

Battle of Neighborhoods : Nature's Platter

Coursera Capstone Project

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Introduction

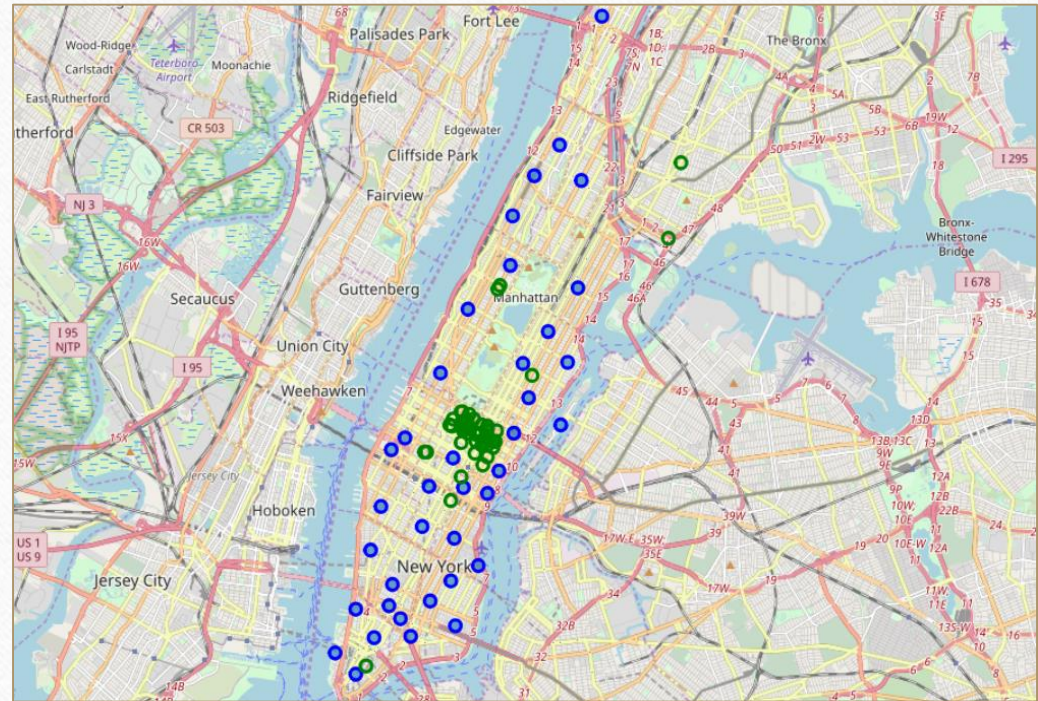
- Manhattan – the financial capital of New York.
- Nature's Platter – Go Organic is an established organic eatery and grocery store.
- Nature's Platter is keen on opening its franchise in Manhattan, targeting the financial firms' employees
- Explore financial firms in Manhattan, different types of eateries around them and organic eateries in the firms' neighborhood

Data : Requirements & Collection

- Location Data of New York and Manhattan – To visualize and explore the locations and cluster them, from https://geo.nyu.edu/catalog/nyu_2451_34572.
- Venues data in Manhattan (like financial firms and eateries) – from Foursquare location provider.
- Locate and visualize Manhattan on map using folium library

Methodology

- Exploratory Data Analysis (EDA):
 - Extract financial firms in Manhattan within a radius of 10000m.
 - Visualize the financial firms and the neighborhoods in Manhattan
 - Blue circles depict the neighborhoods in Manhattan and green circles represent the financial firms.



Methodology

- Exploratory Data Analysis (EDA) – Explore eatery categories
 - Extract the different eateries around each of the financial firms, along with the name, category and geographical co-ordinates.
 - Around 35 unique categories of eateries are located.

	Name	Firm Latitude	Firm Longitude	Eatery	Eatery Latitude	Eatery Longitude	Eatery Category
0	Fidelity Investment	40.773029	-73.957936	Ateaz Organic Coffee & Tea	40.775124	-73.953813	Café
1	Fidelity Investment	40.773029	-73.957936	Duke Eatery	40.756797	-73.975107	Food & Drink Shop
2	Fidelity Investment	40.773029	-73.957936	Cock & Bull British Pub and Eatery	40.755946	-73.980621	Pub

Methodology

- EDA – Examine the most commonly visited eatery categories for each financial firm.
- This is done by determining the frequency of occurrence of each eatery category.

	Name	1st Most Common Eatery	2nd Most Common Eatery	3rd Most Common Eatery	4th Most Common Eatery	5th Most Common Eatery
0	1919 Investment Counsel	Café	Salad Place	Restaurant	Mediterranean Restaurant	Deli / Bodega
1	AC Investment Management	Café	Restaurant	Mediterranean Restaurant	Deli / Bodega	American Restaurant
2	Al Rayyan Tourism Investment Company	Café	Salad Place	Restaurant	Mediterranean Restaurant	Deli / Bodega
3	Apollos Partners NYC office (Executive Search ...	Food Truck	Fruit & Vegetable Store	Café	Market	Deli / Bodega
4	Aquamarine Investment Partners	Deli / Bodega	American Restaurant	Café	Mediterranean Restaurant	Food & Drink Shop

Methodology

- EDA : Explore and extract the organic eateries in each firm's neighborhood.

Name	1st Most Common Org Eatery	2nd Most Common Org Eatery	3rd Most Common Org Eatery	4th Most Common Org Eatery	5th Most Common Org Eatery	6th Most Common Org Eatery	7th Most Common Org Eatery	8th Most Common Org Eatery	9th Most Common Org Eatery	10th Most Common Org Eatery
1919 Investment Counsel	Ateaz Organic Coffee & Tea	Bean & Bean Organic Coffee	Smokey Burger Organic	Chelsea Organic	Organic Mexican Food Truck	The Organic Salad	Vspot Organic	Jahlookova Natural Organic Health Mart	Ali Baba Organic Marketplace	Central Park Organic Deli Grocery
AC Investment Management	Ateaz Organic Coffee & Tea	Bean & Bean Organic Coffee	Smokey Burger Organic	Chelsea Organic	Organic Mexican Food Truck	The Organic Salad	Vspot Organic	Jahlookova Natural Organic Health Mart	Ali Baba Organic Marketplace	Central Park Organic Deli Grocery
Al Rayyan Tourism Investment Company	Ateaz Organic Coffee & Tea	Bean & Bean Organic Coffee	Smokey Burger Organic	Chelsea Organic	Organic Mexican Food Truck	The Organic Salad	Vspot Organic	Jahlookova Natural Organic Health Mart	Ali Baba Organic Marketplace	Central Park Organic Deli Grocery
Apollos Partners NYC office (Executive Search ...	NYC Healthy Bites - Organic Hot Dogs	Ateaz Organic Coffee & Tea	Central Park Organic Deli Grocery	Creative Organic Foods Store	Organic Fruit Shakes & Smoothies	Jahlookova Natural Organic Health Mart	Mom & Pop's Organic Market	Ali Baba Organic Marketplace	Bean & Bean Organic Coffee	Chelsea Organic
Aquamarine Investment Partners	Ateaz Organic Coffee & Tea	Bean & Bean Organic Coffee	Smokey Burger Organic	Chelsea Organic	Organic Mexican Food Truck	Olives Organic Market	The Organic Salad	Vspot Organic	Jahlookova Natural Organic Health Mart	Ali Baba Organic Marketplace

Methodology

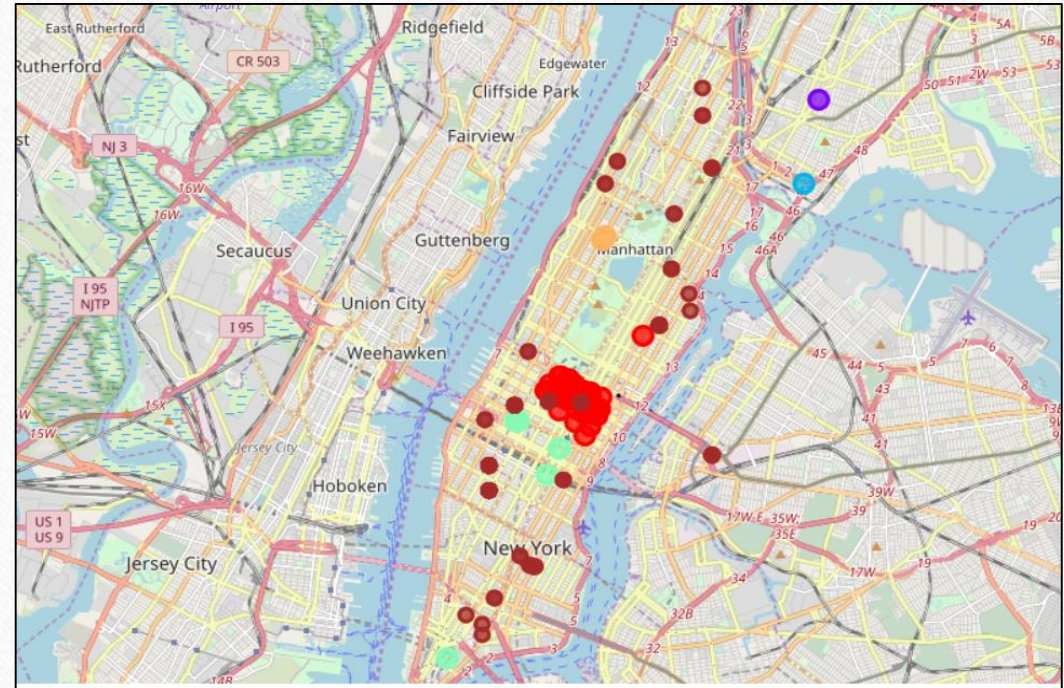
- k -Means Clustering – Financial Firms
 - Type of partition-based clustering of the unsupervised machine learning algorithms
 - Divides data into k non-overlapping subsets without any internal cluster structure.
 - k -means clustering is done using the k -means clustering algorithm from the scikit-learn library
 - Data for clustering the firms – Financial firms data with frequency of each eatery category.
 - Financial firms are clustered into 5 clusters/groups.

Methodology

- Clustering the financial firms
 - Cluster labels are generated – 0,1,2,3,4.
 - Firms are clustered and structured into a data-frame along with their geographical coordinates, most common eatery categories and the cluster labels
 - Clusters are visualized on the map using folium library

Results

- Clusters are visualized on the map along with the organic eateries' locations.
- The clusters are in red, sear, light orange, light blue and purple.
- Brown circles represent the organic eateries.



Conclusion

- Surveyed the financial firms in Manhattan and explored the eateries around.
- Identified the organic eateries around each firm
- Investigated the most commonly visited eatery categories and organic eateries.
- The study helps Nature's Platter team to decide on whether franchise in the location is feasible, the menu and items that would attract the customers.
- Assists the Nature's Platter team in their market research and enables them in deciding their business strategy for the target location and audience.