Coursera Capstone Project

(The Battle of Neighborhoods)

Business Problem:

- Location of restaurants is one of the most important decisions that will determine whether opening a restaurant will be a success or failure.
- This projects aims to analyse and select the best location to open a new restaurant in NewYork city.
- Business Question:

  In the city of NewYork, if a developer is looking to open a restaurant, where would you recommend that they open it.

Data Required:

List of neighborhoods in NewYork City

Latitude and Longitude coordinates of neighborhoods

Venue Data, particularly data related to restaurants

Sources of Data

- Wikipedia page for neighborhoods from the following link :

https://geo.nyu.edu/catalog/nyu_2451_34572

- Geocoder package for latitude and longitude coordinates
- Foursquare API to gather venue data

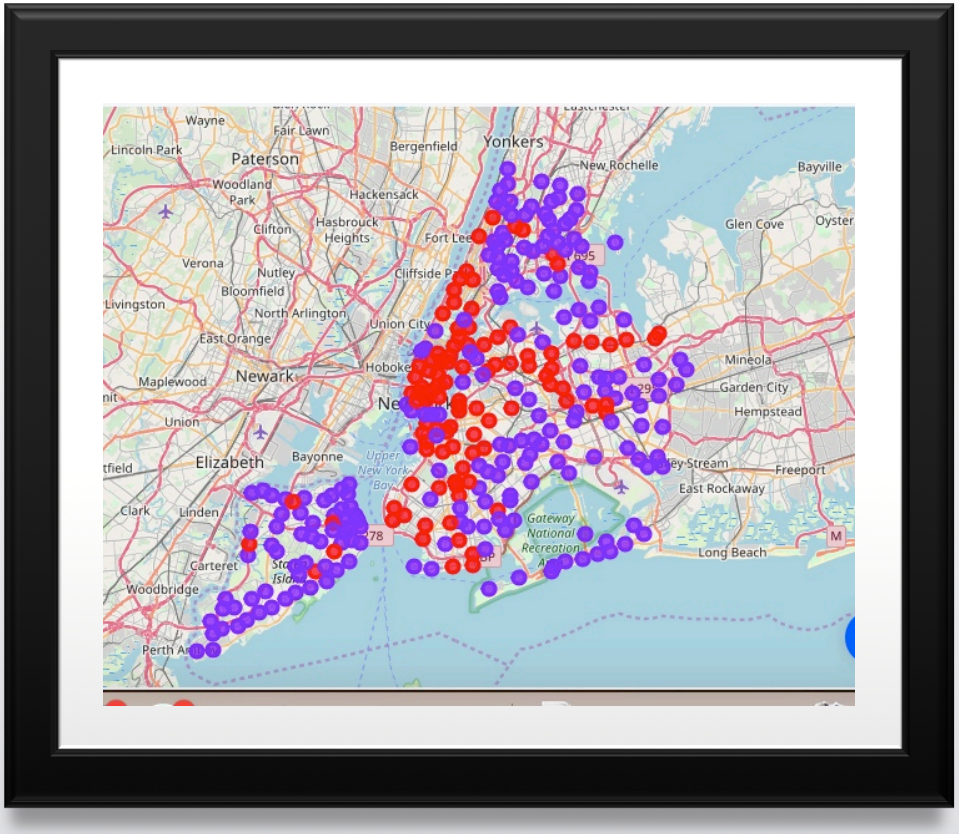
Methodology

- Gather the data and populate it in Pandas Data Frame and then visualize the neighborhoods in a map using Folium package.
- Use Foursquare API to get the top 200 venue data
- Group data by neighborhood and taking the mean of frequency of occurrence of each venue category
- Filter venue category by restaurants
- Perform clustering of data using k means clustering
- Visualize the clusters in a map using Folium

Results

Categorize the neighborhoods into 2 clusters:

- Cluster 0 represents the neighborhoods with no restaurants wheras
- Cluster 1 represents neighborhoods with high concentration of restaurants.



Discussion

- Cluster 1 has high number of restaurants located in various neighborhoods of Manhattan, Bronx, Queens, Brooklyn and Staten Island.
- Cluster 0 has no restaurant in Clason Point neighborhood of Bronx and a few neighborhoods of Staten Island.
- This project recommends developers to capitalize on these findings to open new restaurants in selected neighborhoods of cluster 0 with no competition.

Conclusion

- The answer proposed to the business problem is : The selected neighborhoods in cluster 0 are the most preferred location to open a restaurant.
- The findings of this project will help the relevant company to capitalize on the opportunities of high potential locations while avoiding overcrowded areas to open a new restaurant.