**FINAL REPORT**

**Capstone Project - The Battle of Neighbourhoods**

**Introduction:**

CAPSTONE PROJECT - THE BATTLE OF NEIGHBOURHOODS (PART-1)

Introduction:

Demographically New York City's is a large and ethnically diverse metropolis. It is

the largest city in the United States with a long history of international

immigration.

The City of New York, usually known as either New York City (NYC), or simply New

York (NY),

is the most populous city in the United States. With an estimated 2018 population

of 8,398,748

distributed over about 302.6 square miles (784 km2), New York is also the most

densely populated

major city in the United States.[10] Located at the southern tip of the U.S. state

of New York, the

city is the center of the New York metropolitan area, the largest metropolitan area

in the world by

urban landmass.[11] With almost 20 million people in its metropolitan statistical

area and approximately

23 million in its combined statistical area, it is one of the world's most populous

megacities New York

City was home to nearly 8.5 million people in 2014, accounting for over 40% of the

population

of New York State and a slightly lower percentage of the New York metropolitan

area, home

to approximately 23.6 million. 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.

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. English remains the most widely spoken language, although there

are areas

in the outer boroughs in which up to 25% of people speak English as an alternate

language,

and/or have limited or no English language fluency. English is least spoken in

neighbourhoods

such as Flushing, Sunset Park, and Corona.

With its diverse culture, comes diverse food items. There are many restaurants in

New York

City, each belonging to different categories like Chinese, Indian, and French etc.

PROBLEM:

To find the answers to the following questions:

Q1) To list and visualize all major parts of New York City that has great Indian

restaurants.

Q2) what is best location in New York City for Indian Cuisine?

Q3) which areas have potential Indian Restaurant Market?

Q4) which all areas lack Indian Restaurants?

Q5) which is the best place to stay if you prefer Indian Cuisine?

**Data Section:**

New York City's demographics show that it is a large and ethnically diverse metropolis. With its diverse culture, comes diverse food items. There are many restaurants in New York City, each belonging to different categories like Chinese, Indian, and French etc.

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. We begin by collecting the New York city data from the following link "<https://cocl.us/new_york_dataset">
2. We will find all venues for each neighbourhood using Foursquare API



1. We will then filter out all venues with Indian restaurant for further analysis.

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



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





1. Next we will consider all the neighbourhoods with average rating greater or equal 9.0 to visualize on map.



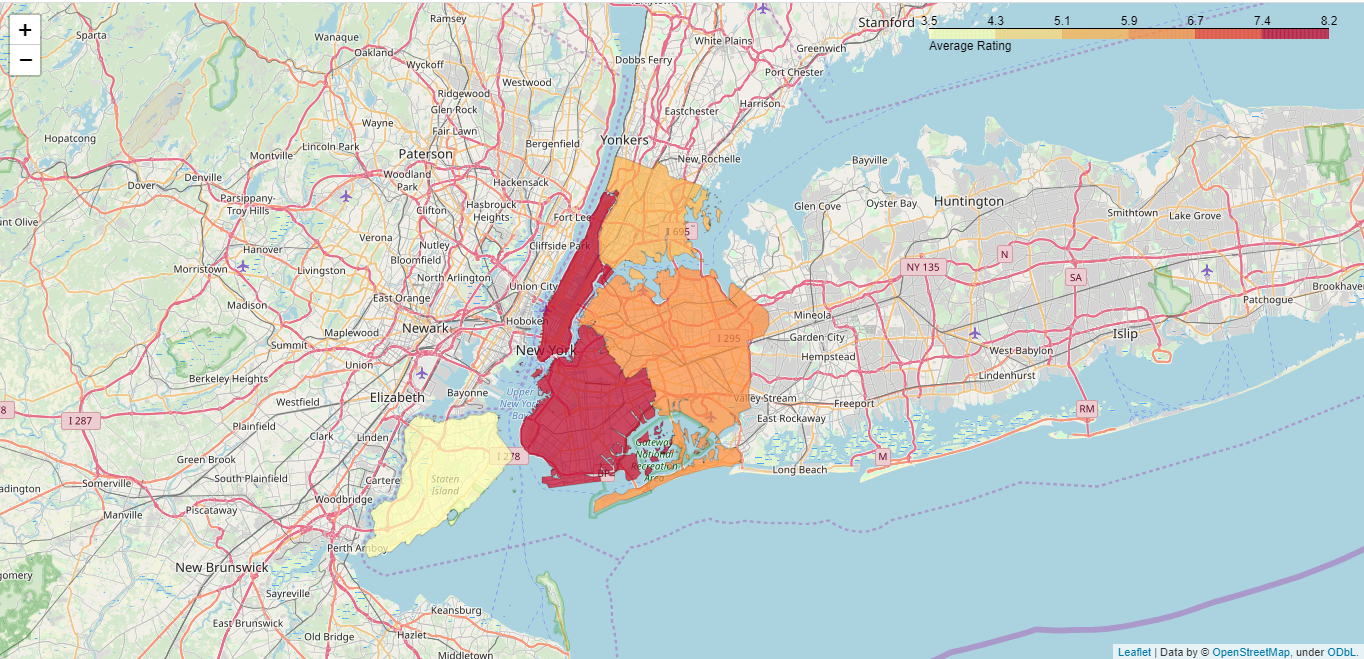
1. We will join this dataset to original New York data to get longitude and latitude.



1. Finally, we will visualize the Neighbourhoods and Borough based on average Rating using python’s Folium library.

Neighbourhoods based on average rating:

Borough based on average rating:



**Result:**

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

Answers:

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



#### Astoria (Queens), Blissville (Queens), Civic Center (Manhattan) are some of the best neighbourhoods for Indian cuisine.

#### Manhattan have potential Indian Restaurant Market.

#### Staten Island ranks last in average rating of Indian Restaurants.

#### Manhattan is the best place to stay if you prefer 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.