Identifying an ideal location in New York City
to open an Indian Restaurant

BY

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Choosing an ideal location for Restaurant

- New York City is well known for it's diverse cuisine.

- There are around 700,000 Indians living in New York City, this being said, there is a great business potential for an Indian Restaurant.

- Choosing the right location for the restaurant will great increase the chances of the business being a successful.

Business Problem

- The client wants to open his business specifically in Manhattan area.

- There are already a large number of Indian restaurants in Manhattan.

- The best approach is choose the appropriate area where there is less competition.

- This analysis would also benefit the neighbourhood with no or fewer Indian restaurants by adding to diversity of cuisine.

Data Selection

- In order to produce a sufficient insight, we need to procure the list and exact locations on the Indian restaurants in Manhattan.

- The Google maps API was used to find geographic co-ordinates from the postal addresses.

- There are 1082 Indian restaurants operating in Manhattan

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newyork_venues_in.shape
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(1082, 7)
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Data about Indian Restaurants from Foursquare

[58]:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Marble Hill	40.876551	-73.910660	Riverdale Indian Cuisine	40.880886	-73.908800	Indian Restaurant
1	Marble Hill	40.876551	-73.910660	Tazmohol Indian Restaurant	40.878058	-73.903045	Indian Restaurant
2	Marble Hill	40.876551	-73.910660	Cumin Indian Cuisine	40.886459	-73.909816	Indian Restaurant
3	Chinatown	40.715618	-73.994279	Kabab Bites	40.720094	-73.995819	Indian Restaurant
4	Chinatown	40.715618	-73.994279	indi thai	40.719830	-73.990350	Indian Restaurant

Methodology Employed

- Dataset with neighbourhood names along with boroughs is used to procure the Latitude and Longitude details.

- These latitude the longitude names were then used to fetch Indian restaurants information from foursquare API.

- After that exploratory data analysis was performed on the data.

- The data was then clustered into 5 mutually exclusive parts using k means clustering.

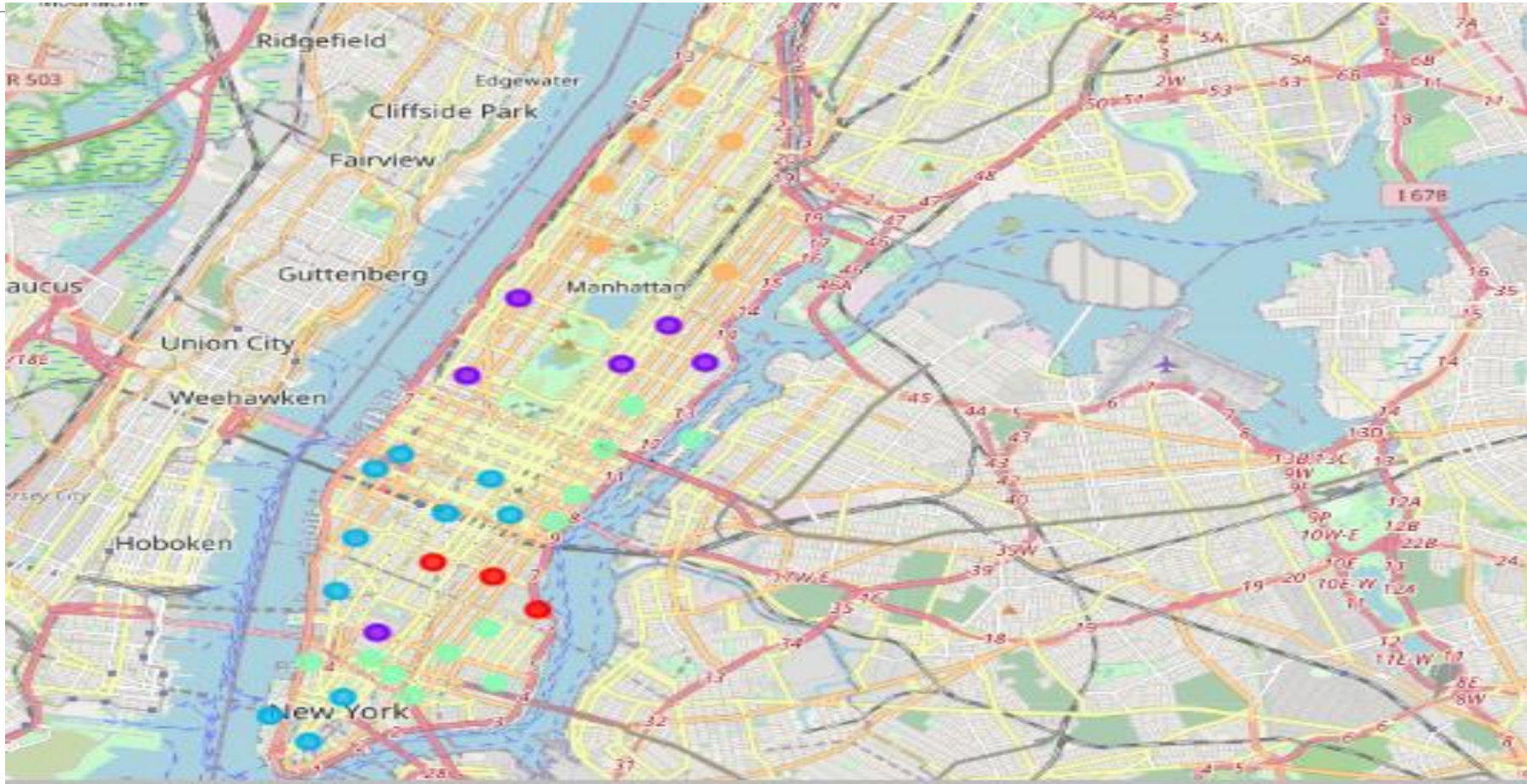# Location of Indian Restaurants in Manhattan

Feature group employed for analysis

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Battery Park City	Indian Restaurant	Food Truck	Tapas Restaurant	Asian Restaurant	Vegetarian / Vegan Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant
1	Carnegie Hill	Indian Restaurant	North Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
2	Central Harlem	Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
3	Chelsea	Indian Restaurant	Food Truck	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Court
4	Chinatown	Indian Restaurant	North Indian Restaurant	Dosa Place	Deli / Bodega	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant

K means clustering results

Visualization of clustered data

Result: Cluster 0

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
27	Gramercy	Indian Restaurant	South Indian Restaurant	North Indian Restaurant	Chaat Place	Vegetarian / Vegan Restaurant	Music Store	Hookah Bar	Food Truck	Dosa Place	Deli / Bodega
37	Stuyvesant Town	Indian Restaurant	Vegetarian / Vegan Restaurant	South Indian Restaurant	North Indian Restaurant	Dosa Place	Deli / Bodega	Chaat Place	Tapas Restaurant	Music Store	Hookah Bar
38	Flatiron	Indian Restaurant	Food Truck	South Indian Restaurant	North Indian Restaurant	Vegetarian / Vegan Restaurant	Music Store	Hookah Bar	Dosa Place	Deli / Bodega	Chaat Place

Result: Cluster 1

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
8	Upper East Side	Indian Restaurant	North Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
9	Yorkville	Indian Restaurant	North Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
12	Upper West Side	Indian Restaurant	South Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
13	Lincoln Square	Indian Restaurant	South Indian Restaurant	Food Truck	Vegetarian / Vegan Restaurant	Tapas Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Court
18	Greenwich Village	Indian Restaurant	North Indian Restaurant	Food Truck	Dosa Place	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant
30	Carnegie Hill	Indian Restaurant	North Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court

Result: Cluster 2

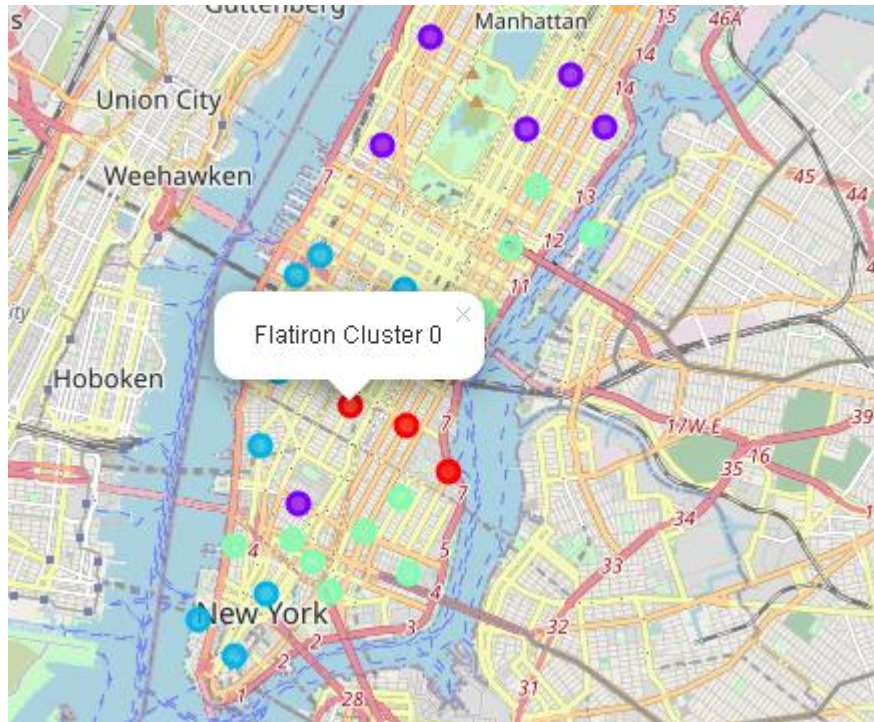|	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
14	Clinton	Indian Restaurant	Food Truck	South Indian Restaurant	Diner	Vegetarian / Vegan Restaurant	Tapas Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant
15	Midtown	Indian Restaurant	Food Truck	North Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Court
16	Murray Hill	Indian Restaurant	Food Truck	North Indian Restaurant	Vegetarian / Vegan Restaurant	South Indian Restaurant	Chaat Place	Asian Restaurant	Tapas Restaurant	Music Store	Hookah Bar
17	Chelsea	Indian Restaurant	Food Truck	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Court
24	West Village	Indian Restaurant	Food Truck	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Court

Result: Cluster 3

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
1	Chinatown	Indian Restaurant	North Indian Restaurant	Dosa Place	Deli / Bodega	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant
10	Lenox Hill	Indian Restaurant	North Indian Restaurant	Food Court	Asian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant
11	Roosevelt Island	Indian Restaurant	Food Court	Asian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant
19	East Village	Indian Restaurant	Deli / Bodega	Vegetarian / Vegan Restaurant	South Indian Restaurant	North Indian Restaurant	Dosa Place	Chaat Place	Tapas Restaurant	Music Store	Hookah Bar
20	Lower East Side	Indian Restaurant	Vegetarian / Vegan Restaurant	South Indian Restaurant	North Indian Restaurant	Deli / Bodega	Chaat Place	Tapas Restaurant	Music Store	Hookah Bar	Himalayan Restaurant

Result: Cluster 4

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Marble Hill	Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
2	Washington Heights	Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
4	Hamilton Heights	Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
5	Manhattanville	Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
6	Central Harlem	Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court
7	East Harlem	Indian Restaurant	Vegetarian / Vegan Restaurant	Tapas Restaurant	South Indian Restaurant	North Indian Restaurant	Music Store	Hookah Bar	Himalayan Restaurant	Food Truck	Food Court

Ideal Locations: Stuyvesant Town and Flatiron

Discussion

- This analysis is performed with limited data and limited computing resources hence the depth of insights would be proportionate to the extent.

- This analysis can be enhanced by adding more information on residential localities nearby, their choice of cuisine etc.

Conclusion

The goal of identifying an ideal location to open an Indian restaurant in Manhattan has been successfully achieved.

By
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