The Battle of Neighborhoods: Indian in New York City

**Introduction/Business Problem**

New York is the largest city in the United States with a long history of international immigration. New York City was home to nearly 8.39 million people in 2018. Over the years the city has been the fastest growing in the region. The New York region continues to be by far the leading metropolitan gateway for legal immigrants admitted into the United States.

Throughout its history, New York City has been a major point of entry for immigrants; the term "melting pot" was coined to describe densely populated immigrant neighborhoods 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 neighborhoods 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, French etc.

So as part of this project, we will list and visualize all major parts of New York City that has great Indian restaurants.

**Data section**

Data for this project we need the following data:

New York City data that contains list Boroughs, Neighborhoods 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 neighborhoods of New York city. Indian restaurants in each neighborhood of New York city. Data source: Foursquare API Description: By using this ape we will get all the venues in each neighborhood. We can filter these venues to get only Indian restaurants. GeoSpace 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.

Using my credentials of Foursquare API features of near-by places of the neighborhoods would be mined.

Due to http request limitations the number of places per neighborhood parameter would reasonably be set to 100 and the radius parameter would be set to 500.

**Clustering Approach:**

To compare & explore neighborhoods, segment them, and group them into clusters to find neighborhoods meeting more than one of my desired criteria in a big city like New York. #### the Project will also use the following libraries:

Pandas: For creating and manipulating dataframes.

Folium: Python visualization library would be used to visualize the neighborhoods cluster distribution of using interactive leaflet map.

Scikit Learn: For importing k-means clustering.

JSON: Library to handle JSON files.

XML: To separate data from presentation and XML stores data in plain text format.

Geocoder: To retrieve Location Data.

Beautiful Soup and Requests: To scrap and library to handle http requests

Google maps will be used in the last step for confirmation of results

External like to Instagram page will be shared to show the post

**Approach**

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 rating, 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(python)

**Queries that can be answered using above dataset**

What is best location in New York City for Indian Cuisine ?

Which areas have potential Indian Resturant Market ?

Which all areas lack Indian Resturants ?

Which is the best place to stay if I prefer Indian Cuisine ?

**Conclusion**

Astoria(Queens), Blissville(Queens), Civic Center(Manhattan) are some of the best neighborhoods for indian cuisine.

Manhattan have potential Indian Resturant Market

Staten Island ranks last in average rating of Indian Resturants.

Manhattan is the best place to stay if you prefer Indian Cuisine.

Limitations

The ranking is purely on basis of rating of restaurants

The accuracy of data depends purely depends on the data provided by Foursquare

Thank You :)