BATTLE OF THE NEIGHBORHOODS

NYC BEACH NEIGHBORHOODS

INTRODUCTION

Recently, there has been a massive influx of young people moving to and working in NYC, NY. We represent a large real estate firm for young professionals. A new client would like to move to a neighborhood in NYC that has access to beaches and yoga studios, as well as restaurants. Price range is not a limitation. The purpose of this project is to help this young professional determine which neighborhoods they should live in that has access to beaches and yogo studios and restaurants.

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PROBLEM

The major purpose of this project is to provide a list of potential neighborhoods in NYC, NY for our client that matches her needs. We will use this data to suggest a neighborhood for her to move into and buy real estate.

DATA
FOR THIS PROJECT, WE NEED:

- New York City data
  - Boroughs, Neighborhoods along with their latitude and longitudes
- Geospace data

- FourSquare API as its prime data gathering source as it has a database of millions of places, especially their places API which provides the ability to perform location search, location sharing and details about a business.

- Foursquare API endpoint, parameters, credentials, categories

- Venue information and location

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LOCATION

New York City is a bustling metropolis that spans 5 boroughs in the State of New York. While it is known for it's nonstop nightlife, it also has many recreational studios, beaches, parks, and markets.

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METHODS

- Collect json files from NYC data set

- Transfer json into Pandas datafram

- Clean and process data

- Search FourSquare API endpoint for venues in NYC

- Select relevant data – venue, venue type, location

- Visualize number of venues per neighborhood

- Categorize venues and display common venue types per neighborhood
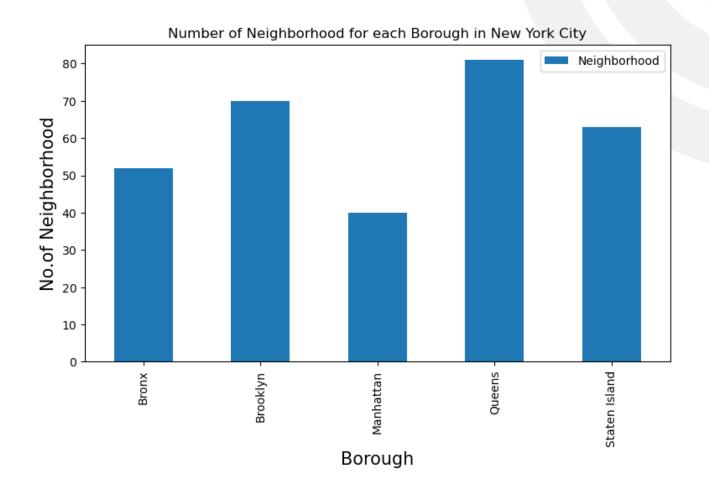
- K-means clustering and mapping

RESULTS

ADDING LATITUDE AND LONGITUDE DATA TO BOROUGH AND NEIGHBORHOOD DATAFRAM

	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

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NUMBER OF NEIGHBORHOODS PER BOROUGH

Number of Neighborhood for each Borough in New York City
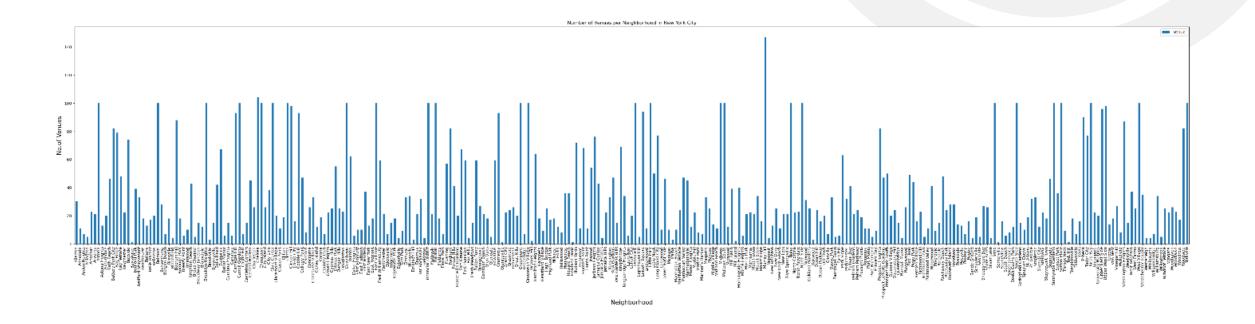
SCRAPING VENUE NAMES, CATEGORIES, AND LOCATIONS

	name	categories	lat	lng
0	The Bar Room at Temple Court	Hotel Bar	40.711448	-74.006802
1	The Beekman, A Thompson Hotel	Hotel	40.711173	-74.006702
2	Alba Dry Cleaner & Tailor	Laundry Service	40.711434	-74.006272
3	City Hall Park	Park	40.712359	-74.007493
4	Gibney Dance Center Downtown	Dance Studio	40.713923	-74.005661

NUMBER OF VENUES PER NEIGHBORHOOD

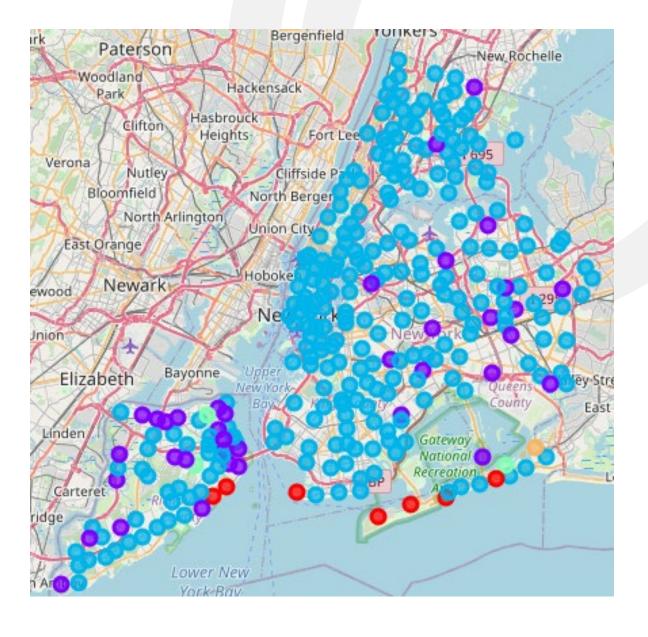Number of Venues per Neighborhood in New York City

TOP TEN MOST COMMON VENUES PER NEIGHBORHOOD

	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	Allerton	Pizza Place	Deli / Bodega	Supermarket	Discount Store	Pharmacy	Department Store	Chinese Restaurant	Martial Arts School	Bakery	Bus Station
1	Annadale	Pizza Place	Restaurant	Train Station	Bakery	Cosmetics Shop	Pub	Bar	American Restaurant	Diner	Pharmacy
2	Arden Heights	Rental Car Location	Deli / Bodega	Coffee Shop	Bus Stop	Pizza Place	Lawyer	Pharmacy	Fish & Chips Shop	Eye Doctor	Factory
3	Arlington	Grocery Store	Deli / Bodega	Coffee Shop	American Restaurant	Intersection	Yoga Studio	Factory	Falafel Restaurant	Farm	Farmers Market
4	Arrochar	Bus Stop	Italian Restaurant	Pizza Place	Deli / Bodega	Middle Eastern Restaurant	Supermarket	Sandwich Place	Liquor Store	Polish Restaurant	Cosmetics Shop

K-mean clustering of venues per neighborhood

DISCUSSION

From the results, we recommend to our client to select one of the following neighborhoods to invest in real estate. These neighborhoods, all in Cluster #1, had a high concentration of beaches and yoga studios. This includes the neighborhoods of:

- Sea Gate
- Breezy Point
- Neponsit
- South Point
- Midland Beach
- Roxbury

- Although Hammel has beach access, it is not a suitable neighborhood for our client as it has no yoga studios and a lesser number of restaurants.

CONCLUSION

From the results, we recommend to our client to buy real estate Sea Gate, Breezy Point, Neponsit, South Point, Midland Beach, Roxbury neighborhoods. Some additional analysis should be made to understand if properties are available in these neighborhoods.

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