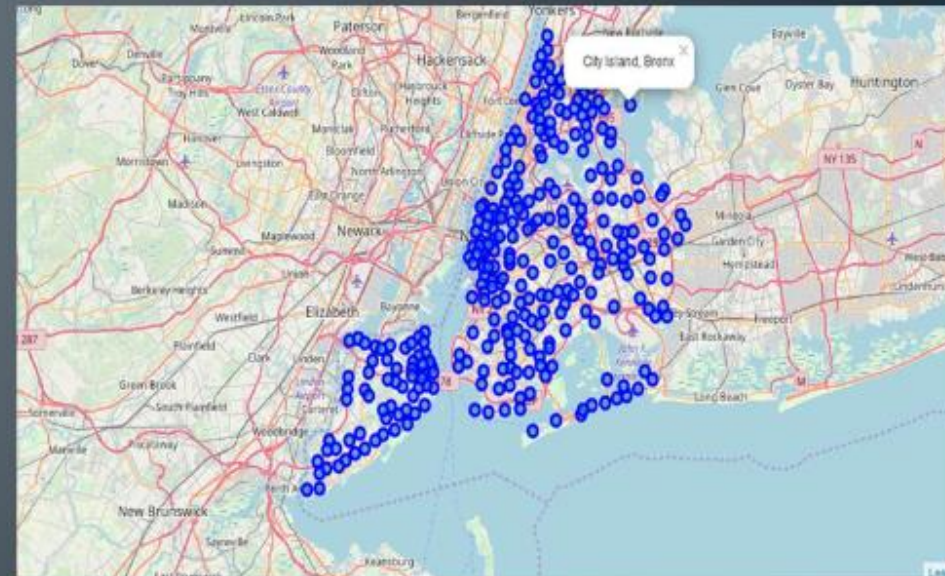


INTRODUCTION

- New York city review for XYZ Company.
- Optimum location for new Restaurant business
- **Business Problem :**
 - Choice of first neighborhood to start restaurant business.
 - Easy to replicate.
 - Low competition
 - High demand
 - Choice of Menu
- **Success Criteria :**
 - Best neighborhood which meets above criteria.



NEW YORK CITY - FACTS

- 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.



NEW YORK CITY – BUSINESS ENVIRONMENT

- Market is highly competitive
- Highly developed city so cost of doing business is also one of the highest
- New business venture or expansion needs to be analysed carefully
- One should strategically targeting the market in order to –
 - This will help in reduction of risk.
 - The Return on Investment will be reasonable.

NEW YORK CITY - CUISINE

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.

- **Central and Eastern European immigrants**, especially Jewish immigrants - bagels, cheesecake, hot dogs, knishes, and delicatessens
- **Italian immigrants** - New York-style pizza and Italian cuisine
- **Jewish immigrants and Irish immigrants** - pastrami and corned beef
- **Chinese and other Asian restaurants**, sandwich joints, trattorias, diners, and coffeehouses are ubiquitous throughout the city
- **Mobile food vendors** - Some 4,000 licensed by the city
- **Middle Eastern foods** such as falafel and kebabs examples of modern New York street food
- 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.
- So it is evident that to survive in such competitive market it is very important to strategically plan.

FACTORS TO STUDY TO DECIDE ON RESTAURANT LOCATION

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

DATA DESCRIPTION - 1

- **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 DESCRIPTION - 2

- **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	Islem St bet Seaman & Cooper	NaN	Manhattan	10034	40.889009	-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: 5/13/2017 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 DESCRIPTION - 3

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

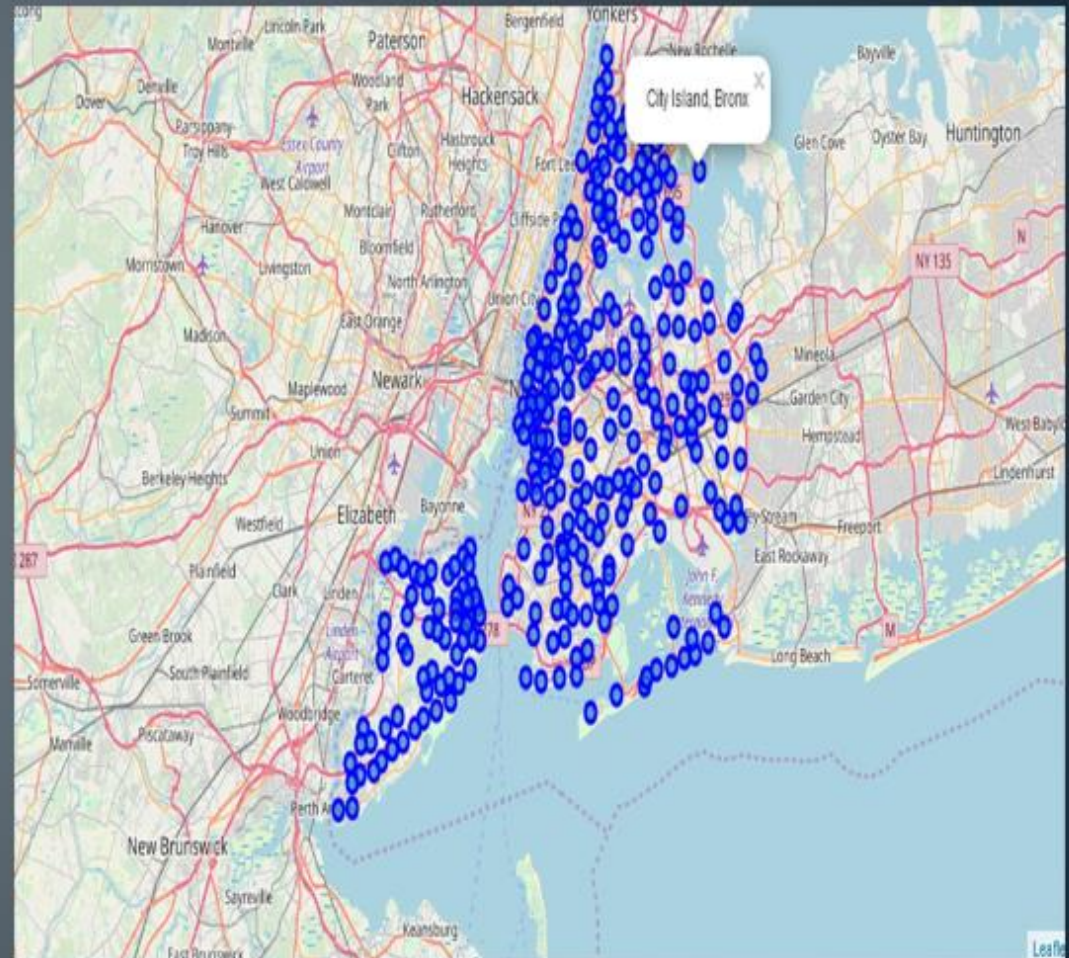
https://en.wikipedia.org/wiki/Cuisine_of_New_York_City

	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%	—

METHODOLOGY - 1

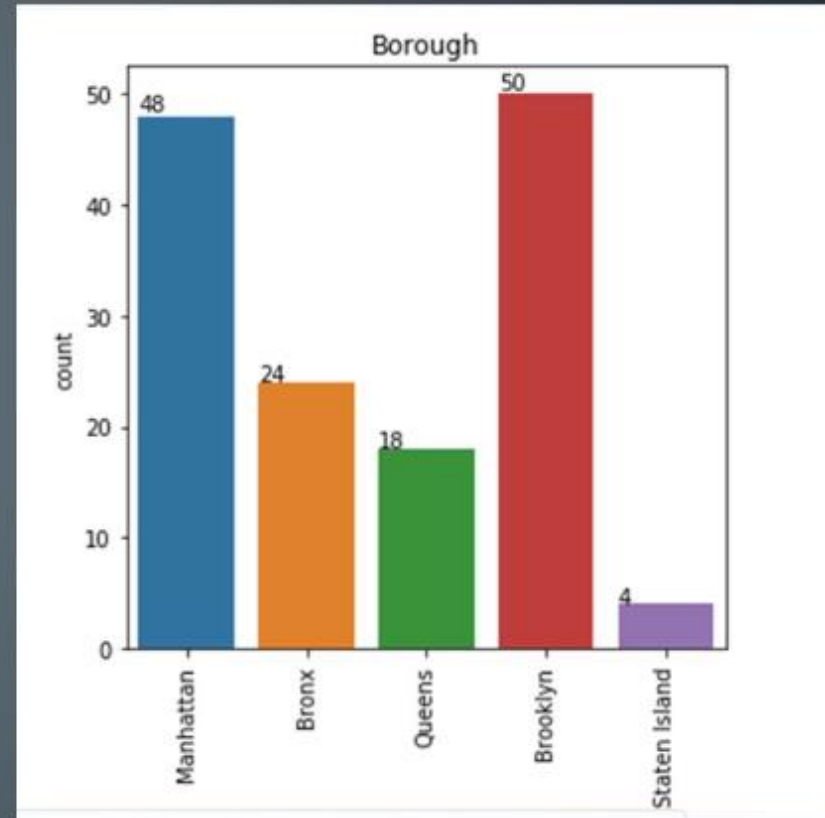
Data 1- New York city Geographical Coordinates Data.

- 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 be 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.



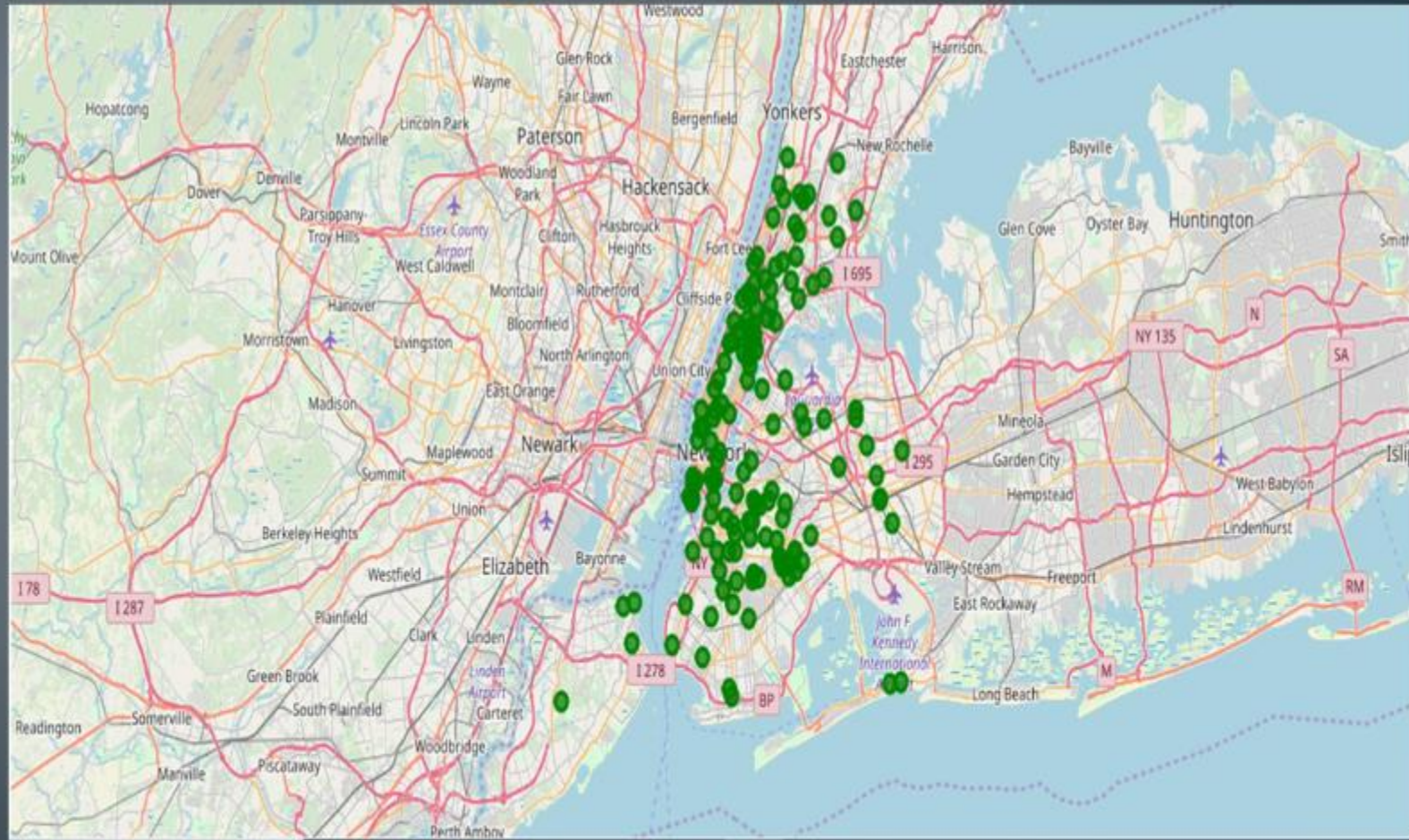
METHODOLOGY - 2

- **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.



METHODOLOGY - 2

- **Farmers Market visualisation-New York City**



METHODOLOGY - 3

- **Data 3** : To analyze New York city Population, Demographics and Cuisine , scrapped the data from Wikipedia pages given above in the data section.
- We used BeautifulSoup python library.
- Beautiful Soup is a Python package for parsing HTML and XML documents (including having malformed markup, i.e. non-closed tags, so named after tag soup).
- It creates a parse tree for parsed pages that can be used to extract data from HTML, which is useful for web scraping

METHODOLOGY – 3 - New York Population

- Manhattan (New York County) is the geographically smallest and most densely populated borough.
- Manhattan's (New York County's) population density of 72,033 people per square mile (27,812/km²) in 2015 makes it the highest of any county in the United States and higher than the density of any individual American city.
- Brooklyn (Kings County), on the western tip of Long Island, is the city's most populous borough.
- Queens (Queens County), on Long Island north and east of Brooklyn, is geographically the largest borough.

	Borough	County	Estimate_2017	square_miles	square_km	persons_sq_mi	persons_sq_km
0	Manhattan	New York	1,664,727	22.83	59.13	72,033	27,826
1	The Bronx	Bronx	1,471,160	42.10	109.04	34,653	13,231
2	Brooklyn	Kings	2,648,771	70.82	183.42	37,137	14,649
3	Queens	Queens	2,358,582	108.53	281.09	21,460	8,354
4	Staten Island	Richmond	479,458	58.37	151.18	8,112	3,132
5		City of New York	8,622,698	302.64	783.83	28,188	10,947
6		State of New York	19,849,399	47,214	122,284	416.4	159

METHODOLOGY – 3 - New York City Demographics

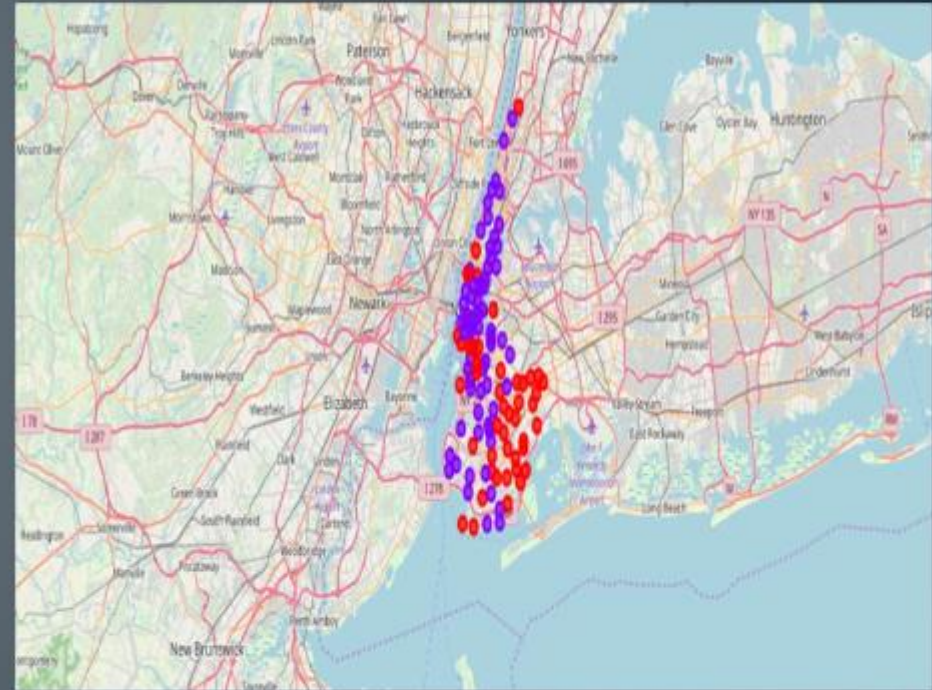
- New York City is the most populous city in the United States , with an estimated record high of 8,622,698 residents as of 2017, incorporating more immigration into the city than outmigration since the 2010 United States Census.
- The racial composition is as given below. This is the reason New York city has restaurants serving cuisine from many countries such as India, Africa, Japan etc. This also increases the scope for restaurants business in 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%	-

RESULT

PART – 1 Brooklyn and Manhattan

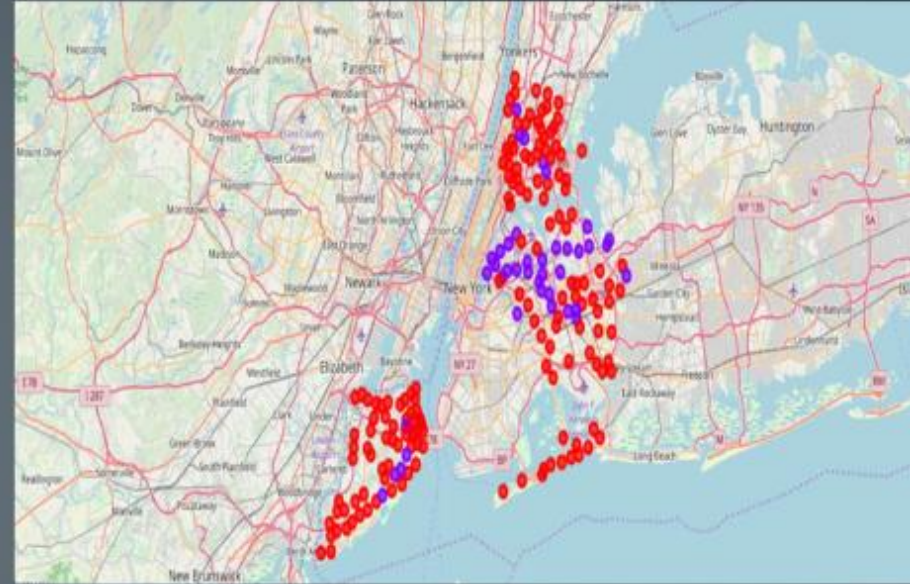
- **Segmenting and Clustering Neighborhoods**
- **Cluster0** : The Total and Total Sum of cluster0 has smallest value. It shows that the market is not saturated.
- **Cluster1** : The Total and Total Sum is very high. Lot of competition. Saturated neighborhoods.



RESULT

PART – 2 Bronx , Queens and Staten Island

- **Segmenting and Clustering Neighborhoods**
- **Cluster0** : The Total and Total Sum of cluster0 has smallest value. It shows that the market is not saturated. There are untapped markets.
- **Cluster1** : The Total and Total Sum is very high. Lot of competition. Saturated neighborhoods.



	Borough	Neighborhood	Latitude	Longitude	Total	Cluster_Labels
0	Staten Island	Todt Hill	40.597069	-74.111329	0	0
1	Staten Island	Port Ivory	40.639683	-74.174645	0	0
2	Staten Island	Bloomfield	40.605779	-74.187256	0	0

CONCLUSION

- Analysis performed on limited data
- Re-run program with updated information
- **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 neighbourhood or restaurant type mentioned like Indian Restaurant, analysis can be checked. A venue with lowest risk and competition can be identified

