Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods (Week 2)

Introduction: Business Problem

In this project we will look for the best place to open a ramen shop in New York. This report will be a good help for anyone who is considering opening a new ramen restaurant. New York is the largest city in the United States with a diverse population. It is also a city with many busy working people. On the other hand, there are many Asians living in New York. In Asia, ramen is a familiar menu item to many people, and recently it has become a universal language. Therefore, I think that ramen, which can be eaten quickly and cheaply and is liked by everyone, will become a popular food in New York. In this report, we will use data science to visualize the characteristics of each district using raw data to find the most suitable district to open a ramen restaurant.

Data

The following data is required for this project.

Geographic data such as latitude and longitude of New York City
https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork/labs/newyork_data.json
This data will be used to analyze the districts of New York.

Ramen restaurants in New York Foursquare API Using this API to extract information about ramen restaurants from restaurants in New York.

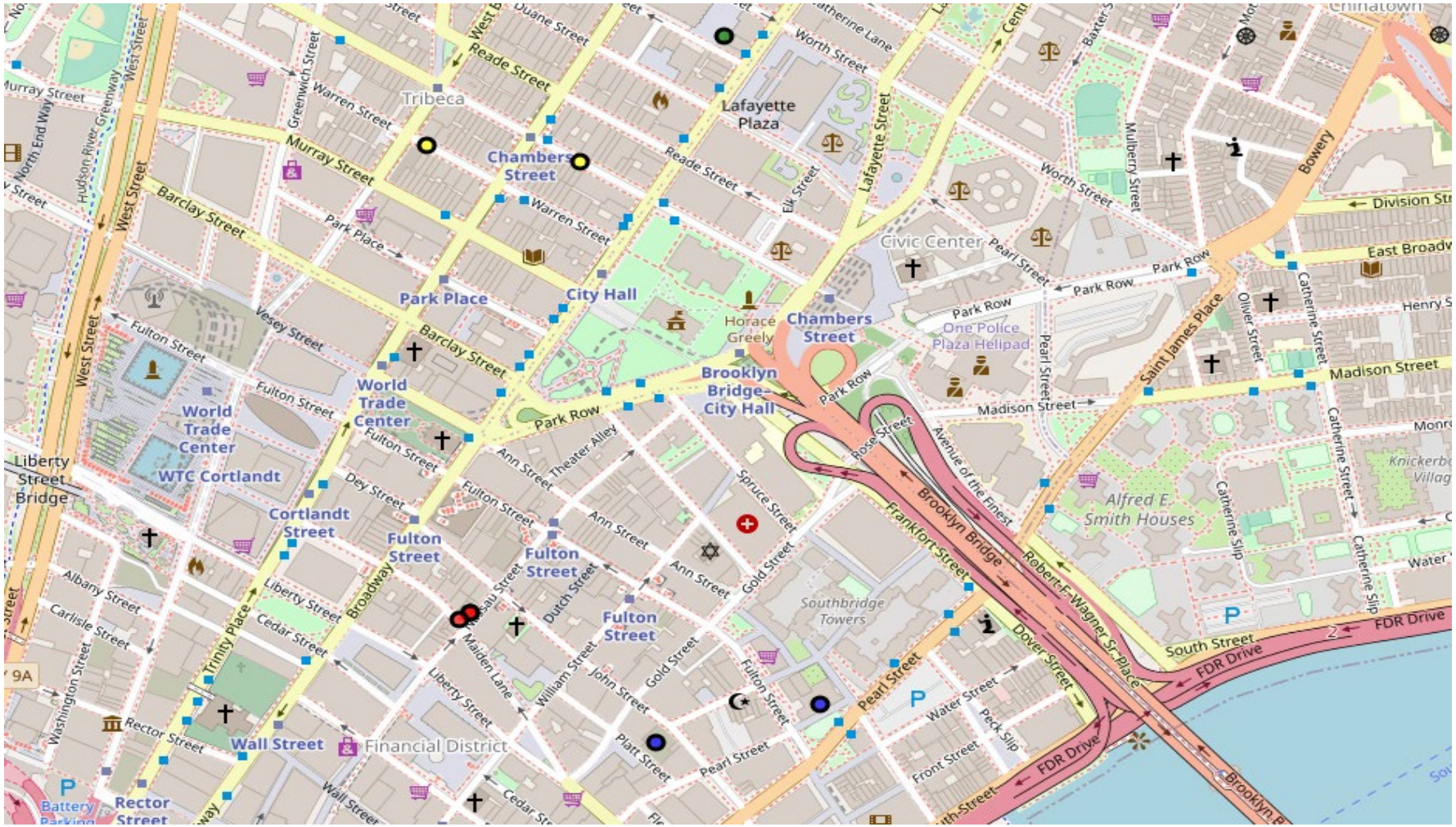
Methodology

The goal of this project is to find the best place to open a ramen restaurant in New York City. We have obtained the following data:

Geographic data of New York City
Information on Japan-related restaurants in New York
We used the FourSquare API.

Analysis

Cluster these Neighborhoods and visualize.



Result and Discussion

The results of the exploratory data analysis and clustering are summarized below.

Restaurants associated with Japanese cuisine are distributed throughout central and southern New York.
There was no solid distribution.
Based on these results, it can be concluded that the least competition for future Japanese restaurants will be in upstate New York. On the other hand, opening a restaurant in the southern part of New York is more likely to attract customers who came to other Japanese restaurants in close proximity. This clustering is based on information from the Foursquare API. Therefore, it may not be accurate because it does not include other information such as land prices.

Conclusion

The goal of this project is to find the best location to open a ramen restaurant in New York. We applied the k-means clustering algorithm to select the areas in New York with the most Japanese restaurants.

Finally, all of these analyses rely on Foursquare data. So I figured I would need to get information from other external databases for a more comprehensive analysis.