Battle Of Neighborhoods – New York City

Introduction:

While travelling around the world for short trips, it is a normal routine that we do not always plan much for dine outs with friends or colleagues. This might sometimes leave us with an unsatisfactory experience if you do not find your favorite restaurant especially when you are new to a particular city. This analysis deals with one such problem where in you are new to New York city and looking for a good Italian restaurant in Brooklyn to dine out on a Friday evening. Many of us would have faced a similar situation and hence anyone of us can be interested in outcome of this analysis.

Data Acquisition and Cleansing

To solve the problem mentioned in introduction section, we need data related to neighbourhoods of New York city which includes geographical coordinates data (latitude and longitude) as well. Also, we need venue details to explore the neighbourhood of our interest and pick the right choice.

The required neighbourhood's data for New York city is sourced from NYU spatial data repository portal. The venue details are fetched from Foursquare API which will be used to further explore neighbourhoods. Below are the relevant web links:

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

https://developer.foursquare.com/

Once data was downloaded from both the sources in JSON format, the required columns were filtered out from each data set and merged together to perform further analysis.

Methodology:

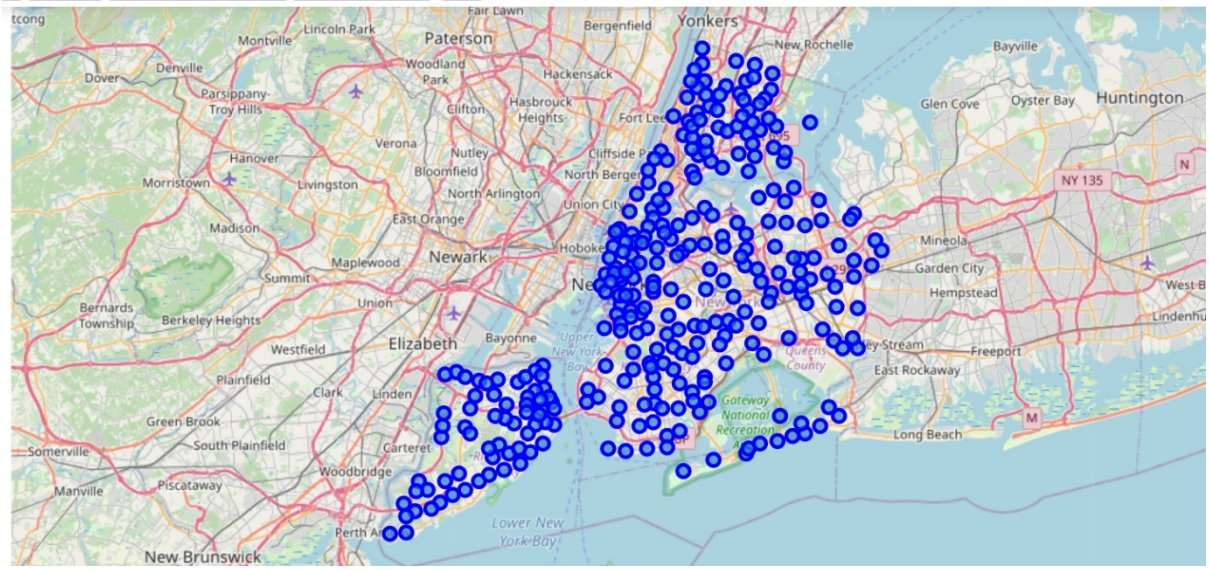
To find an answer to our problem, neighborhoods data for "Brooklyn" borough was filtered out from original data for New York as we are interested to find an Italian restaurant in that area. All available neighborhoods were visualized using maps from Folium library.

Venue details were fetched from Foursquare API and merged with neighborhoods data to explore each of those neighborhoods for restaurants available in Brooklyn. All the Italian restaurants in Brooklyn were then clustered using K-Means clustering algorithm to figure out where majority of Italian restaurants are available to find more relevant options in near vicinity.

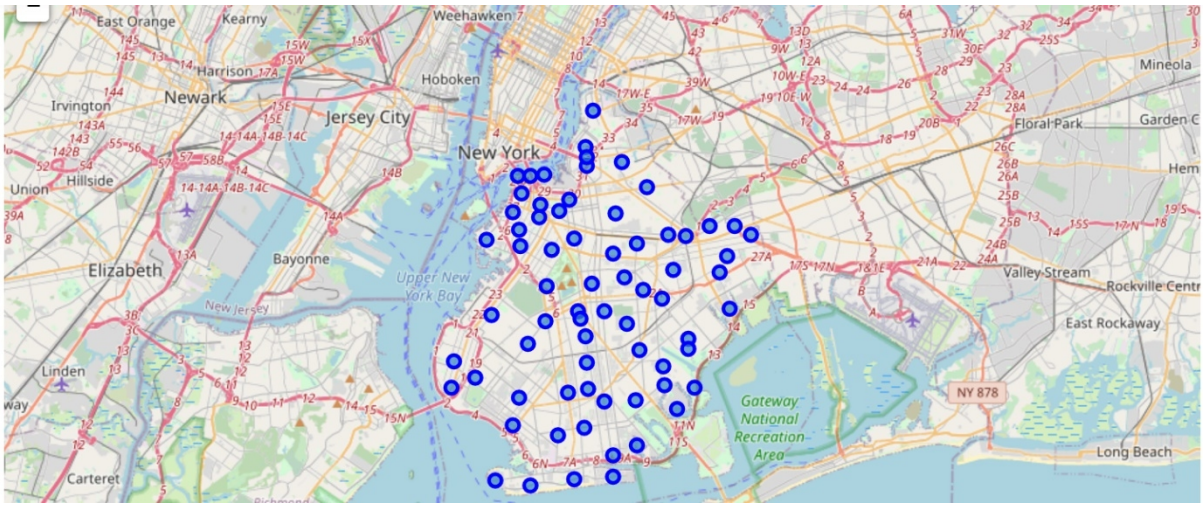
Results:

Below are the results of our analysis based on available data sets.

New York Neighborhoods:



Brooklyn Neighborhoods:



Top 10 Neighborhoods for Italian Restaurants:

	Neighborhood	Italian Restaurant
39	Madison	0.500000
12	Carroll Gardens	0.458333
34	Gravesend	0.400000
2	Bedford Stuyvesant	0.333333
33	Gowanus	0.266667
31	Georgetown	0.250000
3	Bensonhurst	0.250000
21	Dumbo	0.222222
1	Bay Ridge	0.206897
48	Park Slope	0.187500

Clusters for Italian Restaurants in Brooklyn:

Discussion:

From the top 10 neighborhoods where most common restaurants are of Italian cuisine, “Madison” looked like the best option we can opt for. Later on, based on clustering of restaurants, it was understood that majority of Italian cuisines are located in north-western region of Brooklyn which will give us more options to decide on where to dine out. Based on the results provided by data, “Carroll Gardens” and then “Bedford Stuyvesant” turn out to be a better neighborhood to dine out as “Madison” and “Gravesend” are located in southern part of Brooklyn. The tips data was then fetched to see if any recommendations were available for picking a better restaurant and we did not find any such data unfortunately for Brooklyn.

Conclusion:

The purpose of this analysis is to find a better neighborhood in “Brooklyn, New York” with multiple Italian restaurants in vicinity. Based on the analysis performed and outcome yielded, the conclusion will be to choose “Carroll Gardens” as a first option to try a dine out as it is located in north-western part of Brooklyn with multiple alternate options available in near vicinity.