Project

Finding the area having the maximum number of Indian Restaurants in New York City

- **Introduction & Business problem:**

  There is one Indian man who is going to New York City for a two month. He is going there only for two month because he got a invitation to attend the largest annual tech event of "XYZ" company and after that he will be back to India.
  So the problem is this:

  ❖ He want to rent a flat for a two month in the area where he will easily get the Indian Restaurants or Indian Cuisine.

  Solution of this problem:

  ❖ I am going to take the data of New York city and with the help of Foursquare API will get that which Borough and its Neighborhood having maximum number of Indian Cuisine/ Indian Restaurants.

  ❖ And after we will display it on a map so the Indian person can get in which area/borough he should search a flat for rent.

- **Data Requirements and Data Acquisition:**

  Data 1: 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.
  Neighbourhood has a total of 5 boroughs and 306 neighbourhoods. In order to segment the neighbourhoods and explore them, we will essentially need a dataset that contains the 5 boroughs and the neighbourhoods that exist in each borough as well as the latitude and longitude coordinates of each neighbourhood.

  Data 2: 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.

Data 3: 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 the choropleth map.

● **Analysis:**

We will import the required libraries for python.
  ❖ pandas and numpy for handling data.
  ❖ request module for using FourSquare API.
  ❖ geopy to get coordinates of the City of New York.
  ❖ folium to visualize the results on a map.

Now we define a function to get the geocodes i.e latitude and longitude of a given location using geopy.
We define a function to interact with FourSquare API and get top 100 venues within a radius of 1000 metres for a given latitude and longitude. Function will return us the venue id , venue name and category.
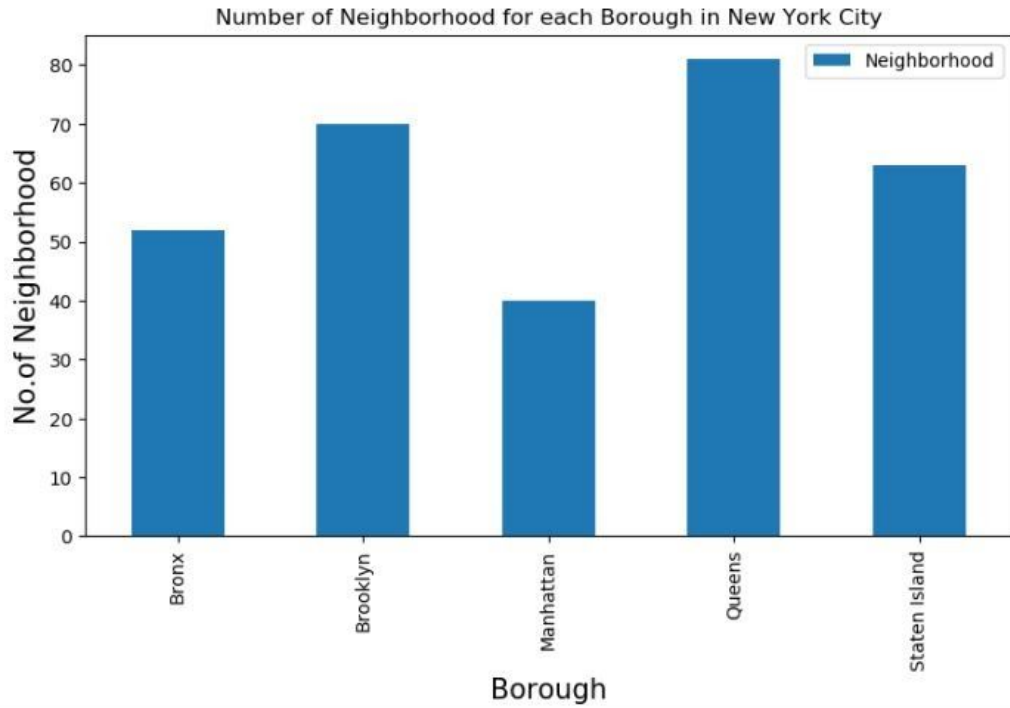Now we will define a function to get venue details like count , rating , tip counts for a given venue id.
Now we define a function to get the new york city data such as Boroughs, Neighborhoods along with their latitude and longitude.

● **Analysis Results:**

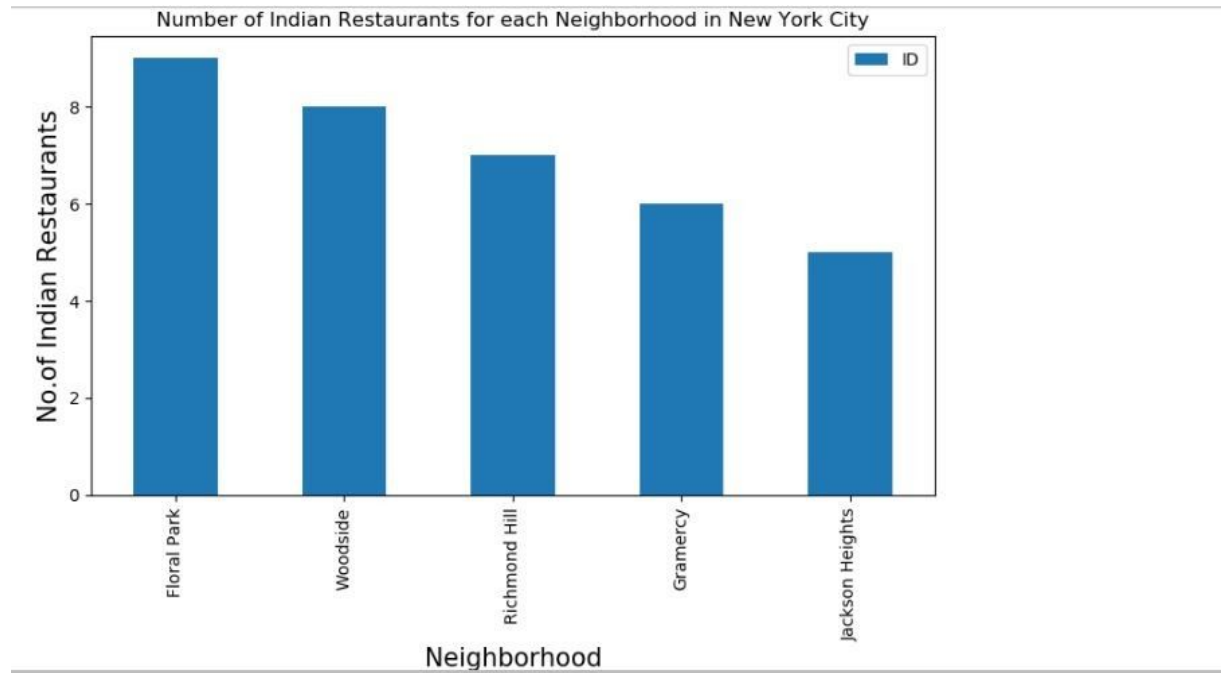After performing the analysis on data here we can see some visualizations on barcharts.

  ❖ **We see that Queens has the highest number of Neighbourhoods.**

Number of Neighborhood for each Borough in New York City

❖ **Here also "Queens" has the highest number of Indian Restaurants**

Number of Indian Restaurants for each Borough in New York City

❖ **"Floral Park" in "Queens" having the highest number of Indian Restaurants.**

Number of Indian Restaurants for each Neighborhood in New York City

❖ **Here we can visualize it also in a map that "Queens" Borough is having the highest number of Indian Restaurants. And in which the "Floral Park" neighborhood having the highest number of Indian Restaurants.**

- **Results:**
  - ❖ Here after visualization it is clear that the "Queens" Borough is having the maximum number of Indian Restaurants
  - ❖ And the "Floral Park" is having the maximum number of Indian Restaurants and followed by "Woodside" and "Richmond Hill".

- **Conclusion:**
  - ❖ So Here after doing the analysis and Visualization we knew that "Floral Park" is having the maximum number of India Restaurants which is a Neighborhood of "Queens" Borough.
  - ❖ So the Indian man who is going to New York city he should search the flat in the "Queens" Borough near the "Floral Park" or inside the area of "Floral Park" or inside of "Woodside" and "Richmond Hill" Neighborhood so he will not facing the issue of Indian Cuisine.

Final Result/ Decision/ Problem Solution:

So here after analysing this map and barchart the Indian man can get which area is having the maximum number of Indian Restaurants and he can easily get a flat on rent for a two month near about that area(Here that is "Queens" Borough) there for their comfortability.