



# Battle of Neighborhoods

NEW YORK AND TORONTO

# Understanding Neighborhoods in the two cities

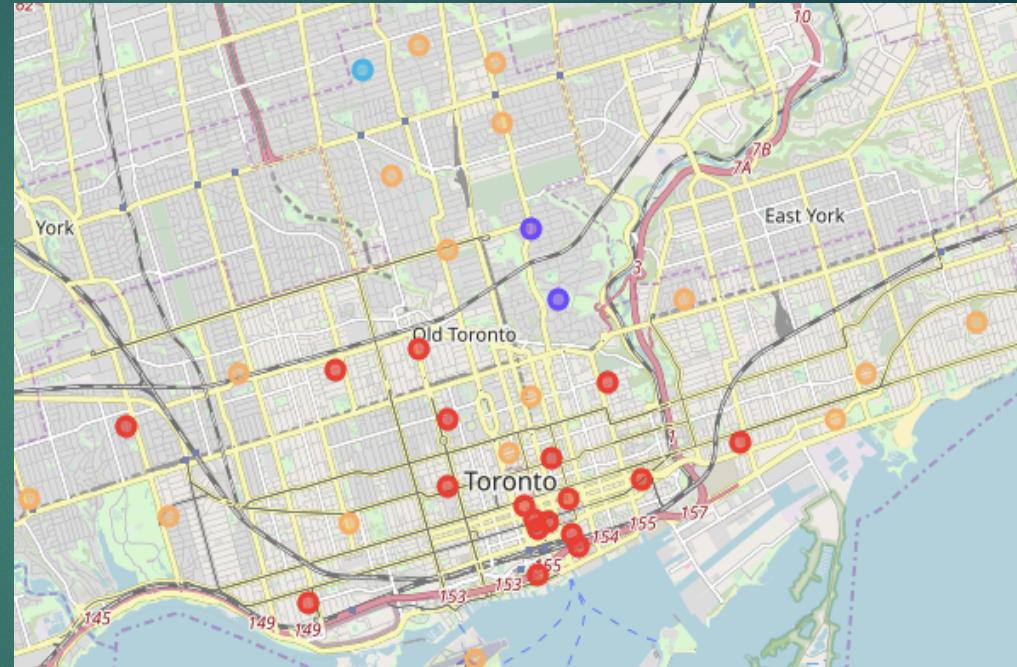
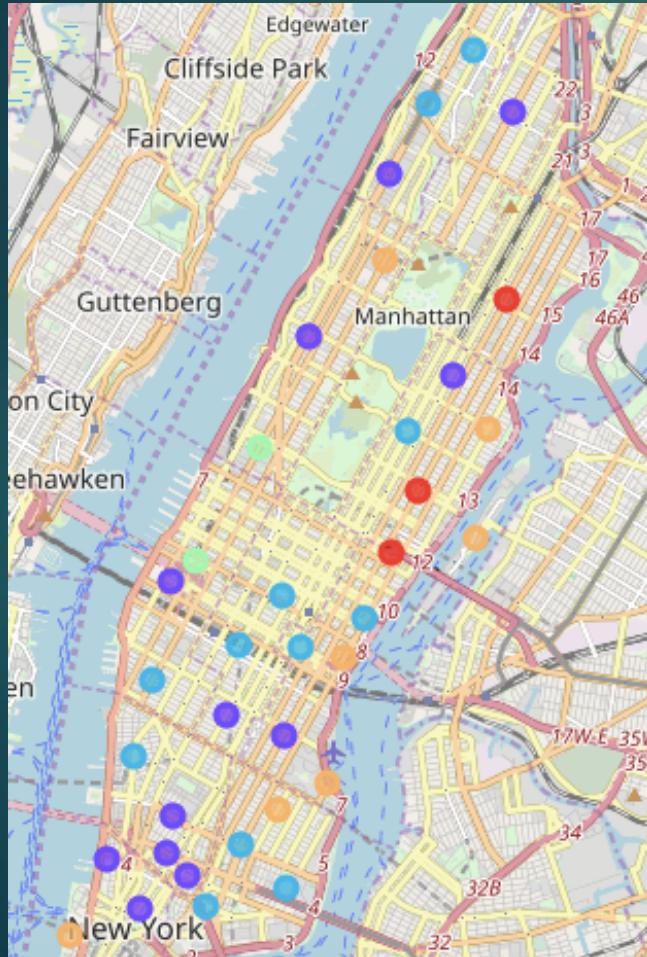
- ▶ Neighbourhoods in the cities are defined by the most popular venues in them
- ▶ Anyone interested in the setting up a restaurant would want to understand what kind of venues are popular so that they can plan the location of the new restaurant
  - ▶ What kind of restaurant might be setup and in which neighbourhood
- ▶ How safe are the cities by looking at
  - ▶ What crime is most frequently occurring in the two cities.

# Data Acquisition and Cleaning

- ▶ We need Data for with Latitude and Longitude coordinates for the neighbourhoods in the two cities along with datasets recording the crime details in both New York and Toronto.
- ▶ [New York Neighborhood Dataset](#)
- ▶ [New York Crime Data](#)
- ▶ Toronto Neighbourhood Data: scraped from this Wikipedia website using Beautiful Soup
- ▶ [Toronto Crime Data](#)

We get a list of Boroughs and Neighborhoods for Toronto city, and then merge this dataframe with another dataframe with Latitude and Longitude coordinates. Crime data is sources fro the open data initiative of both the cities.

# Clusters in Manhattan and Toronto



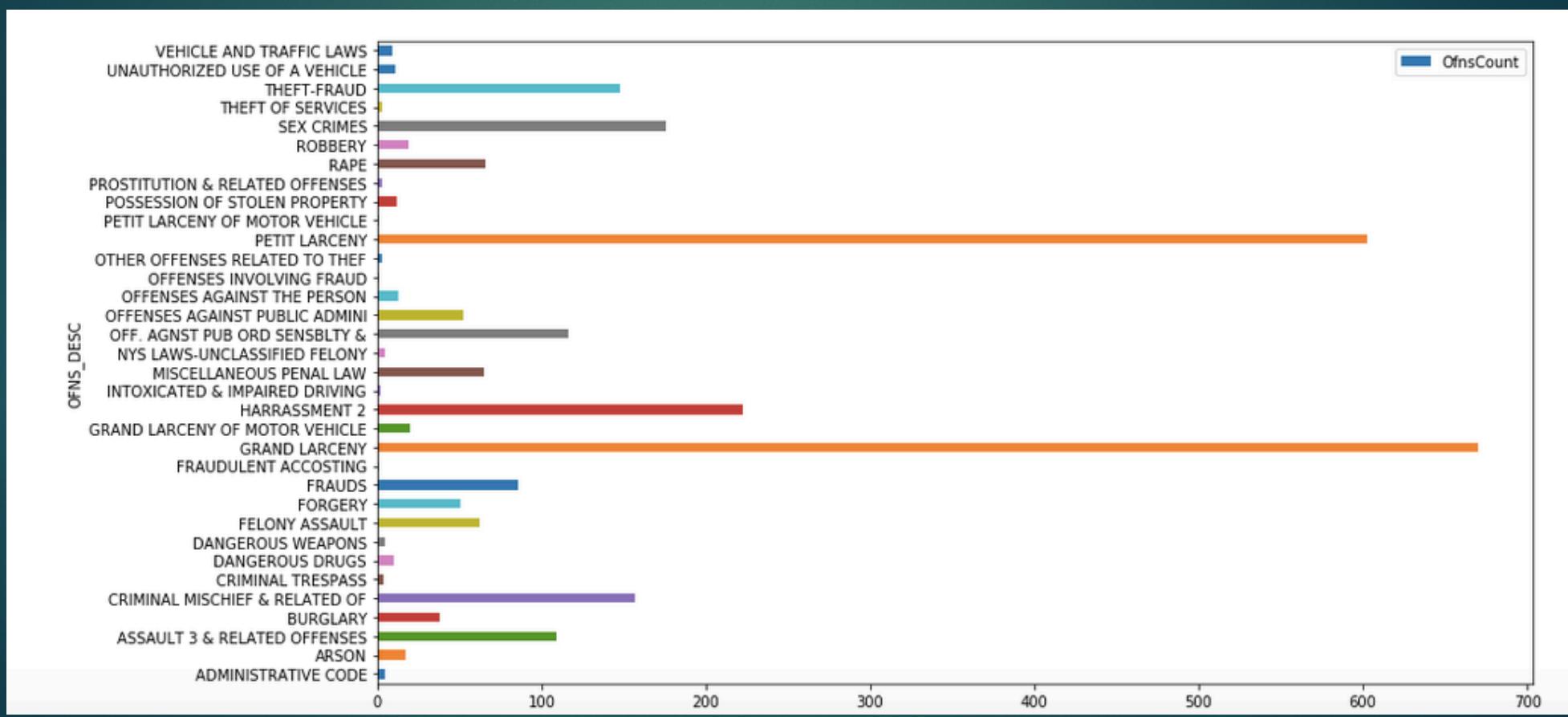
Looking at 20 venues within a radius of 500 meters from the centre of each neighbourhood Manhattan has 203 unique venue categories. Cluster analysis indicate that there are specific clusters in both Manhattan and Toronto with an eating place (restaurants/Cafes/Pub-Bar-Lounges) as the top two most common venues in them, and both the cities have clusters without any eating place at all. Parks, Theatres, Galleries are the common venues in the clusters without any eating places within them.

# Where to set up a restaurant

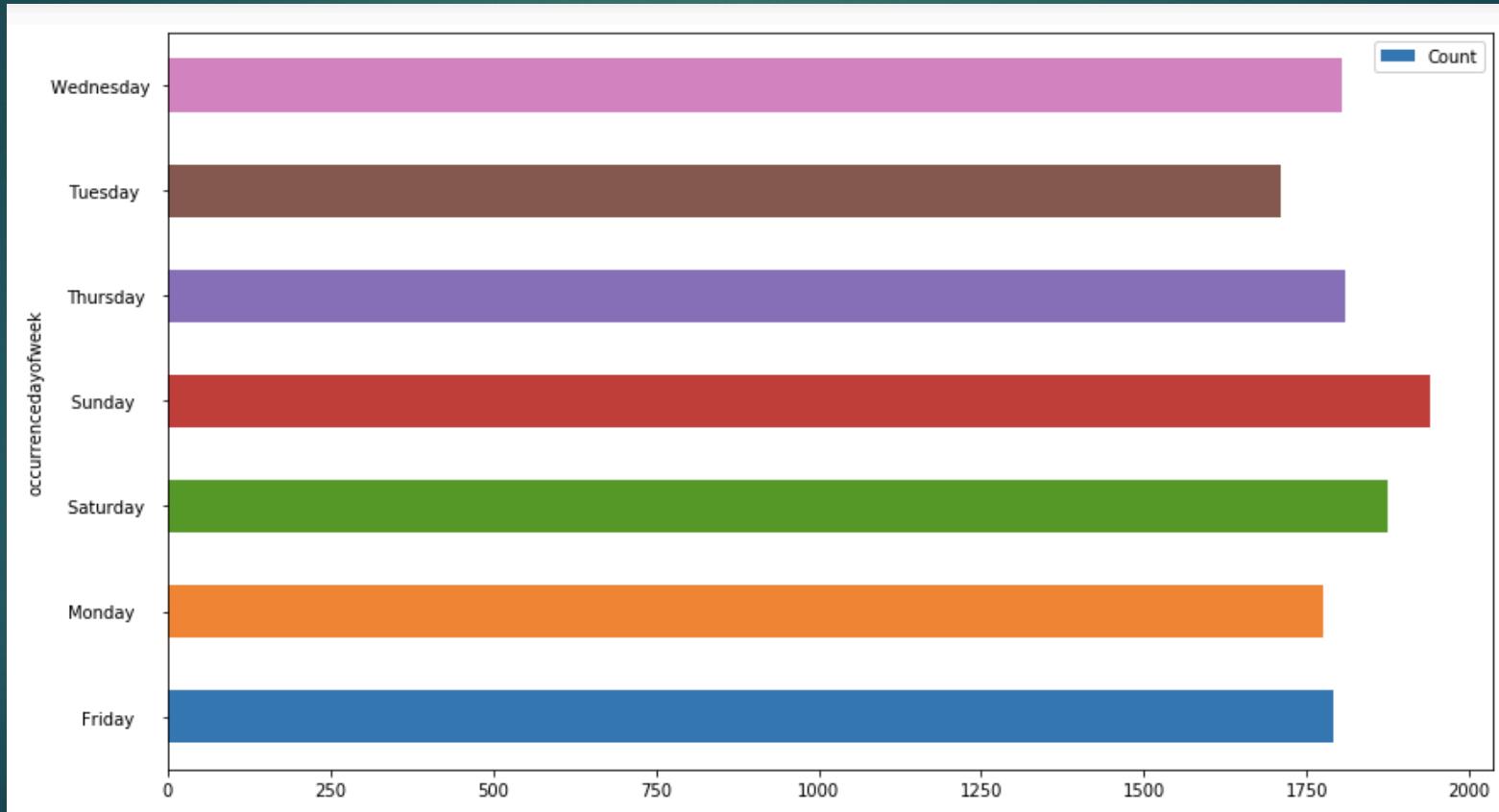
Borough	Cluster 0	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Manhattan	67%	71%	67%	0%	73%
Toronto	81%	0%	0%	0%	56%

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# Crimes reported in the New York in 2018



# Distribution of Assaults in Toronto by day of the week



# Conclusion and future direction

## Conclusion:

The objective of the project was to look at venues in the cities of New York and Toronto, the data suggest that the two cities are not only similar to each other in some aspects but also are different to each other in certain aspects. Both the cities have neighbourhoods which have Theaters, Parks, and Other public places as the most common venues. Certain neighbourhoods in both the cities cater to specific cuisine. E.g. Mexican Restaurant is the most frequently found venue in East Harlem, Manhattan. While Breakfast Spots are the most common venue in Parkdale Toronto. We also found that Cluster 3 in Manhattan and Clusters 1, 2, and 3 in Toronto might be the places one can explore to set up a restaurant or a cafe.

Larceny and Harassment are the frequently reported crime in New York city whereas Assault, B&E, and MV Theft are the most commonly reported incidents in Toronto City

## Future direction:

Further data and analysis is required to explore the relationship between the type of Venues and the demographics of any particular neighbourhood in both cities and also the relationship between Crime frequency, nature etc to the demographics of a particular location in the two cities. Reverse geocoding is another step that we would like to explore visualizing crimes on an interactive map using Nominatim package. Perform this venue analysis again to observe if the venues and cluster membership remain consistent.