COMPARE TWO CITIES:NEWYORK AND TORONTO

Introduction:

- ❖ New york and Toronto are two major cities, which attracts thousands of people every year.

- ❖ Comparing these two cities neighborhoods based on most popular venues help them to better understand these cities and travel around easily .

- ❖ We will be doing the analysis of cities with the help of foursquare apis,folium to visualize map and kmeans clustering algorithm to cluster the neighborhoods.
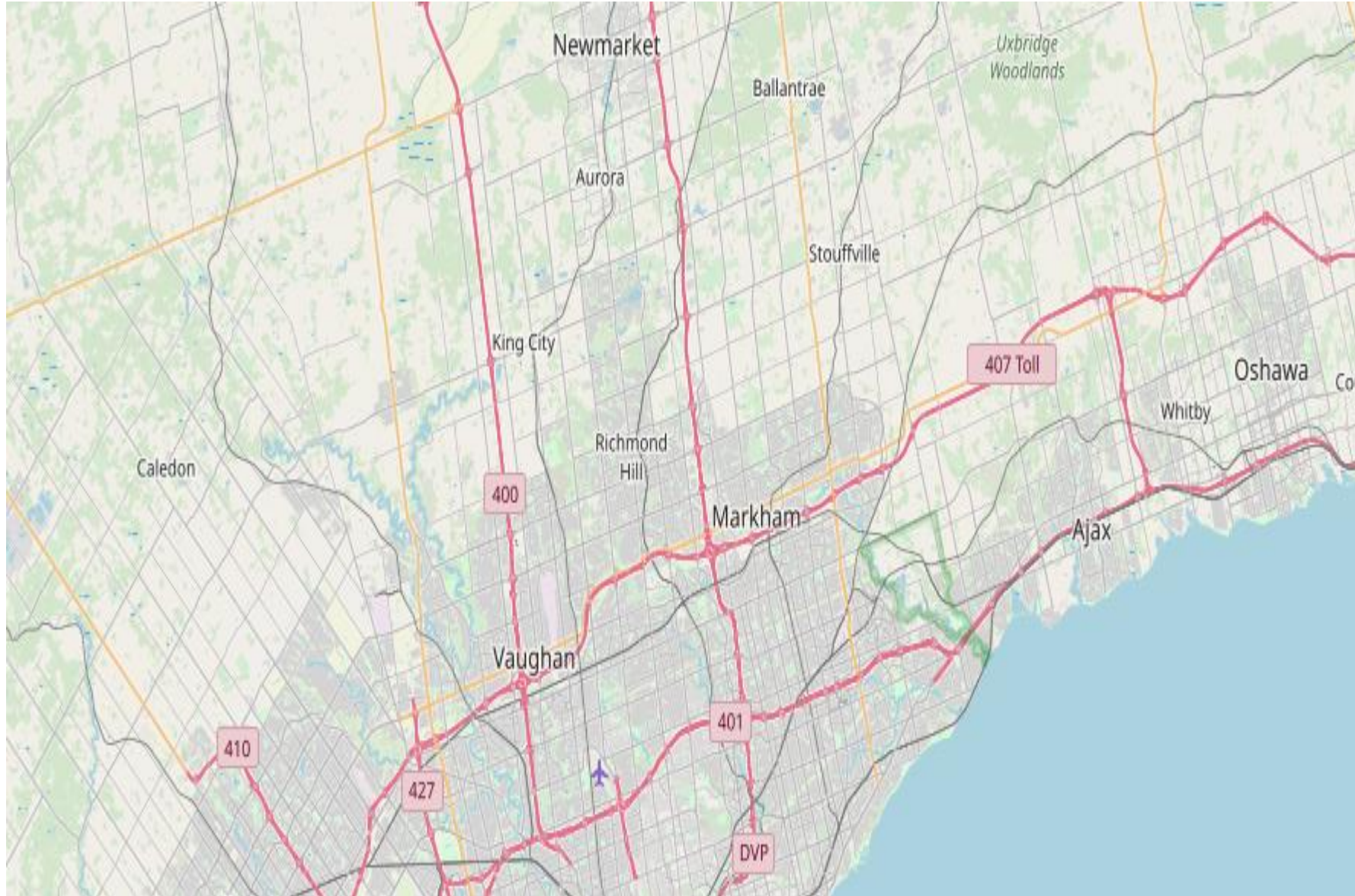
DataSources:

- https://cocl.us/new_york_dataset

- https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

- http://cocl.us/Geospatial_data

- Collect data from these sources and clean it and create a dataframe from this.

Methodology:

- ❖ Top 10 venues in each neighbourhood within an area ~1km around it.

- ❖ In first step we have collected the required data.

- ❖ Second step in our analysis will be finding venues and categorize them.

- ❖ In third and final step we will focus on create clusters of Neighbourhood using kmeans.

- ❖ Create a new dataframe that includes the cluster as well as the top 10 venues for each neighborhood of Toronto and Newyork.

- ❖ Get the top 100 venues that are in Newyork within a radius of 500 meters.

Data Analysys:

- ❖ We are analysing the data to get the unique venues.

- ❖ We are grouping the venues of each neighbourhood and using one hot method to find the average occurrence of each venue in each neighbourhood for both the cities.

- ❖ ML algorithm used:Kmeans algorithm to cluster the neighborhoods based on top venues.

Results And Discussion:

❖ We analysed the neighbourhoods of Toronto and and Newyork and found how similar these cities are.

❖ The top venues of cluster1 of Newyork is:

Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
Sea Gate	Beach	Gastropub	Spa	Chinese Restaurant	Donut Shop
Broad Channel	Metro Station	Other Nightlife	Pizza Place	Chinese Restaurant	Sporting Goods Shop
Breezy Point	Park	Surf Spot	Beach	American Restaurant	Monument / Landmark
Arverne	Surf Spot	Beach	Donut Shop	Sandwich Place	Bus Stop
Rockaway Beach	Beach	Bar	Food Truck	Latin American Restaurant	Boat or Ferry

❖ For Toronto,

Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
North York	3.0	Pizza Place	Coffee Shop	Fast Food Restaurant	Sports Bar	Filipino Restaurant
North York	3.0	Park	Coffee Shop	Fast Food Restaurant	Pharmacy	Indian Restaurant
Downtown Toronto	3.0	Bakery	Coffee Shop	Indian Restaurant	Pharmacy	Yoga Studio
North York	3.0	Fast Food Restaurant	Restaurant	Train Station	Auto Garage	Grocery Store
North York	3.0	Coffee Shop	Chinese Restaurant	Discount Store	Fast Food Restaurant	Convenience Store

Conclusion:

- ❖ We have clustered the neighbourhoods of two popular cities New York and Toronto and identified the most common venues in each area.