BATTLE OF THE NEIGHBORHOODS

OPTIMUM LOCATION FOR NEW RESTAURANT BUSINESS

NY

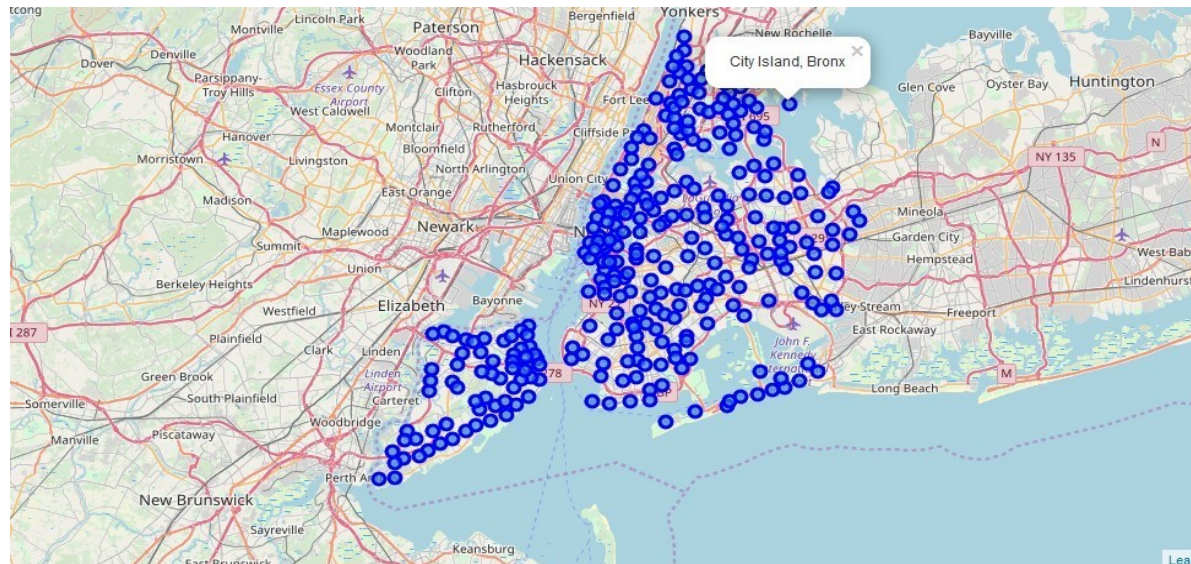# The City of New York is famous for its excellent cuisine

- Business Problem :
1. Choice of first neighborhood to start restaurant business.
2. Easy to replicate.
3. Low competition
4. High demand
5. Choice of Menu

- Success Criteria :
1. Best neighborhood which meets above criteria.

- Most populous city in the United States
- It is diverse and is the financial capital of USA
- It is multicultural
- Provides lot of business opportunities
- Business friendly environment
- Attracted many different players into the market
- Global hub of business and commerce.
- The city is a major centre for banking and finance, retailing, world trade, transportation, tourism, real estate, new media, traditional media, advertising, legal services, accountancy, insurance, theatre, fashion, and the arts in the United States.

CUISINES:-

1. The City of New York is famous for its excellent cuisine. It's food culture includes an array of international cuisines influenced by the city's immigrant history.
2. Central and Eastern European immigrants, especially Jewish immigrants - bagels, cheesecake, hot dogs, knishes, and delicatessens
3. Italian immigrants - New York-style pizza and Italian cuisine
4. Jewish immigrants and Irish immigrants - pastrami and corned beef
5. Chinese and other Asian restaurants, sandwich joints, trattorias, diners, and coffeehouses are ubiquitous throughout the city
6. Mobile food vendors - Some 4,000 licensed by the city
7. Middle Eastern foods such as falafel and kebabs examples of modern New York street food
8. Famous for fine dining Michelin starred restaurants. The city is home to "nearly one thousand of the finest and most diverse haute cuisine restaurants in the world", according to Michelin.
9. So it is evident that to survive in such competitive market it is very important to strategically plan.

FACTORS WHICH MAY IMPACT THE RESTRUTANT LOCATION

1. New York Population
2. New York City Demographics
3. Are there any Farmers Markets, Wholesale markets etc nearby so that the ingredients can be purchased fresh to maintain quality and cost?
4. Are there any venues like Gyms, Entertainmnet zones, Parks etc nearby where floating population is high etc
5. Who are the competitors in that location?
6. Cuisine served / Menu of the competitors
7. Segmentation of the Borough
8. Untapped markets
9. Saturated markets etc The list can go on…

Data 1 : 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.

This dataset exists for free on the web. Link to the dataset is :
https://geo.nyu.edu/catalog/nyu_2451_34572

	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

Data 2 : Farmers Markets data -
https://data.cityofnewyork.us/dataset/DOHMH-Farmers-Markets-and- Food-Boxes/8vwk-6iz2

A farmers' market is often defined as a public site used by two or more local or regional producers for the direct sale of farm products to consumers. In addition to fresh fruits and vegetables, markets may sell dairy products, fish, meat, baked goods, and other minimally processed foods.

	FacilityName	Service Category	Service_Type	Address	Address 2	Borough	ZipCode	Latitude	Longitude	AdditionalInfo	StartDate	EndDate	Monday	Tuesday	Wednesday	Thursday
0	Inwood Park Greenmarket	Farmers Markets and Food Boxes	Farmers Markets	Isham St bet Seaman & Cooper	NaN	Manhattan	10034	40.869009	-73.920320	Open year-round	NaN	NaN	NaN	NaN	NaN	NaN
1	82nd Street Greenmarket	Farmers Markets and Food Boxes	Farmers Markets	82nd St bet 1st & York Aves	NaN	Manhattan	10028	40.773448	-73.948954	Open year-round	NaN	NaN	NaN	NaN	NaN	NaN
3	125th Street Farmers Market	Farmers Markets and Food Boxes	Farmers Markets	125th St & Adam Clayton Powell Jr Blvd	NaN	Manhattan	10027	40.808981	-73.948327	Market open dates: 6/13/2017 to 11/21/2017	06/13/2017	11/21/2017	NaN	10am-7pm	NaN	NaN
4	170 Farm Stand	Farmers Markets and Food Boxes	Farmers Markets	170th St & Townsend Ave	NaN	Bronx	10452	40.840095	-73.916827	Market open dates: 7/5/2017 to 11/22/2017	07/05/2017	11/22/2017	NaN	NaN	2:30pm-6:30pm	NaN
5	175th Street Greenmarket	Farmers Markets and Food Boxes	Farmers Markets	175th St bet Wadsworth Ave & Broadway	NaN	Manhattan	10033	40.845956	-73.937813	Market open dates: 6/29/2017 to 11/30/2017	06/29/2017	11/30/2017	NaN	NaN	NaN	8am-5pm

Data 3 : Data from Wikipedia pages as given below :
New York Population
New York City Demographics
Cuisine of New York city

https://en.wikipedia.org/wiki/New_York_City
https://en.wikipedia.org/wiki/Economy_of_New_York_City
https://en.wikipedia.org/wiki/Portal:New_York_City
https://en.wikipedia.org/wiki/Cuisine_of_New_York_City

	Racialcomposition	2010	1990	1970	1940
0	White	44.0%	52.3%	76.6%	93.6%
1	—Non-Hispanic	33.3%	43.2%	62.9%	92.0%
2	Black or African American	25.5%	28.7%	21.1%	6.1%
3	Hispanic or Latino (of any race)	28.6%	24.4%	16.2%	1.6%
4	Asian	12.7%	7.0%	1.2%	–

Data from foursquare.com

Newyork city geographical coordinates data will be utilized as input for the Foursquare API, that will be leveraged to provision venues information for each neighborhood. We will use the Foursquare API to explore neighborhoods in New York City. The below is image of the Foursquare API data.

	Neighborhood	NeighborhoodLatitude	NeighborhoodLongitude	Venue	VenueLatitude	VenueLongitude	VenueCategory
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	Sam's Pizza	40.879435	-73.905859	Pizza Place
4	Marble Hill	40.876551	-73.91066	Loeser's Delicatessen	40.879242	-73.905471	Sandwich Place

ANALYTICAL APPROACH

New York city neighborhood has a total of 5 boroughs and 306 neighborhoods
PART 1 - Clustering of Manhattan and Brooklyn
PART 2 - Clustering of Bronx, Queens and Staten Island.
Only restaurant data is filtered from foursquare.com venues data and utilized for this project.
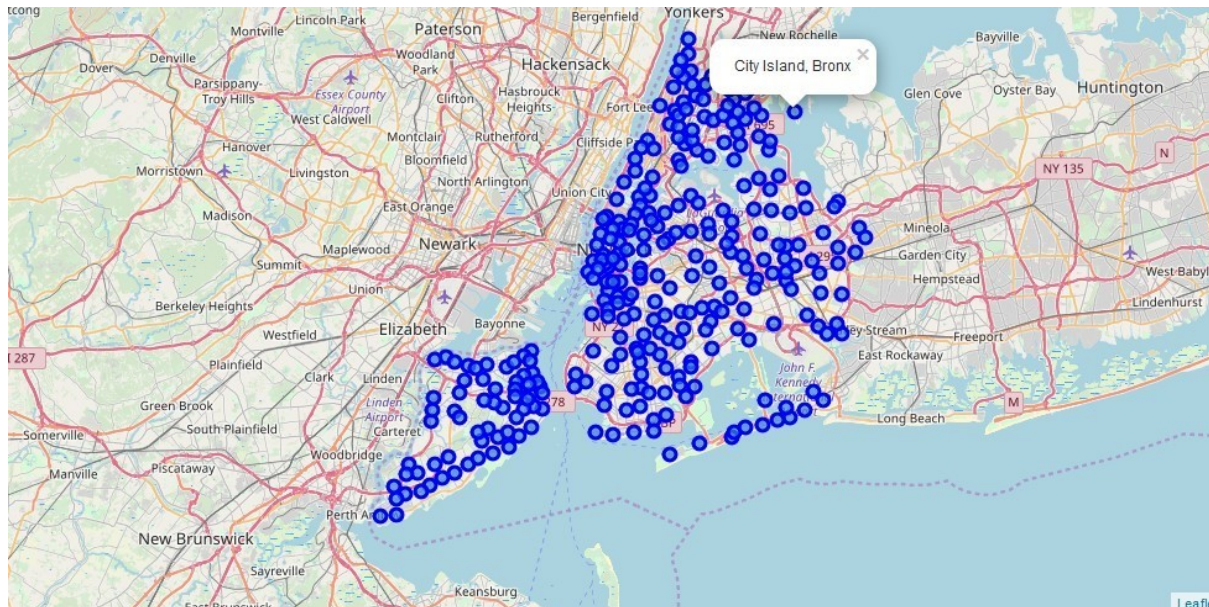
This is done because of the following Exploratory data analysis.

METHODOLOGY 1:-

Data 1- New york city Geographical Coordinates Data.

- Load the data and explore data - newyork_data.json
- Transform the data of nested python dictionaries into a pandas dataframe.
- Dataframe contains the geographical coordinates of New York city neighborhoods.
- Data will used to get Venues data from Foursquare.
- Geopy and folium libraries used to create a map of New York city with neighborhoods superimposed on top.
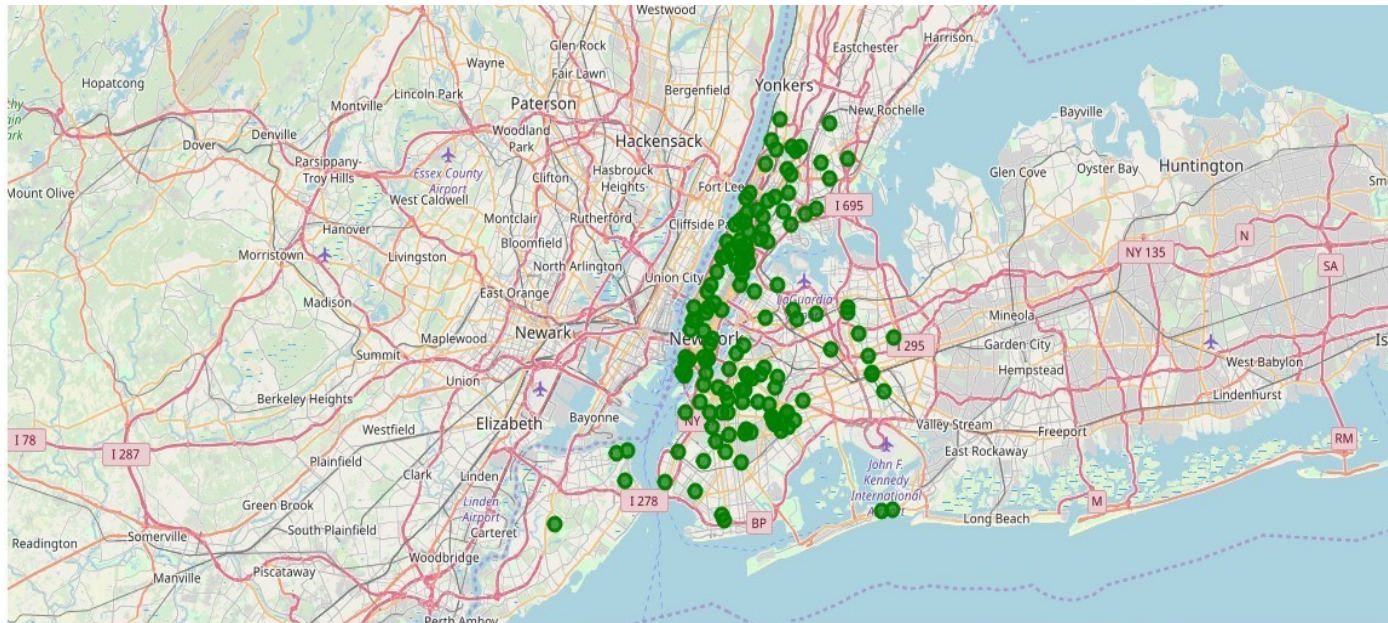
METHODOLOGY 2

Data 2- DOHMH Farmers Markets and Food Boxes dataset.
In this we will be using the data of Farmers Markets
There are totally 144 Farmers Markets in New York city.
Highest number are in Manhattan and Brooklyn.And lowest in Queens, Bronx and
Staten Island.

Farmers Market visualization-New York City

METHODOLOGY 3

This data has been manually prepared. Data is taken from Wikipedia page
- https://en.wikipedia.org/wiki/Cuisine_of_New_York_City
Data used to create word cloud.

NEW YORK CITY CUISINE : Most Preferred Food in New York City –Italian, Purto Rican, Mexican, Jewish, Indian, Pakistani & Dominican

BROOKLYN CUISINE -Most Preferred Food in Brooklyn is – Italian, Purto Rican & Mexican

MANHATTAN CUISINE - Most Preferred Food in Manhattan is – Italian, American, Puerto Rican and Indian.

QUEENS CUISINE - Most Preferred Food in Queens is – Indian, Irish, Pakistani and Mexican.

THE BRONX CUISINE - Most Preferred Food in The Bronx is – Italian, Puerto Rican, Albanian and Dominican.

METHODOLOGY FOURSQUARE.COM

Newyork city geographical coordinates data has be utilized as input for the Foursquare API, that has been leveraged to provision venues information for each neighborhood.
We used the Foursquare API data to explore neighborhoods in New York City.
Using the geographical coordinates of each neighborhood foursquare API calls are made to get top 200 venues in a radius of 1000 meters

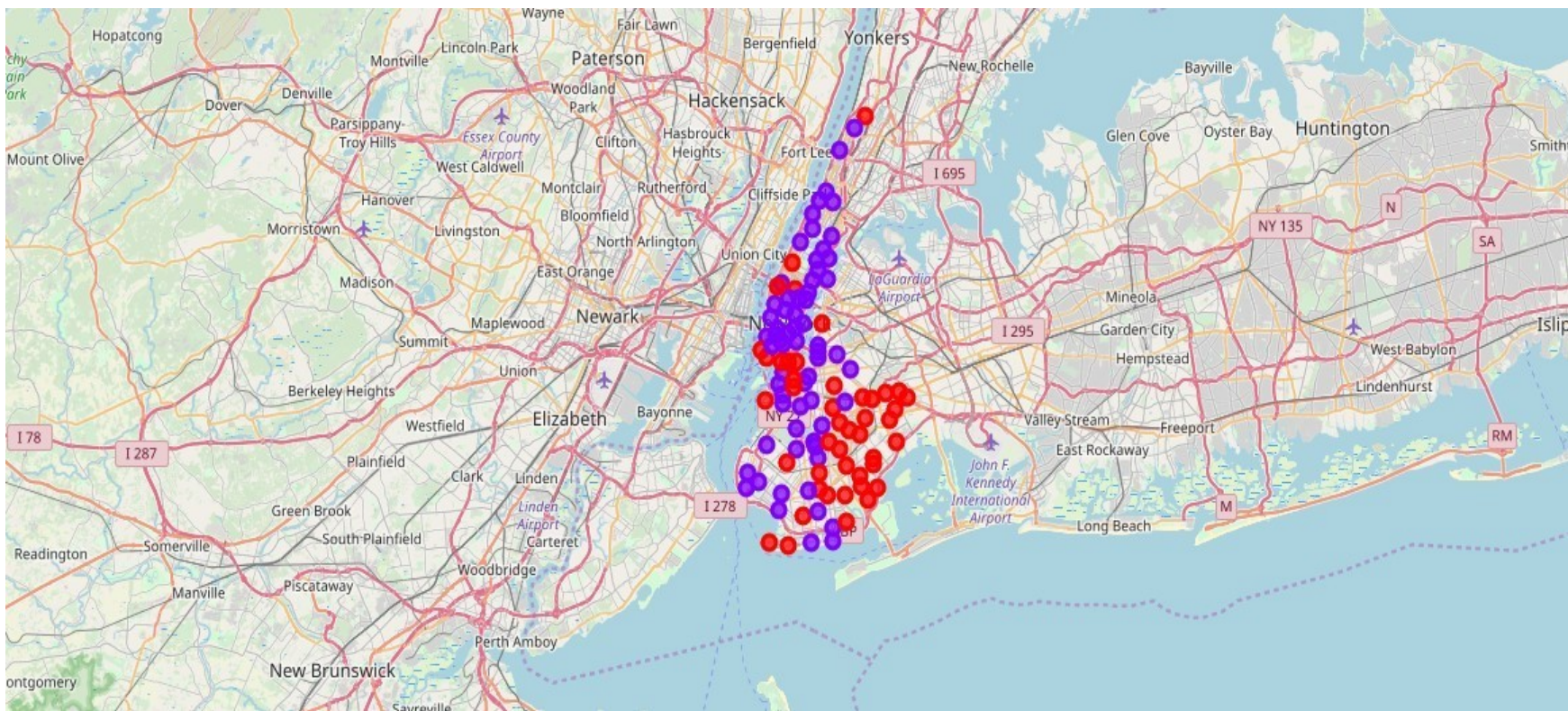PART – 1 Brooklyn and Manhattan
PART – 2 Bronx, Queens and Staten Island

Cluster0 : The Total and Total Sum of cluster0 has smallest value. It shows that the market is not saturated.

Cluster1 : The Total and Total Sum is very high. Lot of competition. Saturated neighborhoods.

DISCUSSION:

1.   There is scope to increase Farmers markets in Bronx, Queens and Staten Island.
2.   There is scope to explore cuisines of various countries in Bronx, Queens and Staten Island.
3.   In Manhattan and Brooklyn restaurants of cuisines of many countries are available. So if risk can be taken with great menu on board. It also shows people love eating cuisines of various countries.

CONCLUSION:

This analysis is performed on limited data. This may be right or may be wrong. But if good amount of data is available there is scope to come up with better results. If there are lot of restaurants probably there is lot of demand. Brooklyn and Manhattan has high concentration of restaurant business. Very competitive market. Bronx, Queens and Staten Island also has good number of restaurants but not as many as required. So this can be explored.

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