The battle of neighborhoods

1. Introduction & Business Problem

▪ Problem Background
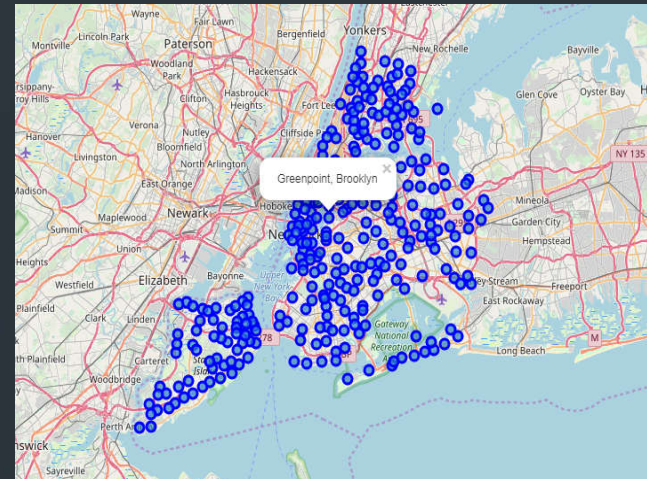
❖ New York is a center for important business, the ratio of success depends on good decisions to invest in local markets or restaurants.

❖ There are a high competitive level for starting a new business.

❖ Difficulty to find a good place to start a new business

▪ Problem Description

❖ Find the appropriate public who prefer a specific kind of food.

❖ Open a restaurant with a high demand of an specific food, but not in a saturated place

▪ Target Audience

❖ Companies or entrepreneurs who want to start a new business related with meals in the New York City
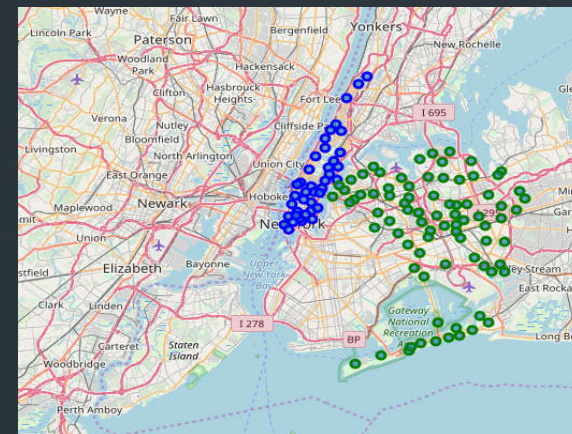
2. Data Description

Neighborhood has a total of 5 boroughs and 306 neighborhoods. In order to segment the neighborhoods and explore them, we will essentially need a dataset that contains the 5 boroughs and the neighborhoods that exist in each borough as well as the latitude and longitude coordinates of each neighborhood.

- Data about Cuisine of New York
  https://en.wikipedia.org/wiki/Cuisine_of_New_York_City

- Data about Crimes and delinquency of New York
  https://www1.nyc.gov/site/nypd/stats/crime-statistics/borough-and-precinct-crime-stats.page

	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585

3. Methodology of Analysis

3.1 Types of Cuisine

Different kind of foods that are served in the 5 boroughs of New York City
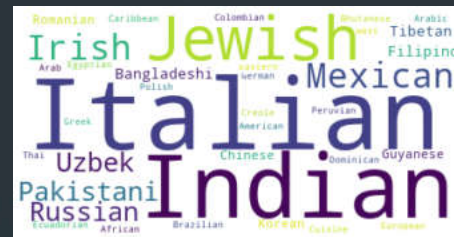
Bronx
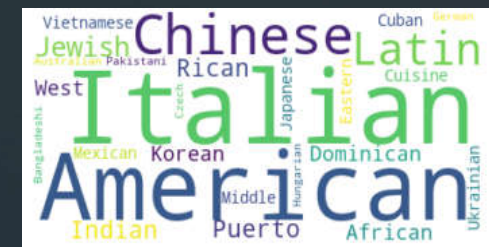

Queens

Brooklyn
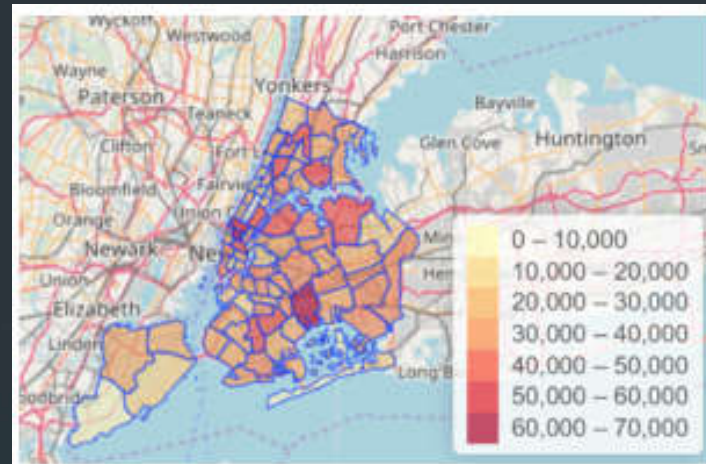

Staten Island

Manhattan

3. Methodology of Analysis

3.2 Index Crime in New York

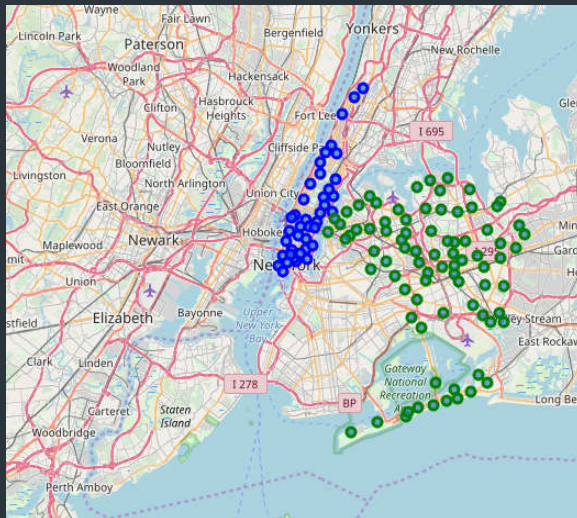**The levels of crime according New York Police Department for the 5 boroughs according 2018 data**

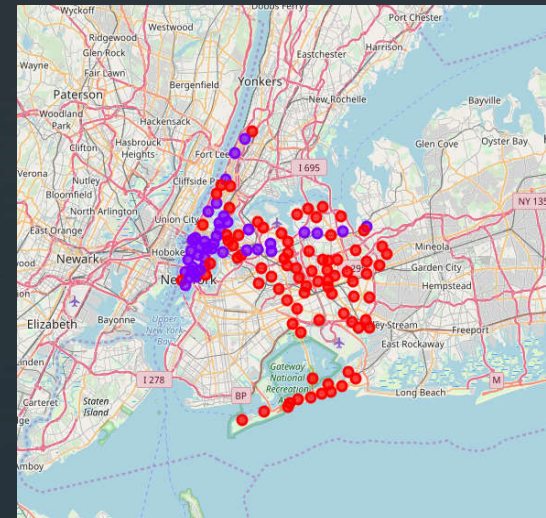|	Borough	Quantity
0	Bronx	19257
1	Brooklyn	27999
2	Manhattan	26828
3	Queens	18935
4	Staten Island	2699

4. Results

4.1 Exploring data of Manhattan and Queens

- There are 121 neighborhoods distributed between Manhattan and Queens
- Using the Foursquare API we obtained that in Manhattan and Queens there are 5395 venues and 394 unique categories.
- There are 40 neighborhoods which have a high number of restaurants while 81 neighborhoods have a lower number of restaurants.

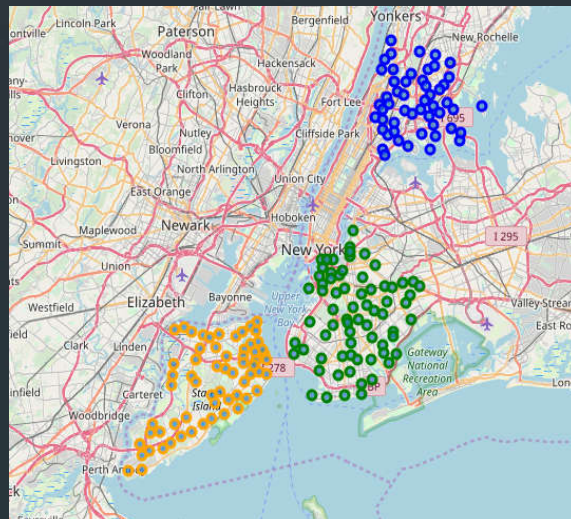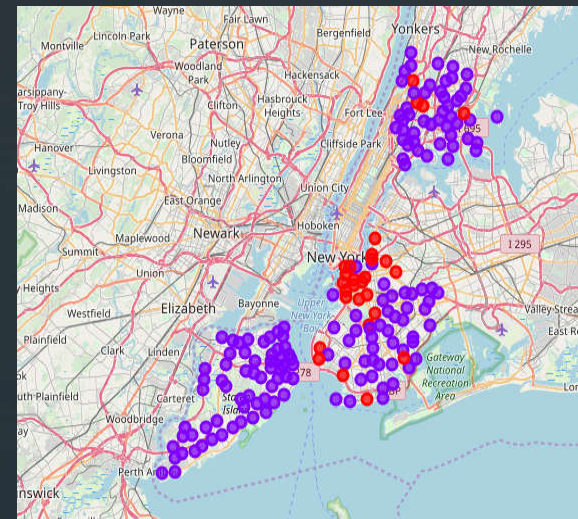|	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Marble Hill	40.876551	-73.91066	Arturo's	40.874412	-73.910271	Pizza Place
1	Marble Hill	40.876551	-73.91066	Bikram Yoga	40.876844	-73.906204	Yoga Studio
2	Marble Hill	40.876551	-73.91066	Tibbett Diner	40.880404	-73.908937	Diner
3	Marble Hill	40.876551	-73.91066	Starbucks	40.877531	-73.905582	Coffee Shop
4	Marble Hill	40.876551	-73.91066	Dunkin'	40.877136	-73.906666	Donut Shop

Cluster map

4. Results

4.2 Exploring data of Bronx, Brooklyn and Staten Island

- There are 185 neighborhoods distributed between Manhattan and Queens
- Using the Foursquare API we obtained that in Bronx, Brooklyn and Staten Island there are 4813 venues and 331 unique categories.
- There are 28 neighborhoods which have a high number of restaurants while 155 neighborhoods have a lower number of restaurants.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Wakefield	40.894705	-73.847201	Lollipops Gelato	40.894123	-73.845892	Dessert Shop
1	Wakefield	40.894705	-73.847201	Rite Aid	40.896649	-73.844846	Pharmacy
2	Wakefield	40.894705	-73.847201	Carvel Ice Cream	40.890487	-73.848568	Ice Cream Shop
3	Wakefield	40.894705	-73.847201	Shell	40.894187	-73.845862	Gas Station
4	Wakefield	40.894705	-73.847201	Dunkin'	40.890459	-73.849089	Donut Shop

Cluster map

5. Conclusions and recommendations

- The number of clusters that formed in all borough are 2. The clusters represent the boroughs in which there are a high number of restaurants and where are a reduce number of these. These could show big opportunities to open a new business in a specific area.

- Boroughs like Bronx, Brooklyn and Staten Island could be good alternatives to start a new business because the number of restaurants is low. However, it's very important to analyze the crime ratio in order to explain because there are a reduce number of restaurants. In the same way, could be necessary analyze economy factors to give a good recommendation about open or not a restaurant.