	Average Rating
4	Clinton Hill	8.6
9	Fort Greene	8.6
11	Greenwich Village	9.0
16	Midtown	8.7
17	Murray Hill	8.6
26	Tribeca	9.0
30	West Village	8.9

Plotting the Indian Restaurants having a good average rating (more than 8.5)



Conclusion: Decision Points

- It will be helpful for an entrepreneur who wish to keep a good Indian restaurant in the New York. He/she can identify the most demanding borough to set up an Indian restaurant and which area has a great scope.
- Even the users' point of view, they can identify the best place to live in the New York city if they prefer Indian cuisine.
- Manhattan has many good Indian restaurants. It is the best place to stay if you prefer an Indian restaurant. • Staten Island ranks lowest average ratings of Indian restaurants. • Bronx is not having an Indian restaurant which is having more than 8.5 average rating. • Manhattan have potential Indian Restaurant Market. • Queens, Staten Island and Bronx lack of good Indian restaurants. • Investors/entrepreneurs can look into the above areas for setting up Indian restaurants.