

PROYECT END CAPSTONE MANHATTAN vs BRONX

1. INTRODUCTION

1.1 Background

This project carried out the analysis of two cities, which were Manhattan and Bronx. The purpose of this analysis is to segment Manhattan and the Bronx using the most common places given by FourSquare APIs.

With segmentation and Cluster, you can easily highlight the similarities and differences of the two cities.

At the end you will be able to show that city offers better quiet lifestyles to live families with children.

1.2 Business Problem

The two cities offer the same places but the customs and way of having fun makes the environment different for a family with children.

2. DATA

To carry out this analysis, the given New York database was taken into account, and the data provided by the Calling Foursquare API tool, since this tool is based on the tastes and data given by the users themselves. JSON was also used to format the data.

The New York database is used, https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork/labs/newyork_data.json, to get the neighborhoods and their characteristics. The Foursquare API tool was used to explore and take data from the most frequented places in these two cities.

2.1 DATA CLEANING

To purify the data and remove null and / or empty data, and limit data not necessary for the analysis, the Python libraries were used:

- Pandas
- Numpy
- Json

3. METHODOLOGY

K-means Clustering is used to segment neighborhoods. With K-means Clustering you can easily get the characteristics of the neighborhoods to make their comparison. Having the result offered by this tool, we finally proceed to conclude its similarities and differences between these two cities.

4. Result

PLACES GIVEN BY FOURSQUARE MANHATTAN vs BRONX

J:

	name	categories	lat	lng
0	Arturo's	Pizza Place	40.874412	-73.910271
1	Bikram Yoga	Yoga Studio	40.876844	-73.906204
2	Tibbett Diner	Diner	40.880404	-73.908937
3	Starbucks	Coffee Shop	40.877531	-73.905582
4	Dunkin'	Donut Shop	40.877136	-73.906666
5	Astral Fitness & Wellness Center	Gym	40.876705	-73.906372
6	Blink Fitness	Gym	40.877271	-73.905595
7	T.J. Maxx	Department Store	40.877232	-73.905042
8	Starbucks	Coffee Shop	40.873755	-73.908613
9	TCR The Club of Riverdale	Tennis Stadium	40.878628	-73.914568
10	Rite Aid	Pharmacy	40.875467	-73.908906
11	Vitamin Shoppe	Supplement Shop	40.877160	-73.905632
12	Lot Less Closeouts	Discount Store	40.878270	-73.905265
13	Land & Sea Restaurant	Seafood Restaurant	40.877885	-73.905873
14	Subway	Sandwich Place	40.874667	-73.909586
15	Baskin-Robbins	Ice Cream Shop	40.877149	-73.906658
16	GameStop	Video Game Store	40.874267	-73.909342
17	Five Below	Discount Store	40.877256	-73.904938
18	Subway	Sandwich Place	40.878465	-73.905518
19	Parrilla Latina	Steakhouse	40.877473	-73.906073

```
]: print('{} venues were returned by Foursquare.'.format(nearby_venues.sha
```

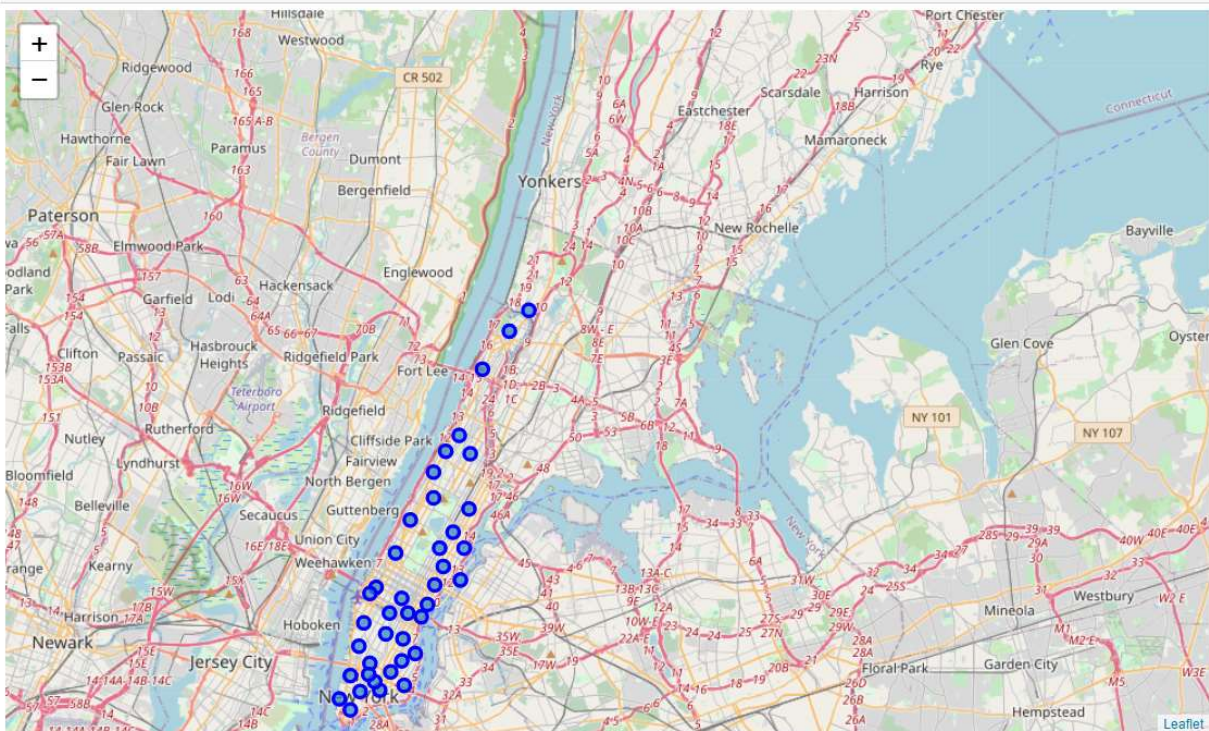
22 venues were returned by Foursquare.

	name	categories	lat	lng
0	Lollipops Gelato	Dessert Shop	40.894123	-73.845892
1	Rite Aid	Pharmacy	40.896649	-73.844846
2	Carvel Ice Cream	Ice Cream Shop	40.890487	-73.848568
3	Walgreens	Pharmacy	40.896528	-73.844700
4	Dunkin'	Donut Shop	40.890459	-73.849089

```
int('{} venues were returned by Foursquare.'.format(nearby_
10 venues were returned by Foursquare.
```

MAPA MANHATTAN

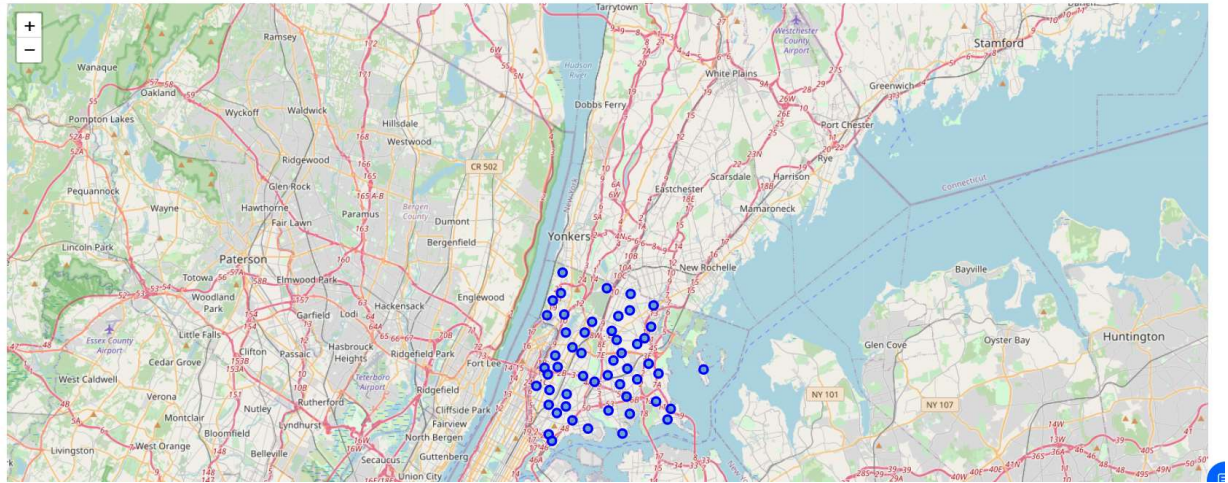
map_manhattan



MAP BRONX

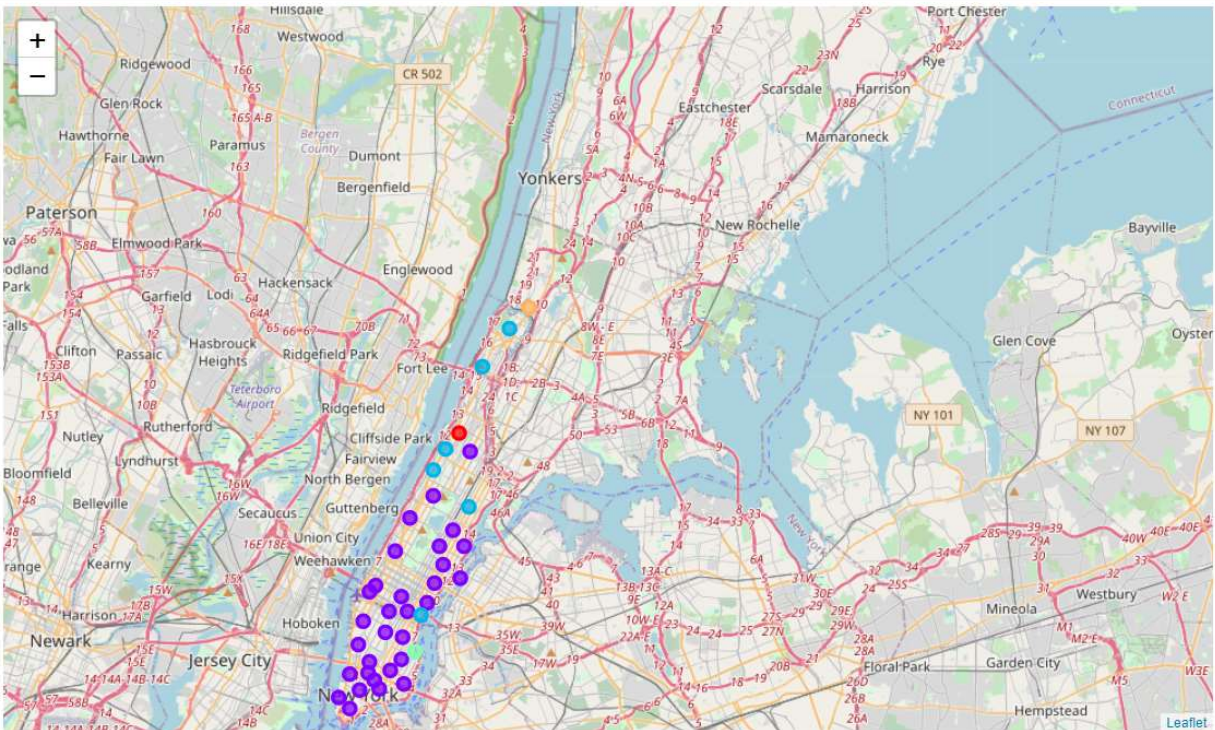
map_bronx

4]:

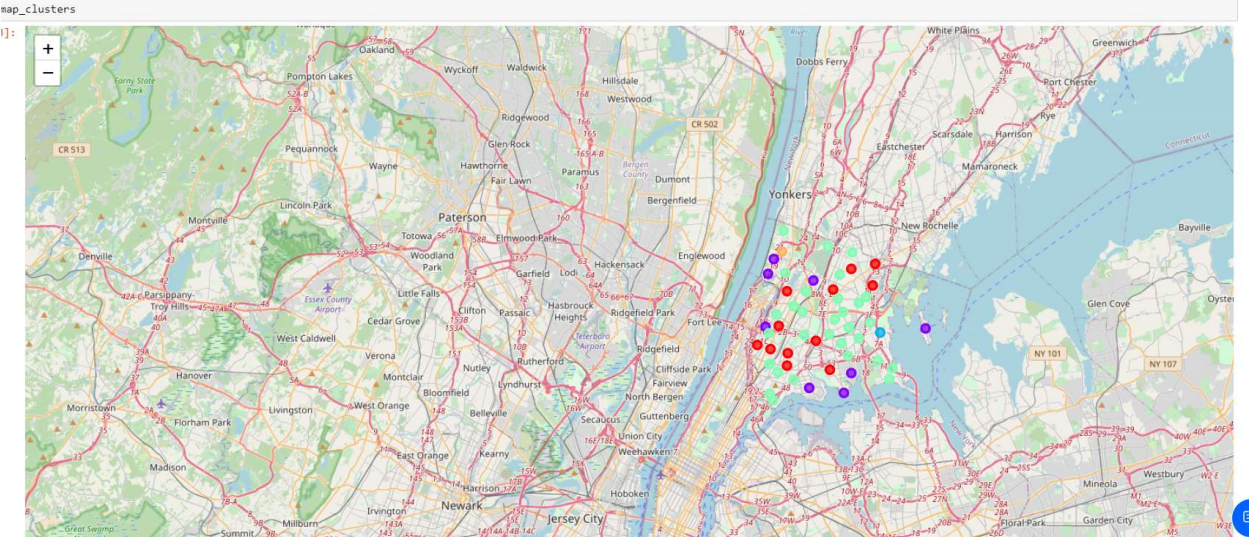


MAP CLUSTERS MANHATTAN

map_clusters



MAP CLUSTERS BRONX



CLUSTER DETAIL

MANHATTAN

	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
4	Hamilton Heights	Pizza Place	Coffee Shop	Café	Mexican Restaurant	Cocktail Bar	Indian Restaurant	Liquor Store	Sushi Restaurant	Park	Deli / Bodega

BRONX

	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
1	Co-op City	Bus Station	Accessories Store	Bagel Shop	Post Office	Pharmacy	Restaurant	Chinese Restaurant	Park	Discount Store	Fast Food Restaurant
2	Eastchester	Caribbean Restaurant	Bus Station	Diner	Deli / Bodega	Convenience Store	Bowling Alley	Pizza Place	Cosmetics Shop	Chinese Restaurant	Donut Shop
17	West Farms	Bus Station	Bus Stop	Park	Chinese Restaurant	Thrift / Vintage Store	Lounge	Basketball Court	Scenic Lookout	Supermarket	Bank
18	High Bridge	Pharmacy	Bus Station	Food	Latin American Restaurant	Pizza Place	Chinese Restaurant	Deli / Bodega	Park	Seafood Restaurant	Donut Shop
24	Morrisania	Discount Store	Donut Shop	Grocery Store	Bus Station	Fast Food Restaurant	Ice Cream Shop	Liquor Store	Pizza Place	Pharmacy	Chinese Restaurant
25	Soundview	Chinese Restaurant	Grocery Store	Breakfast Spot	Bus Stop	Playground	Pharmacy	Video Store	Burger Joint	Discount Store	Latin American Restaurant
40	Olinville	Caribbean Restaurant	Deli / Bodega	Convenience Store	Fried Chicken Joint	Supermarket	Bakery	Food	Metro Station	Pizza Place	Discount Store
42	Concourse	Grocery Store	Deli / Bodega	Pizza Place	Fast Food Restaurant	Spanish Restaurant	Fried Chicken Joint	Ice Cream Shop	Bakery	Pharmacy	Chinese Restaurant
44	Edenwald	Grocery Store	Deli / Bodega	Playground	Chinese Restaurant	Supermarket	Donut Shop	Flea Market	Fish Market	Fish & Chips Shop	Fast Food Restaurant
45	Claremont Village	Bus Station	Grocery Store	Pizza Place	Bakery	Deli / Bodega	Gym	Fried Chicken Joint	Gift Shop	Caribbean Restaurant	Liquor Store
48	Mount Hope	Grocery Store	Pizza Place	Spanish Restaurant	Donut Shop	Ice Cream Shop	Mexican Restaurant	Pharmacy	Chinese Restaurant	Video Game Store	Deli / Bodega
51	Kingsbridge Heights	Pizza Place	Mexican Restaurant	Bus Station	Coffee Shop	Grocery Store	Food Truck	Latin American Restaurant	Korean Restaurant	Spanish Restaurant	Café

MANHATTAN

	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
37	Stuyvesant Town	Park	Pet Service	Cocktail Bar	Harbor / Marina	Gym / Fitness Center	Baseball Field	Bar	Bistro	Heliport	Farmers Market

	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	Coffee Shop	Sandwich Place	Discount Store	Gym	Supplement Shop	Donut Shop	Tennis Stadium	Kids Store	Pharmacy	Yoga Studio

BRONX

	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
4	Riverdale	Park	Bank	Plaza	Home Service	Playground	Food Truck	Moving Target	Gym	Bus Station	Women's Store
7	Norwood	Pizza Place	Park	Chinese Restaurant	Bank	Pharmacy	Deli / Bodega	Spanish Restaurant	Caribbean Restaurant	Liquor Store	Sandwich Place
11	City Island	Park	Seafood Restaurant	Thrift / Vintage Store	Boat or Ferry	History Museum	Bank	Deli / Bodega	Pizza Place	Diner	Music Venue
14	Morris Heights	Spanish Restaurant	Bank	Recreation Center	Deli / Bodega	Pizza Place	Pharmacy	Grocery Store	Flea Market	Fish Market	Fish & Chips Shop
23	Hunts Point	Spanish Restaurant	Juice Bar	Mexican Restaurant	Farmers Market	Shipping Store	Café	Bank	Gourmet Shop	Grocery Store	BBQ Joint
26	Clason Point	Park	Convenience Store	Bus Stop	Pool	Boat or Ferry	South American Restaurant	Grocery Store	Fish & Chips Shop	Fast Food Restaurant	Farmers Market
34	Spuyten Duyvil	Park	Tennis Stadium	Scenic Lookout	Tennis Court	Thai Restaurant	Grocery Store	Asian Restaurant	Bank	Pharmacy	Intersection
39	Castle Hill	Bank	Pizza Place	Pharmacy	Diner	Supermarket	Park	Market	Bus Station	Women's Store	Fish Market
	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
28	Country Club	Sandwich Place	Flea Market	Playground	Athletics & Sports	Women's Store	Donut Shop	Fish Market	Fish & Chips Shop	Fast Food Restaurant	Farmers Market

CONCLUSIONS

- The Foursquare API tool threw me twice as many places in Manhattan as in the Bronx, so it can be first concluded that people in Manhattan are more active at visiting sites than in the Bronx.
- In the first Cluster gift of comparing Manhattan and Bronx, it is evident that in Manhattan they are more given to fun, to entertainment outings.
- Most Bronx neighborhoods like to visit parks. It can also be concluded that the two cities are not interested in the gym.
- Finally conclude that living in the Bronx is quieter for family living.