NEW YORK CITY GUIDE

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Introduction

- Travelling has become more of a hobby than passion for youngsters. But while travelling, many come across a lot of problems like need of hotels, need to visit best nearby places, getting lost in unknown places and many more.

- This project is aimed to make better travel experience to New York City easier by providing all nearby locations, local areas, hotels, best places to visit in New York City with help of *Foursquare* applications and datasets.

Data

- The data source used in this project is from *Foursquare*, which is a technology company that uses location intelligence to build meaningful consumer experiences and business solutions.

- The project is built with the help of *Foursquare* location data. *Foursquare* API provides great amount of quality data about locations (cafe, restaurant etc.). Using this data will allow tourists to easily decide where to go when they are in a specific city.

Methodology

- First, the geojson data for New York City's neighborhood is obtained.

- Then, the city data is analyzed using the Foursquare API.

- Lastly, each area in the city and its category is identified using clustering.

Results

- Using techniques such as K-means clustering, the results about common venues in the city was obtained.

- This information can be helpful to tourists since they can focus on what they are trying to experience most during their travelling (Food, culture, sport etc.).

- These techniques also provide the visualization of clustering of city.

Common Venues of New York City

	Borough	Neighborhood	Latitude	Longitude	Cluster Labels	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
0	Bronx	Wakefield	40.8947	-73.8472	2	Pharmacy	Sandwich Place	Gas Station	Food Truck	Caribbean Restaurant	Dessert Shop	Donut Shop
1	Bronx	Co-op City	40.8743	-73.8299	2	Baseball Field	Restaurant	Bus Station	Ice Cream Shop	Basketball Court	Chinese Restaurant	Fast Food Restaurant
2	Bronx	Eastchester	40.8876	-73.8278	0	Caribbean Restaurant	Bus Station	Deli / Bodega	Diner	Bus Stop	Metro Station	Food & Drink Shop
3	Bronx	Fieldston	40.8954	-73.9056	0	River	High School	Bus Station	Playground	Plaza	Filipino Restaurant	Exhibit
4	Bronx	Riverdale	40.8908	-73.9126	2	Park	Bus Station	Gym	Bank	Plaza	Food Truck	Home Service
5	Bronx	Kingsbridge	40.8817	-73.9028	2	Pizza Place	Sandwich Place	Discount Store	Bar	Latin American Restaurant	Deli / Bodega	Mexican Restaurant
6	Manhattan	Marble Hill	40.8766	-73.9107	2	Coffee Shop	Sandwich Place	Discount Store	Yoga Studio	Donut Shop	Spa	Steakhouse
7	Bronx	Woodlawn	40.8983	-73.8673	2	Pub	Playground	Deli / Bodega	Pizza Place	Food & Drink Shop	Italian Restaurant	Supermarket
8	Bronx	Norwood	40.8772	-73.8794	2	Pizza Place	Deli / Bodega	Park	Bank	Pharmacy	Sandwich Place	Athletics & Sports
9	Bronx	Williamsbridge	40.881	-73.8574	2	Bar	Nightclub	Caribbean Restaurant	Soup Place	Women's Store	Flea Market	Falafel Restaurant

Clustering of New York City
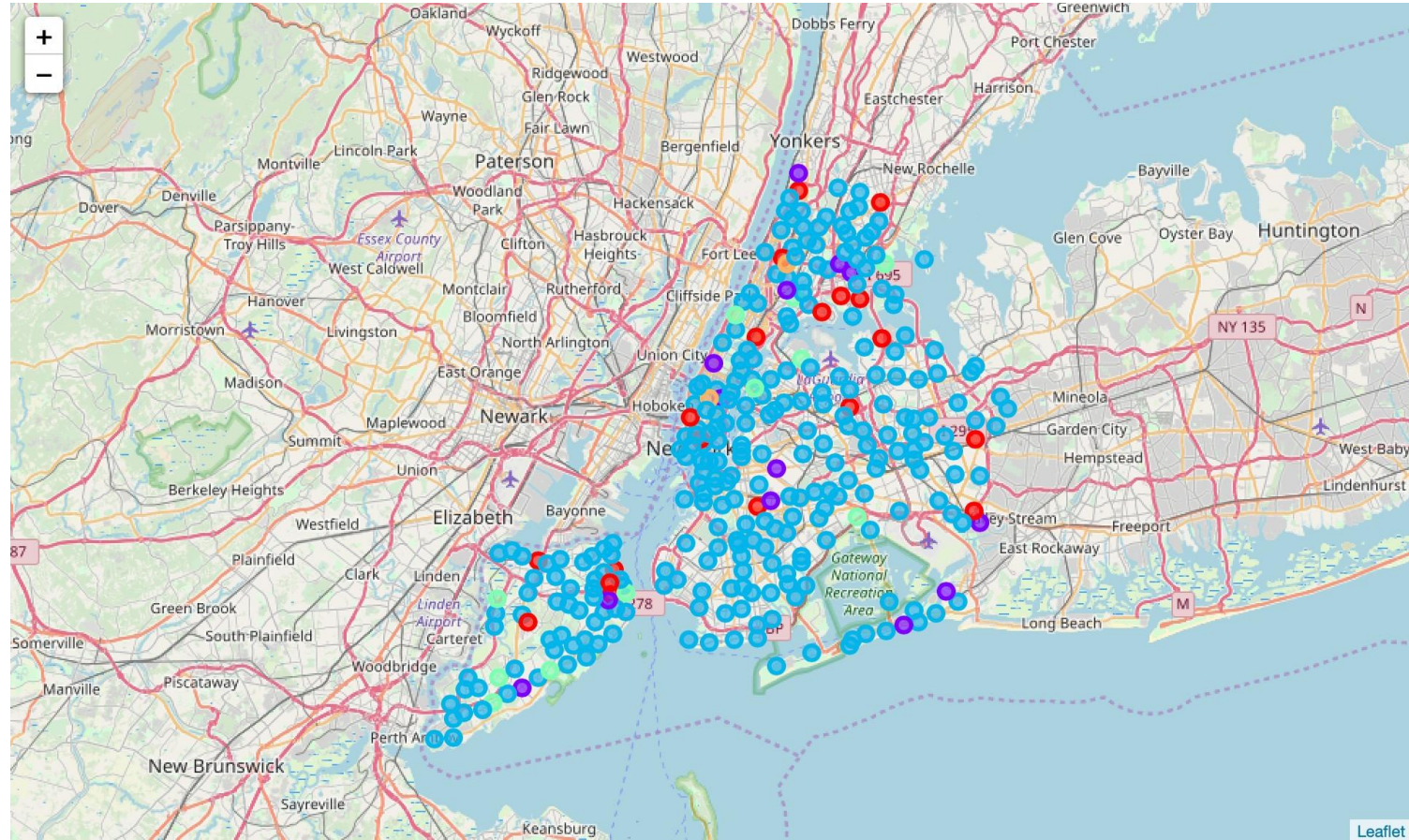
Discussion

- k-means clustering is a method of vector quantization, originally from signal processing, that is popular for cluster analysis in data mining.

- k-means clustering aims to partition n observations into k clusters in which each observation belongs to the cluster with the nearest mean, serving as a prototype of the cluster. This results in a partitioning of the data space into Voronoi cells.

Conclusion

- Eventually, using *Foursquare* datasets this project successfully created a way to familiar with all the location information handy.

- Information such as nearby places, hotels, venues are easily accessible using data science methodology.

Note

Please refer to
Final_Capstone_Presentation and **Final_Capstone_Notebook**
for more details about this project.

Thanks for Watching