THE BATTLE OF NEIGHBOURHOODS

FINAL PRESENTATION FOR COURSERA CAPSTONE PROJECT

INTRODUCTION

- Toronto, Canada and Bangalore, India are two major cities in the world. Both cities become a centre of attention for residential, job employment, tourism, education, shopping and sports activity.
- In this project, we will study in details the area classification using Foursquare data and ML segmentation and clustering (K-Mean Algorithm). The aim of this project is to segment areas of Toronto and Bangalore based on the most common places captured from Foursquare.
- Using segmentation and clustering, we hope we can determine:
  - The similarity or dissimilarity of both cities
  - Classification of area located inside the city whether it is residential, tourism places, or others

DATA SCRAPING AND PREPARATION

Toronto Data

```
In [33]: neighborhoods.head()
```

Out[33]:

	Postcode	Borough	Neighbourhood	Latitude	Longitude
37	M4E	East Toronto	The Beaches	43.676357	-79.293031
41	M4K	East Toronto	The Danforth West, Riverdale	43.679557	-79.352188
42	M4L	East Toronto	The Beaches West, India Bazaar	43.668999	-79.315572
43	M4M	East Toronto	Studio District	43.659526	-79.340923
44	M4N	Central Toronto	Lawrence Park	43.728020	-79.388790

Bangalore Data

```
In [8]: df.head()
```

Out[8]:

	Area	Neighborhoods	Latitude	Longitude	City
0	Central	Cantonment area	12.972442	77.580643	Bangalore
1	Central	Domlur	12.960992	77.638726	Bangalore
2	Central	Indiranagar	12.971891	77.641151	Bangalore
3	Central	Jeevanbheemanagar	12.962900	77.659500	Bangalore
4	Central	Malleswaram	13.003100	77.564300	Bangalore

NEIGHBORHOODS DATA FOR THE CITIES

Toronto neighborhoods data

```
In [39]: print(toronto_venues.shape)
         toronto_venues.head()

         (1709, 7)
```

Out[39]:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	The Beaches	43.676357	-79.293031	Glen Manor Ravine	43.676821	-79.293942	Trail
1	The Beaches	43.676357	-79.293031	The Big Carrot Natural Food Market	43.678879	-79.297734	Health Food Store
2	The Beaches	43.676357	-79.293031	Grover Pub and Grub	43.679181	-79.297215	Pub
3	The Beaches	43.676357	-79.293031	Upper Beaches	43.680563	-79.292869	Neighborhood
4	The Danforth West, Riverdale	43.679557	-79.352188	Pantheon	43.677621	-79.351434	Greek Restaurant

Bangalore neighborhoods data

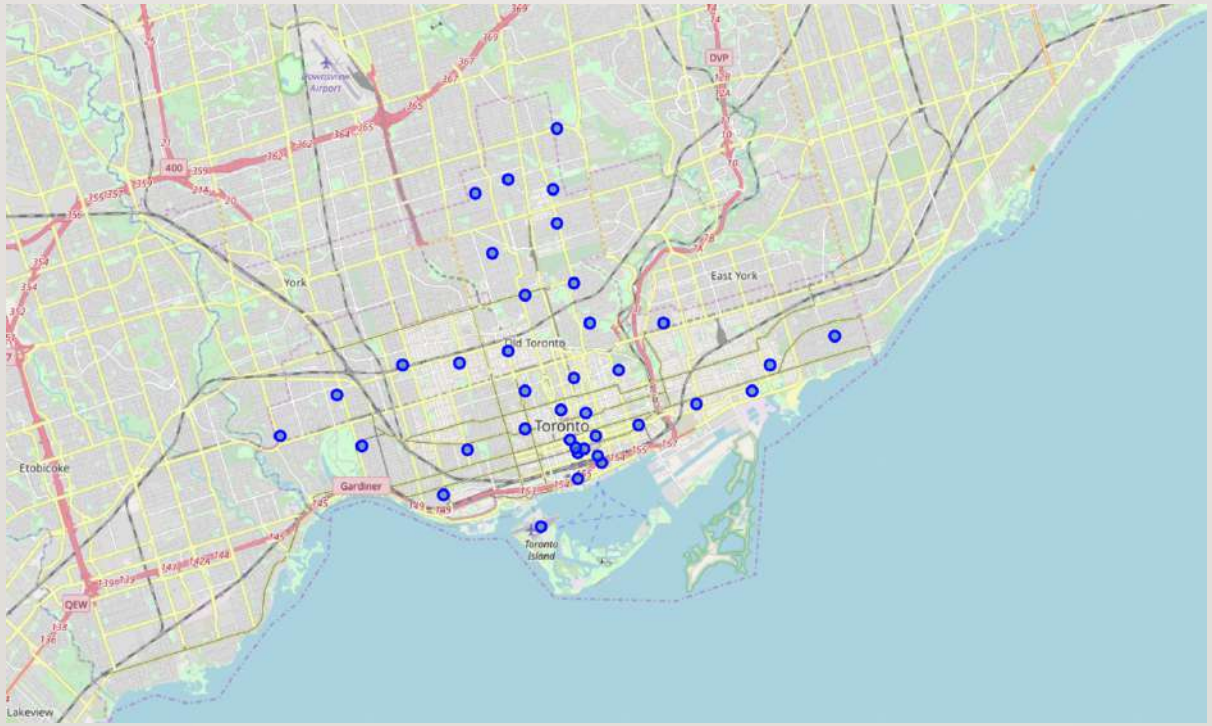
```
In [37]: print(blore_venues.shape)
         blore_venues.head()

         (607, 7)
```

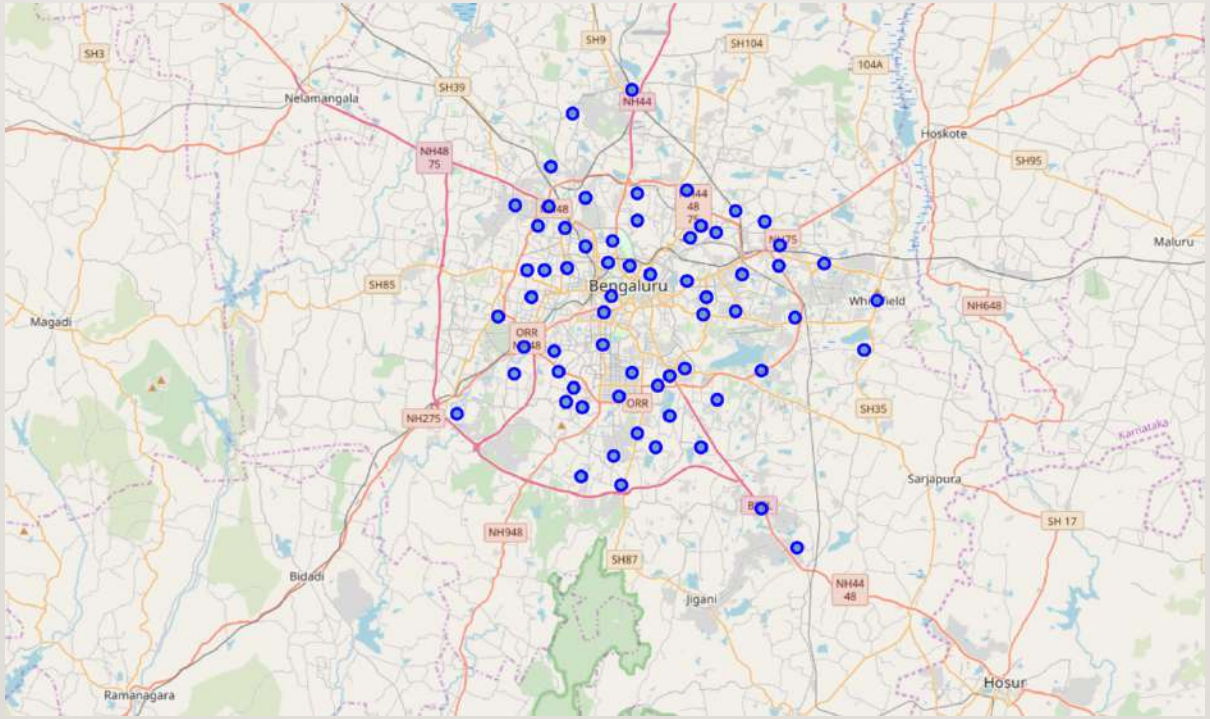
Out[37]:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Cantonment area	12.972442	77.580643	Hotel Fishland	12.975569	77.578592	Seafood Restaurant
1	Cantonment area	12.972442	77.580643	Vasudev Adigas	12.973707	77.579257	Indian Restaurant
2	Cantonment area	12.972442	77.580643	Sapna Book House	12.976355	77.578461	Bookstore
3	Cantonment area	12.972442	77.580643	Adigas Hotel	12.973554	77.579161	Restaurant
4	Cantonment area	12.972442	77.580643	Kamat Yatrinivas	12.975985	77.578125	Indian Restaurant

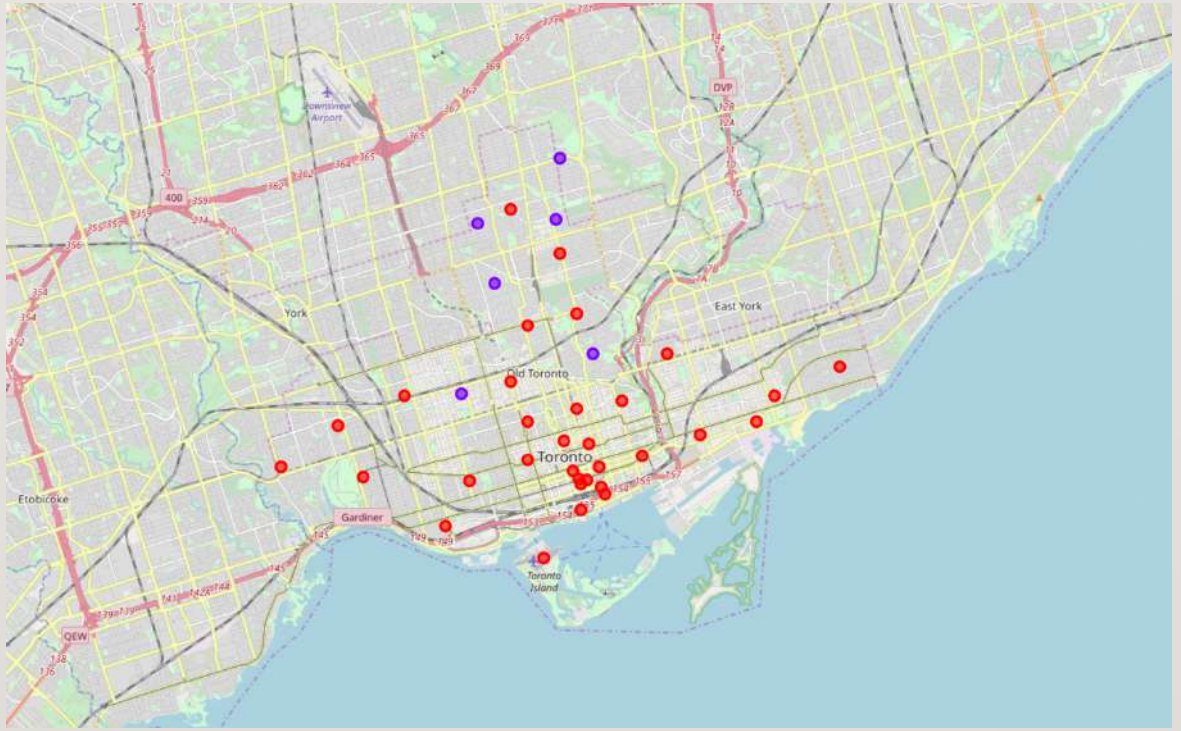
VISUALIZE THE DATA POINTS - TORONTO



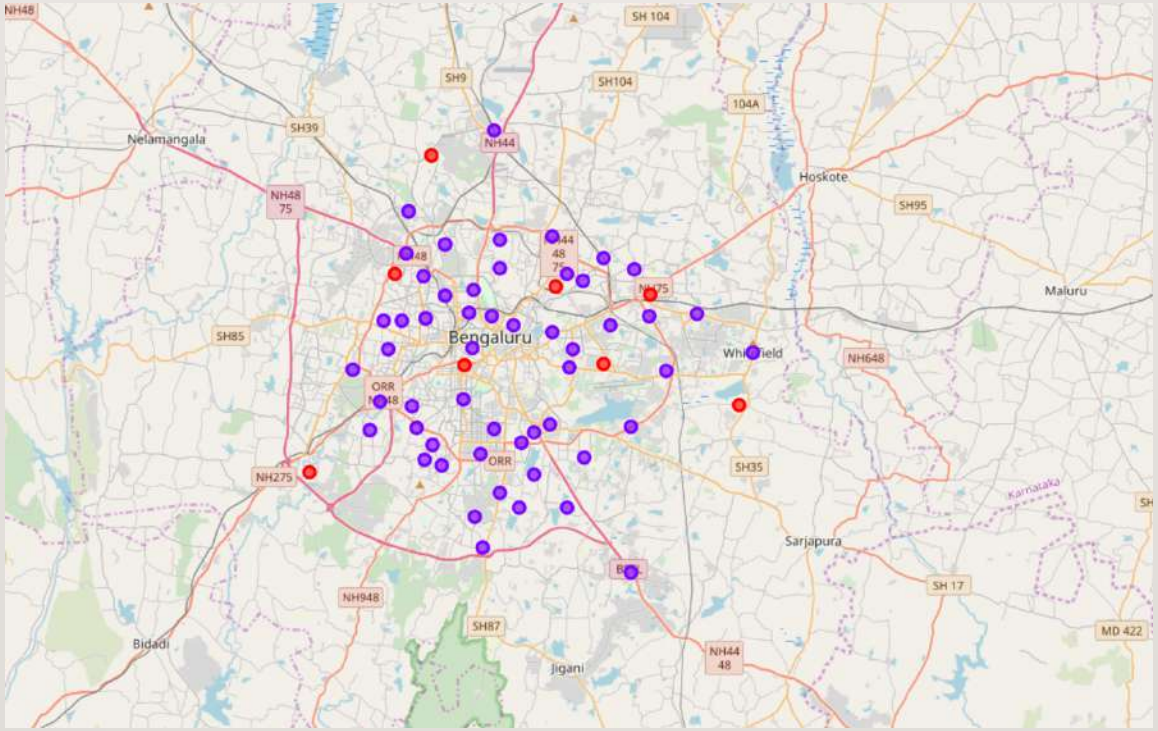
VISUALIZE THE DATA POINTS - BANGALORE



AFTER CLUSTERING – DATA POINTS - TORONTO



AFTER CLUSTERING – DATA POINTS - BANGALORE



FINAL RESULTS AND CONCLUSION

- **Cluster 1: *Toronto:*** *Restaurants and Cafe*
- **Cluster 2: *Toronto:*** *Tourist spots for roaming*

- **Cluster 1: *Bangalore:*** *Tourist spots or places*
- **Cluster 2: *Bangalore:*** *Mostly Restaurants and other shops*