Applied Data Science Capstone
- *The Battle of Neighborhoods*

Best business location for Korean restaurant in Queens, NY

1. Introduction(Business Problem & Target Audience)

1) Business Problem

Queens is the easternmost of the five boroughs of New York City as well as having a large population of Koreans. According to the 2010 United States Census, the Korean population of Queens was 64,107, representing the largest municipality in the United States with a density of at least 500 Korean Americans per square mile. Due to the high percentage of Koreans in this area as well as the increasing popularity of Korean food, Queens, NY is an ideal location to open a Korean restaurant.

However, there are already so many Korean restaurants operating in this area and the market is highly competitive. As it is a highly developed city, the cost of doing business is also one of the highest. Thus, any new business venture or expansion needs to be analysed carefully.

In accordance with this, the idea of this study is to help Koreans who are planning to open new Korean restaurants in Queens, NY to choose the right location by providing relevant data.

1. Introduction(Business Problem & Target Audience)

2) Target Audience

The target audience will be Koreans who are planning on opening a restaurant in Queens, so I will only focus on that borough during my analysis. The objective is to locate and recommend to the management which neighborhood of Queens will be the best in which to open a restaurant. The management should also be able to understand the rationale of the recommendations made.

2. Data

1) Data 1. Link to the dataset is :

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

New York city has a total of 5 boroughs and 306 neighborhoods. In order to segment the neighborhoods and explore them, I will need a dataset that contains the 5 boroughs and the neighborhoods that exist in each borough as well as the the latitude and longitude coordinates of each neighborhood. The link for this dataset is given above.

2) Data 2. Foursquare API_Korean Restaurant category ID: 4bf58dd8d48988d113941735

New York city geographical coordinates will be utilized as input for the Foursquare API, that will be leveraged to obtain venue information for each neighborhood.We will use the Foursquare API to explore neighborhoods in New York City. In addition, Korean Restaurant category Id 4bf58dd8d48988d113941735 is used for retrieving data from Foursquare API.

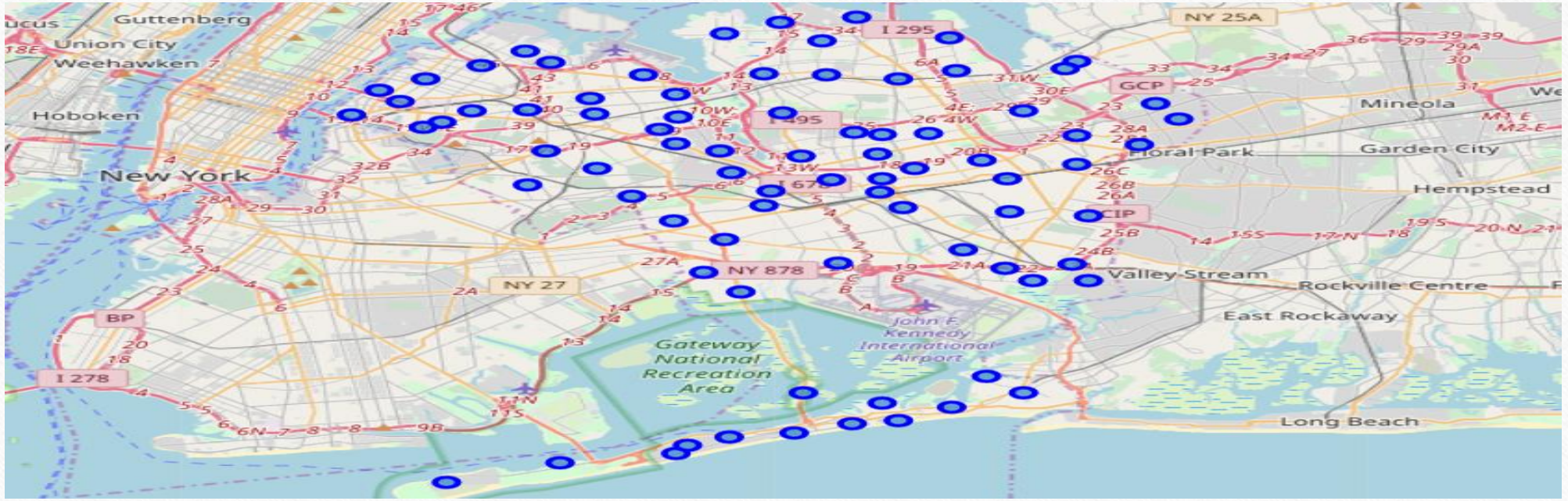
3. Methodology

In this project, I will use the basic methodology as taught in Week 3 lab.

First, I will convert addresses into their equivalent latitude and longitude values. Then I will use the Foursquare API to explore neighborhoods in Queens, NY. After that, I will obtain data on the most common venue categories in each neighborhood, and then use this information to group the neighborhoods into clusters K-means clustering algorithm will be used to complete this task. And also, I will use the Folium library to visualize the neighborhoods in Queens, NY.

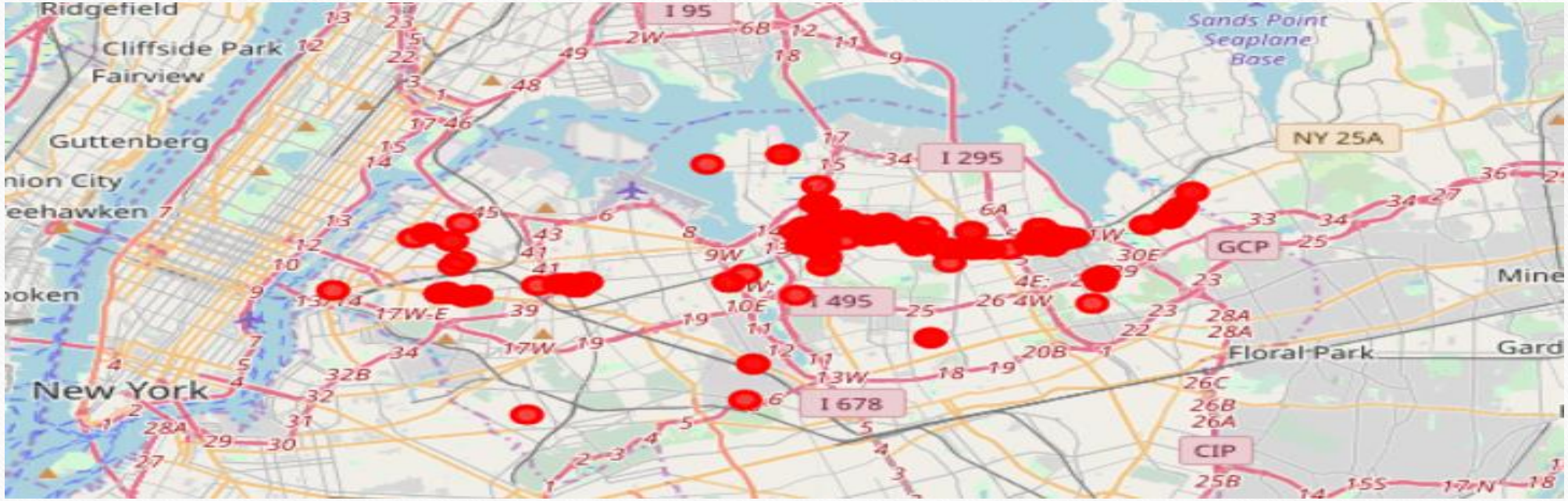
3-1. Methodology

1) A map of Queens, NY with neighborhoods superimposed on top.



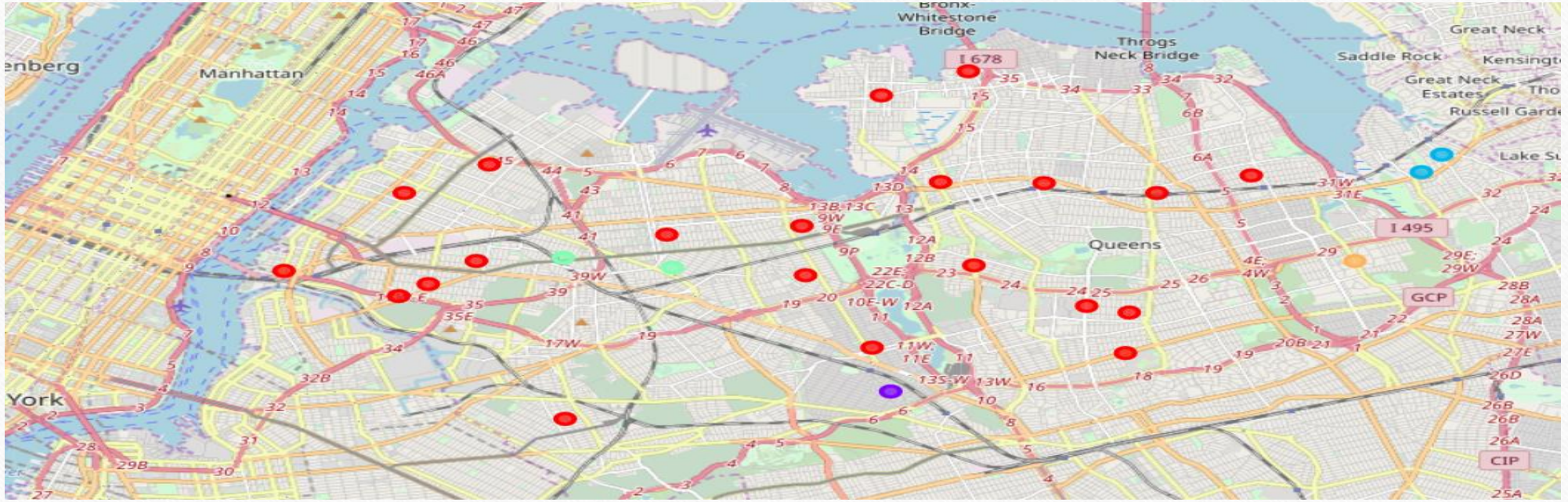
3-2. Methodology

2) A map of Korean Restaurant in Queens, NY



3-3. Methodology

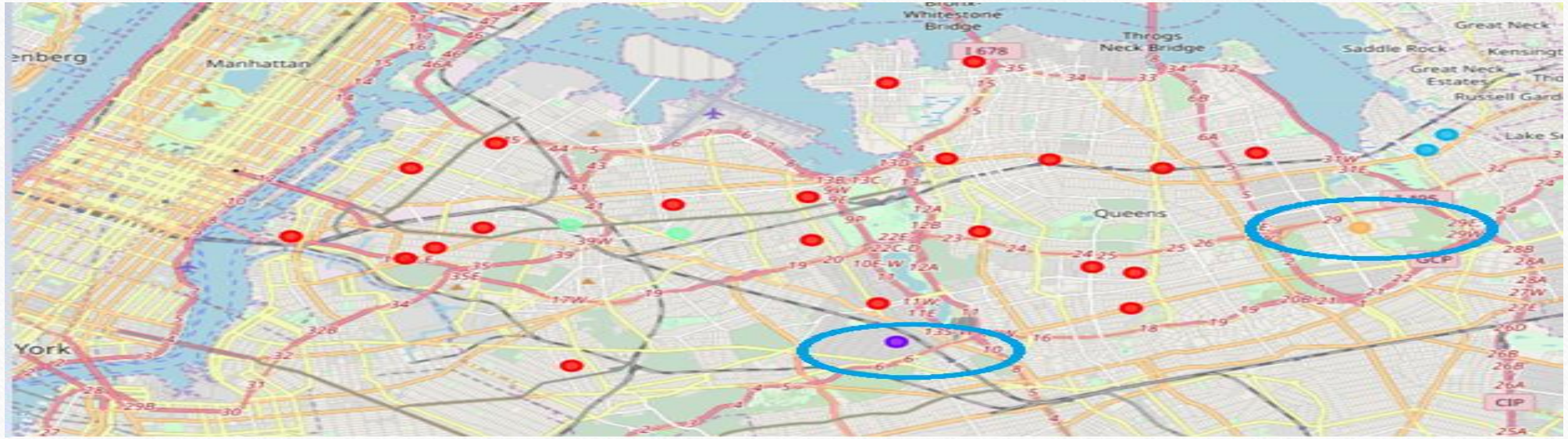
3) Group the neighborhoods into clusters K-means clustering algorithm



4-1. Result

K-mean Cluster: Using K-mean to cluster data areas with less number of Korean restaurants

Based on dataframe analysis above Cluster 1 and Cluster 4 areas are the best places to open new Korean restaurants.



5. Discussion

In this section, I will be discussing the observations I have noted and the recommendation that I can make based on the results.

This analysis is performed on limited data. A sufficient amount of data increase the likelihood of achieving accurate results.

- There is high competition in Murray Hill, Flushing, Auburndale, and Bayside so it is very risky to open a business in these areas.
- There is low competition in Corona, Forest Hills, Hunters Point, Pomonok, Ridgewood, and Utopia so it is not risky to open a business in these areas.
- A more detailed analysis could be done by considering other factors such as transportation, demographics of inhabitants.

Finally, FourSquare proved to be a good source of data but frustrating at times. Despite having a Developer account I regularly exceeded my hourly limit locking me out for the day.

6. Conclusion

Although all of the goals of this project were met there is definitely room for further improvement and development as noted below. However, the goals of the project were met and, with some more work, could easily be devleoped into a fully phledged application that could support opening a business in an unknown location.

As per the neighborhood or restaurant type mentioned like Korean restaurants analysis can be checked. A venue with lowest risk and competition can be identified.