The Battle of Neighborhoods

New York City – Manhattan: Food Market

Introduction

- Manhattan: core of New York City
- High competition food market – food diversity
- In this project, we will:
  - Provide the overview of food market environment in Manhattan
  - Identify top common types of restaurant
  - Help people who try to open one restaurant in Manhattan

Data

- In this project, we will basically use:
  - New York City Dataset
    - https://geo.nyu.edu/catalog/nyu_2451_34572
    - Show the neighborhoods that exist in each of five boroughs in New York with its latitude and longitude

	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

- In this project, we will basically use:
  - Foursquare API databaset
    - https://geo.nyu.edu/catalog/nyu_2451_34572
    - Show the food category in New York

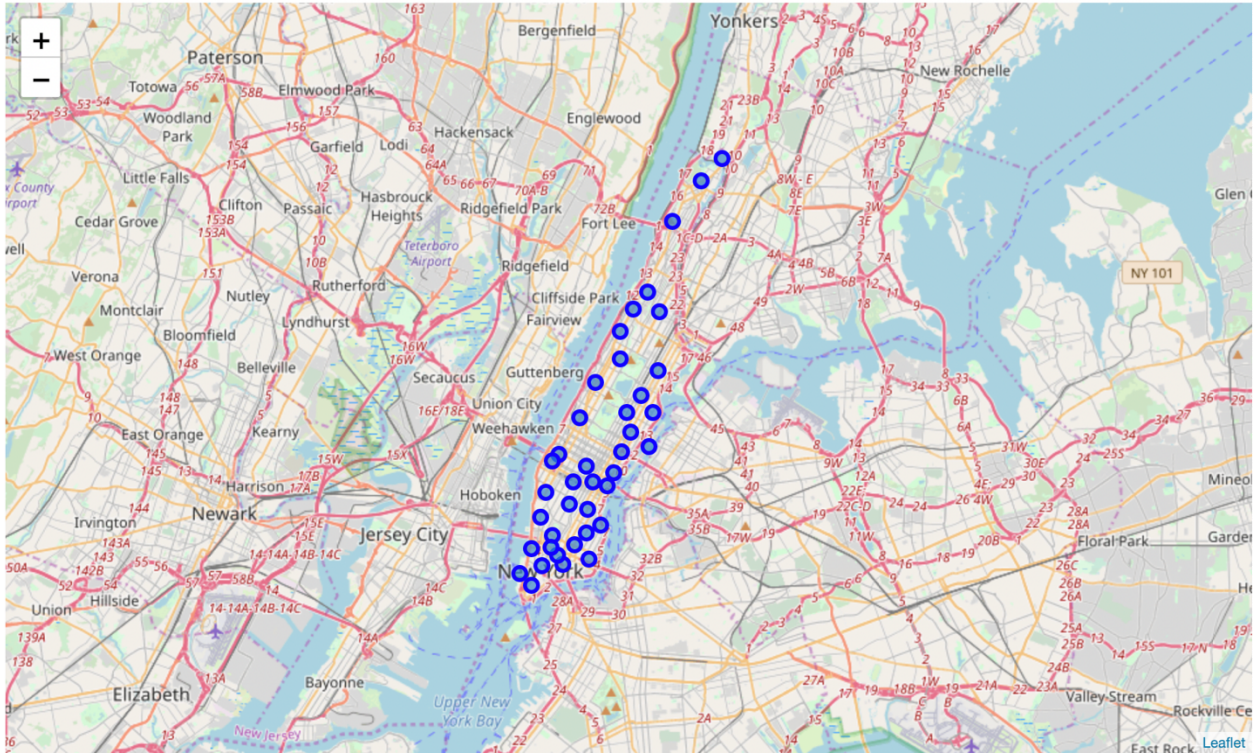
	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Marble Hill	40.876551	-73.91066	PeraBell Food Bar	40.765781	-73.013731	American Restaurant
1	Marble Hill	40.876551	-73.91066	Aldi Food Market	40.778311	-73.033230	Supermarket
2	Marble Hill	40.876551	-73.91066	Delfiore Pizza & Food Co.	40.765692	-73.013344	Italian Restaurant
3	Marble Hill	40.876551	-73.91066	Best Meal Chinese Food	40.765382	-73.013084	Chinese Restaurant
4	Marble Hill	40.876551	-73.91066	Smith Haven Mall Food Court	40.863369	-73.129668	Food Court

Methodology

- Use geopy library to get the latitude and longitude coordinate
- Use the folium help to visualize the data by creating the map
- Clustering Algorithm

Methodology

- Map of Manhattan



Methodology

- Cluster

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Marble Hill	Food Truck	Food Court	Supermarket	Chinese Restaurant	American Restaurant	Southern / Soul Food Restaurant	Restaurant	Other Repair Shop	Organic Grocery	Museum
1	Chinatown	Food Truck	Food Court	Supermarket	Chinese Restaurant	American Restaurant	Southern / Soul Food Restaurant	Restaurant	Other Repair Shop	Organic Grocery	Museum
2	Washington Heights	Food Truck	Food Court	Supermarket	Chinese Restaurant	American Restaurant	Southern / Soul Food Restaurant	Restaurant	Other Repair Shop	Organic Grocery	Museum
3	Inwood	Food Truck	Food Court	Supermarket	Chinese Restaurant	American Restaurant	Southern / Soul Food Restaurant	Restaurant	Other Repair Shop	Organic Grocery	Museum

Results

- Top 5:
  - Food Truck
  - Food Court
  - Supermarket
  - Chinese Restaurant
  - American Restaurant

- Recommendation:
  - People want to have less competition in the food market: avoid these types
  - People want to open these types of restaurant: higher taste or highly differentiated/special ideas to attract more customers to come