BATTLE OF NEIGHBOURHOOD'S

OPENING A RESTAURANT

INTRODUCTION

- New York City is one of the most densely populated cities with 100+ cultures .

- It is one of the best place's to start a restaurant business.

- As the city is famous for tourist attractions, world trade, media ,legal services , insurance , fashion industry, advertising and many other activities. This means that there is highly competitive market which demands high quality services, people even pay for the services however costly it might cost them.

BUSINESS PROBLEM

- Populated area.
- Easy to thrive
- Economical
- Low Competition
- High Demand
- Take away
- Easy to eat on the run.

BUSINESS ENVIRONMENT

- Cost of doing business is expensive.
- Highly Competitive.
- Business ventures need to be analyzed properly.
- Cost of obtaining produce should be low and should support local farmers.
- Unknown Risks.
- Business should be planned such that the business is profitable.

CRUSINES

- Asian Cruisne – It targets the Indian and Chinese Population at the most .Food such as curries, noodles and rice being their main staple.
- Central and Eastern European immigrants, especially Jewish immigrants – breads, bagels, cheesecake, hot dogs.
- Italian immigrants – Targets the overall audience as it is a comforting food -Pizza and Pasta are really well known.
- Jewish immigrants and Irish immigrants - pastrami and corned beef
- Mobile food vendors - 2,000~ licensed by the city
- Middle Eastern – Its mostly for people who are always on the rush and would like to grab a snack on the way. Falafel , Doners and Kebabs are the highlights.
- Michelin Star restaurants which are fine dining restaurants provide excellent quality of food and various al carte specialties.

FACTORS TO DECIDE LOCATION

- NYC Population.
- NYC Demographics.
- Cost of obtaining ingredients, freshness of ingredients, organic and many other factors to make in outstanding from the others.
- Prime location where a lot of people are expected to pass though and timings where people show up mostly.
- Surrounding Competitors.
- Segmentation of the Borough
- Cost of renting or owning a place.
- Initial investments.

NYCINFO – Dataset 1

- There are currently 5 boroughs in the City of NYC.This data set provides information on Population, GDP, Land Area and Density. The data was obtained from Wikipedia.

- https://en.wikipedia.org/wiki/Demographics_of_New_York_City

Out[48]:

	New York City's five boroughsvte\r\n	Jurisdiction\r\n	Population\r\n	Gross Domestic Product\r\n	Land area\r\n	Density\r\n	Borough	County	Estimate (2019) [152]	billions(US$) [153]	per capita(US$)	square miles	squa
0	The Bronx\r\n	\r\n Bronx\r\n	1,418,207\r\n	42.695\r\n	30,100\r\n	42.10\r\n	109.04\r\n	33,867\r\n	13,006\r\n	NaN	NaN	NaN	
1	Brooklyn\r\n	\r\n Kings\r\n	2,559,903\r\n	91.559\r\n	35,800\r\n	70.82\r\n	183.42\r\n	36,147\r\n	13,957\r\n	NaN	NaN	NaN	
2	Manhattan\r\n	\r\n New York\r\n	1,628,706\r\n	600.244\r\n	368,500\r\n	22.83\r\n	59.13\r\n	71,341\r\n	27,544\r\n	NaN	NaN	NaN	
3	Queens\r\n	\r\n Queens\r\n	2,253,858\r\n	93.310\r\n	41,400\r\n	108.53\r\n	281.09\r\n	20,767\r\n	8,018\r\n	NaN	NaN	NaN	
4	Staten Island\r\n	\r\n Richmond\r\n	476,143\r\n	14.514\r\n	30,500\r\n	58.37\r\n	151.18\r\n	8,157\r\n	3,150\r\n	NaN	NaN	NaN	
5	City of New York	8,336,817	842.343	101,000	302.64	783.83	27,547	10,636\r\n	NaN	NaN	NaN	NaN	
6	State of New York	19,453,561	1,731.910	89,000	47,214	122,284	412	159\r\n	NaN	NaN	NaN	NaN	

TypesOfCuisine - Dataset 2

- This dataset has all the restaurant details and the necessary information which has the location, building, street, phone, cuisine description.

- https://www.kaggle.com/new-york-city/nyc-inspections/data

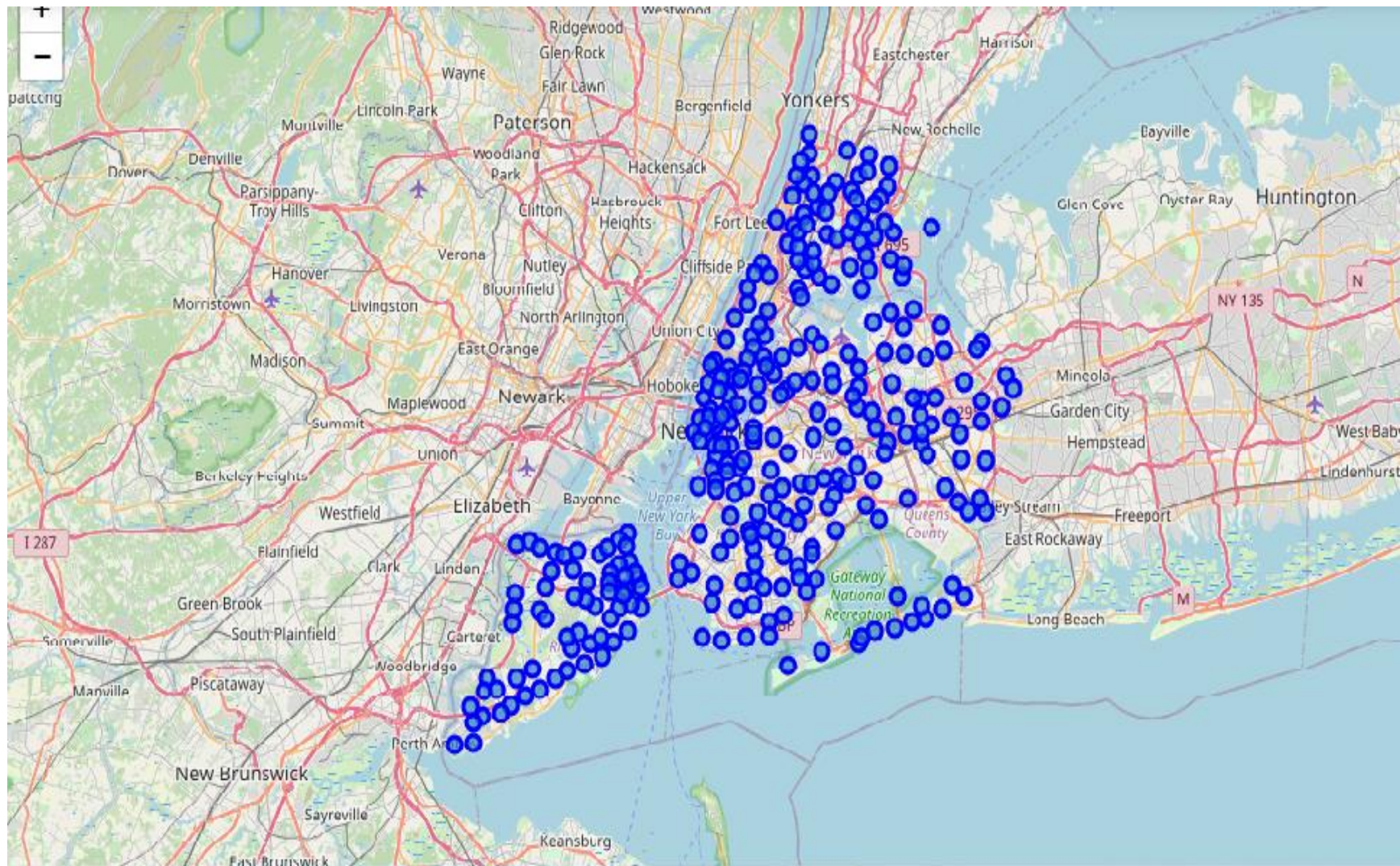|	CAMIS	DBA	BORO	BUILDING	STREET	ZIPCODE	PHONE	CUISINE DESCRIPTION	INSPECTION DATE	ACTION	VIOLATION CODE	VIOLATION DESCRIPTION
0	40511702	NOTARO RESTAURANT	MANHATTAN	635	SECOND AVENUE	10016.0	2126863400	Italian	6/15/2015	Violations were cited in the following area(s).	02B	Hot food item not held at or above 140Â° F.
1	40511702	NOTARO RESTAURANT	MANHATTAN	635	SECOND AVENUE	10016.0	2126863400	Italian	11/25/2014	Violations were cited in the following area(s).	20F	Current letter grade card not posted.
2	50046354	VITE BAR	QUEENS	2507	BROADWAY	11106.0	3478134702	Italian	10/3/2016	Violations were cited in the following area(s).	10F	Non-food contact surface improperly constructe...
3	50061389	TACK'S CHINESE TAKE OUT	STATEN ISLAND	11C	HOLDEN BLVD	10314.0	7189839854	Chinese	5/17/2017	Violations were cited in the following area(s).	02G	Cold food item held above 41Â° F (smoked fish ...
4	41516263	NO QUARTER	BROOKLYN	8015	5 AVENUE	11209.0	7187019180	American	3/30/2017	Violations were cited in the following area(s).	04M	Live roaches present in facility's food and/or...

Market – Dataset 3

- It contains all the information on the farmers market which are present in the City of NYC .It gives information on about how often they occur and the different location they are present.

- This data was obtained from NYCOpenData.

- https://data.cityofnewyork.us/dataset/DOHMH-Farmers-Markets/8vwk-6iz2

Venue's – Dataset 4

- Numerous data factors are present in this, such as the location, neighborhood its present in , venue location and category.

- This helps us determine how many restaurants are present in the particular area and where likely a new one should be opened.

- https://api.foursquare.com/v2/venues/explore?client_id=C4T1QHZIFG32BCDRYUSJDDPWMSJXLDV0X2IUV5O55IDHBL20&client_secret=54MBDXFWRDOSW5YV4WDL1M13FUNF5YAYUZJT4EVDPVSXKWME&v=20181218&ll=40.7127281,-74.0060152
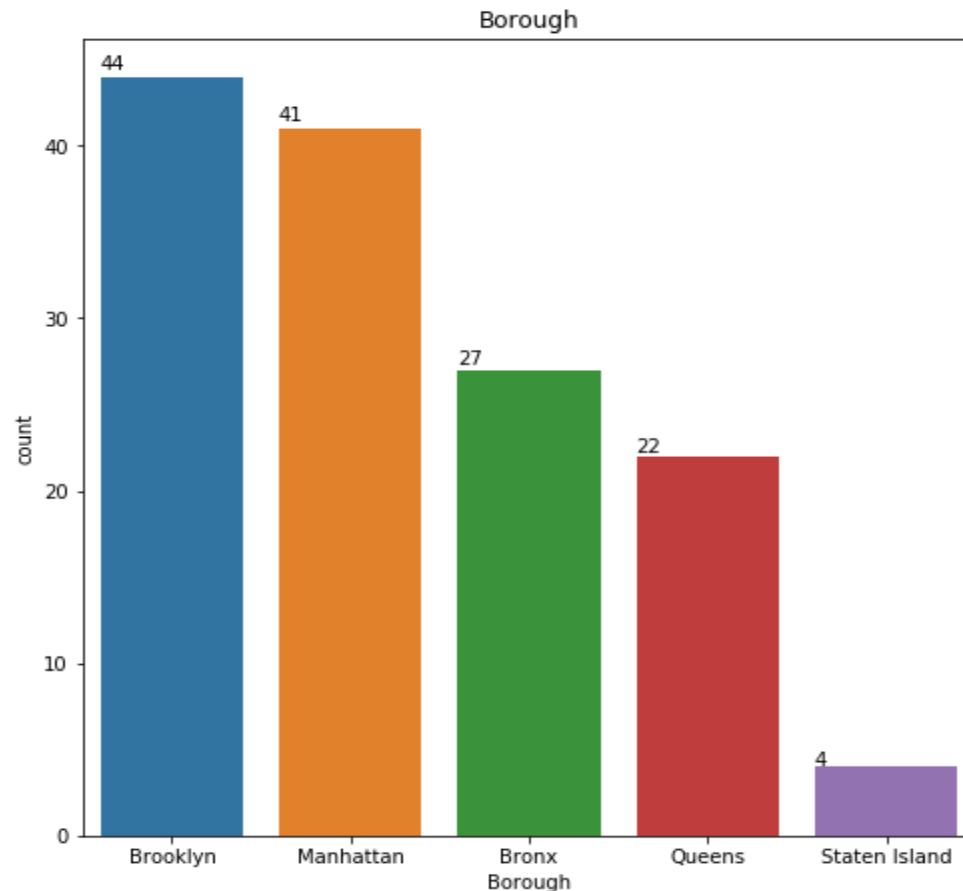
Graphical views of NYC

- Newyork_data.json was loaded and explored .
- The python dictionaries were transformed into panda dataframes.
- Geopy was used collect and display all the different neighborhood in NYC.
- Dataframe had the coordinates of different neighborhood present.

Farmers Market in NYC

- There are totally 138 Farmer markets in the city .
- A total of 41 markets are present in Manhattan.

Borough

Days of operation

- As we analyze the data ,we find that no places are open through out the week .

- So we need to find 2 or more places which will be open through out the week combined as it is necessary to get fresh produce.

	Days_operation
Saturday	39
Wednesday	22
Sunday	18
Thursday	16
Friday	11
Tuesday	10
Wednesday & Saturday	4
Tuesday & Friday	3
Wednesday & Sunday	1
Tuesday & Thursday	1
Tuesday &\n Saturday	1
Monday,\nWednesday,\nFriday & Saturday	1
Tuesday, Thursday & Saturday	1
Thursday & Saturday	1
Wednesday &\n Saturday	1
Tuesday &\nFriday	1
Wednesday,\nThursday & Friday	1
Monday	1
Thursday & Sunday	1
Tuesday &\nThursday	1

- We also need to find a such places which are open through out the year as these places have availability of all produces. Only 28 places in the whole of NYC are open Through out the year.

Open_year_around	
No	109
Yes	28

K-means Clustering

```
In [83]:  # set number of clusters
          kclusters = 2

          BM_grouped_clustering = BM_restaurant_grouped.drop('Neighborhood', 1)

          # run k-means clustering
          kmeans = KMeans(n_clusters=kclusters, random_state=0).fit(BM_grouped_clustering)

          # check cluster labels generated for each row in the dataframe
          kmeans.labels
```

```
Out[83]:  array([1, 0, 1, 0, 1, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 1, 1,
                 1, 0, 0, 0, 1, 0, 0, 1, 0, 1, 0, 1, 1, 0, 0, 1, 1, 0, 1, 1, 0, 0, 0,
                 1, 1, 0, 0, 1, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 1, 0, 1, 1, 0, 0, 0,
                 1, 0, 0, 0, 1, 1, 0, 1, 1, 0, 1, 0, 1, 1, 1, 1, 0, 0, 1, 0, 0, 1, 1,
                 1, 0, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1, 1, 1, 1, 0, 1], dtype=int32)
```

```
In [84]:  BM_results = pd.DataFrame(kmeans.cluster_centers_)
          BM_results.columns = BM_grouped_clustering.columns
          BM_results.index = ['cluster0','cluster1']
          BM_results['Total Sum'] = BM_results.sum(axis = 1)
          BM_results
```

Out[84]:

	African Restaurant	American Restaurant	Arepa Restaurant	Argentinian Restaurant	Asian Restaurant	Australian Restaurant	Austrian Restaurant	Brazilian Restaurant	Burmese Restaurant
cluster0	0.044444	1.088889	0.022222	0.022222	0.155556	-1.387779e-17	-1.387779e-17	-1.734723e-18	-1.734723e-18
cluster1	0.076923	2.153846	0.107692	0.092308	0.676923	1.230769e-01	1.230769e-01	1.538462e-02	1.538462e-02

Outcome

- So from analyzing the above data ,the plan is open a Kathi Roll place which is a Indian fast food restaurant.
- This will be located at Civic Center Region as the Town hall is present there and is close to the Subway Station
- The Takeaway part makes is easy as most of the people in NYC are on the run.
- IT can be eaten on the way and is filling.

RESULTS

- From the above data which has been analyzed,Cluster 0: Shows the entire restaurant business which has the lowest value.

- Cluster 1 : Shows the entire restaurant business which has the highest .

- Green Day market and Tucker Square market are the most likely and best place in Manhattan to get Produce from.

- It is easy to open a Kathi Roll place in Civic Center Region as Kathi roll is a easy hand food and isn't messy as all the people in NYC are always in a rush and this is a good take away food or on the run food.