Venue Comparison Analysis

Between Manhattan & Toronto

# Venue Comparison Provides Benefits

- This exploring will benefit those people who want to have a better understanding of both cities especially for those people who want to choose one of them to live in

- It could also provide the traveler and native resident a general map of the special properties of the city

- It provides a fast way to investigate the venue by keywords and create the corresponding database

- It locate the specific venues and also represents people's preferences

Data Acquisition and Cleaning

- New York City neighborhood data from the web link https://geo.nyu.edu/catalog/nyu_2451_34572.

- Toronto neighborhood data scraped from the webpage https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M.

- Merge the Toronto dataset with the table in the server http://cocl.us/Geospatial_data.

- Use Foursquare API to get detailed venues data of both cities

- Create data frame and limited New York City data to only Manhattan

- Clean scraped data to drop data like "not assign" or "NaN"

New York City: Dataframe & Map Plot

	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
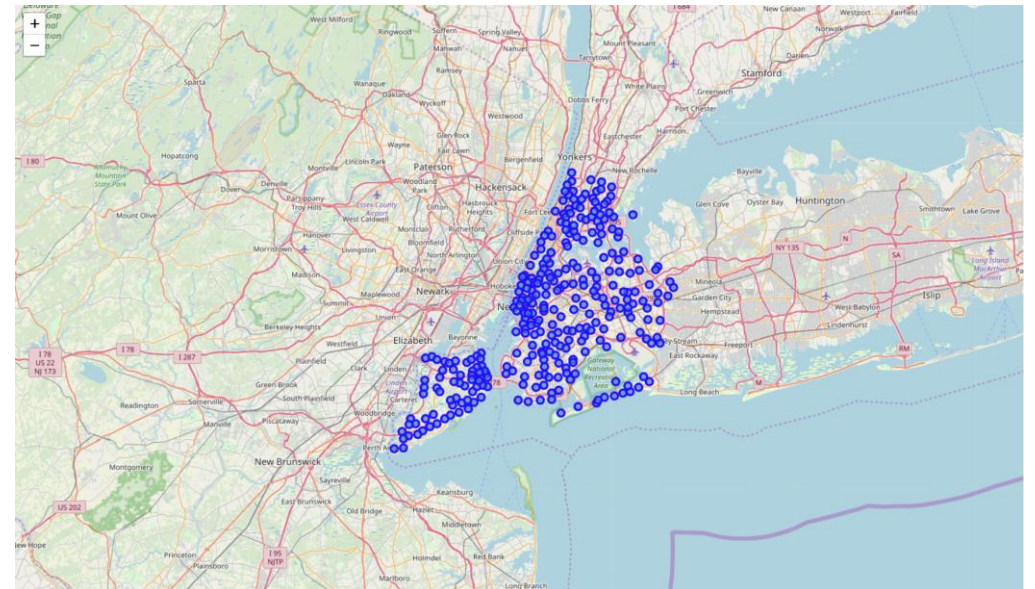
Limit the New York Area to Manhattan Borough

Toronto: Dataframe & Map Plot
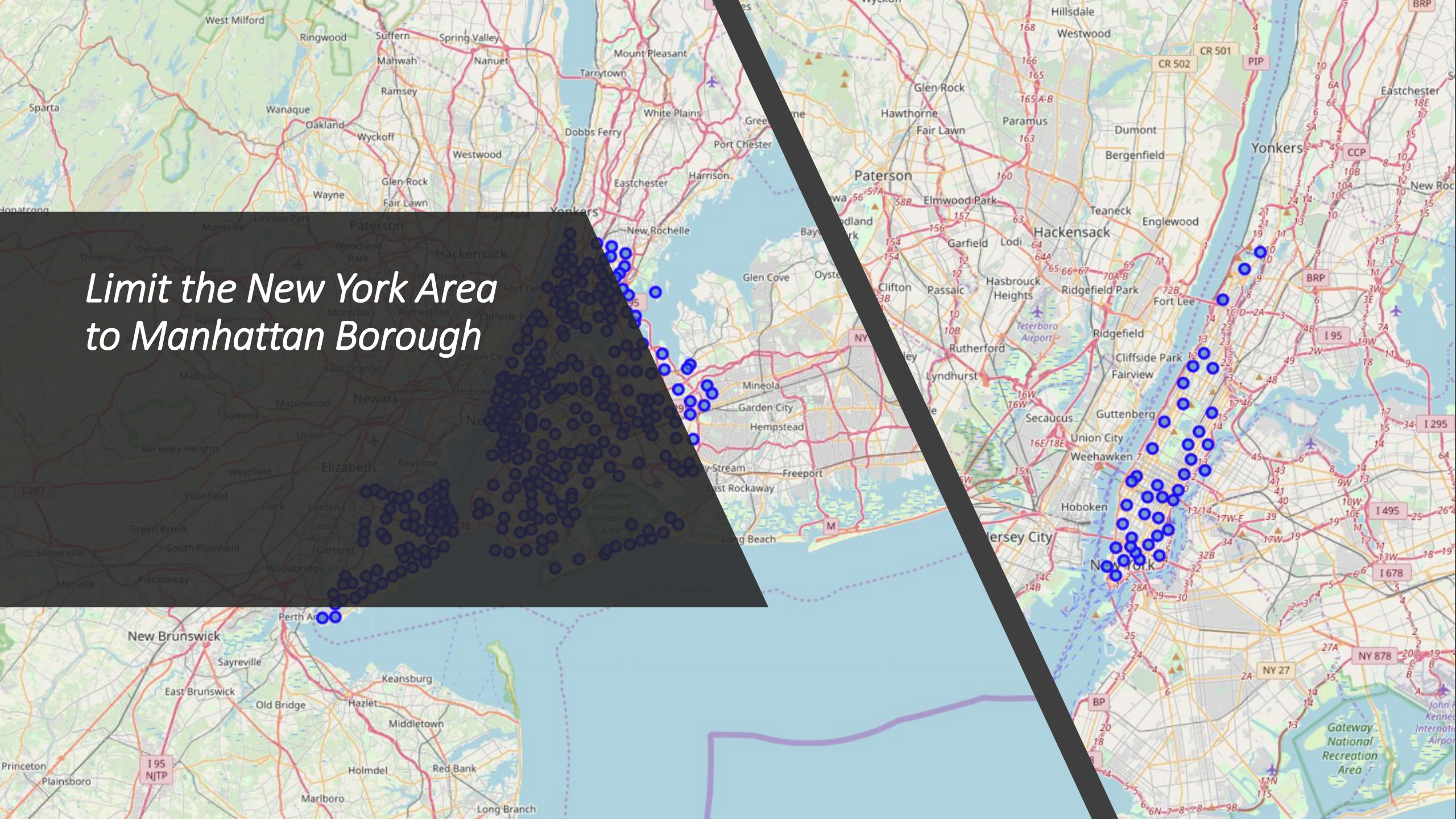
	Postal Code	Borough	Neighborhood	Latitude	Longitude
0	M1B	Scarborough	Rouge, Malvern	43.806686	-79.194353
1	M1C	Scarborough	Highland Creek, Rouge Hill, Port Union	43.784535	-79.160497
2	M1E	Scarborough	Guildwood, Morningside, West Hill	43.763573	-79.188711
3	M1G	Scarborough	Woburn	43.770992	-79.216917
4	M1H	Scarborough	Cedarbrae	43.773136	-79.239476

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Marble Hill	40.876551	-73.91066	Arturo's	40.874412	-73.910271	Pizza Place
1	Marble Hill	40.876551	-73.91066	Bikram Yoga	40.876844	-73.906204	Yoga Studio
2	Marble Hill	40.876551	-73.91066	Tibbett Diner	40.880404	-73.908937	Diner
3	Marble Hill	40.876551	-73.91066	Dunkin'	40.877136	-73.906666	Donut Shop
4	Marble Hill	40.876551	-73.91066	Starbucks	40.877531	-73.905582	Coffee Shop

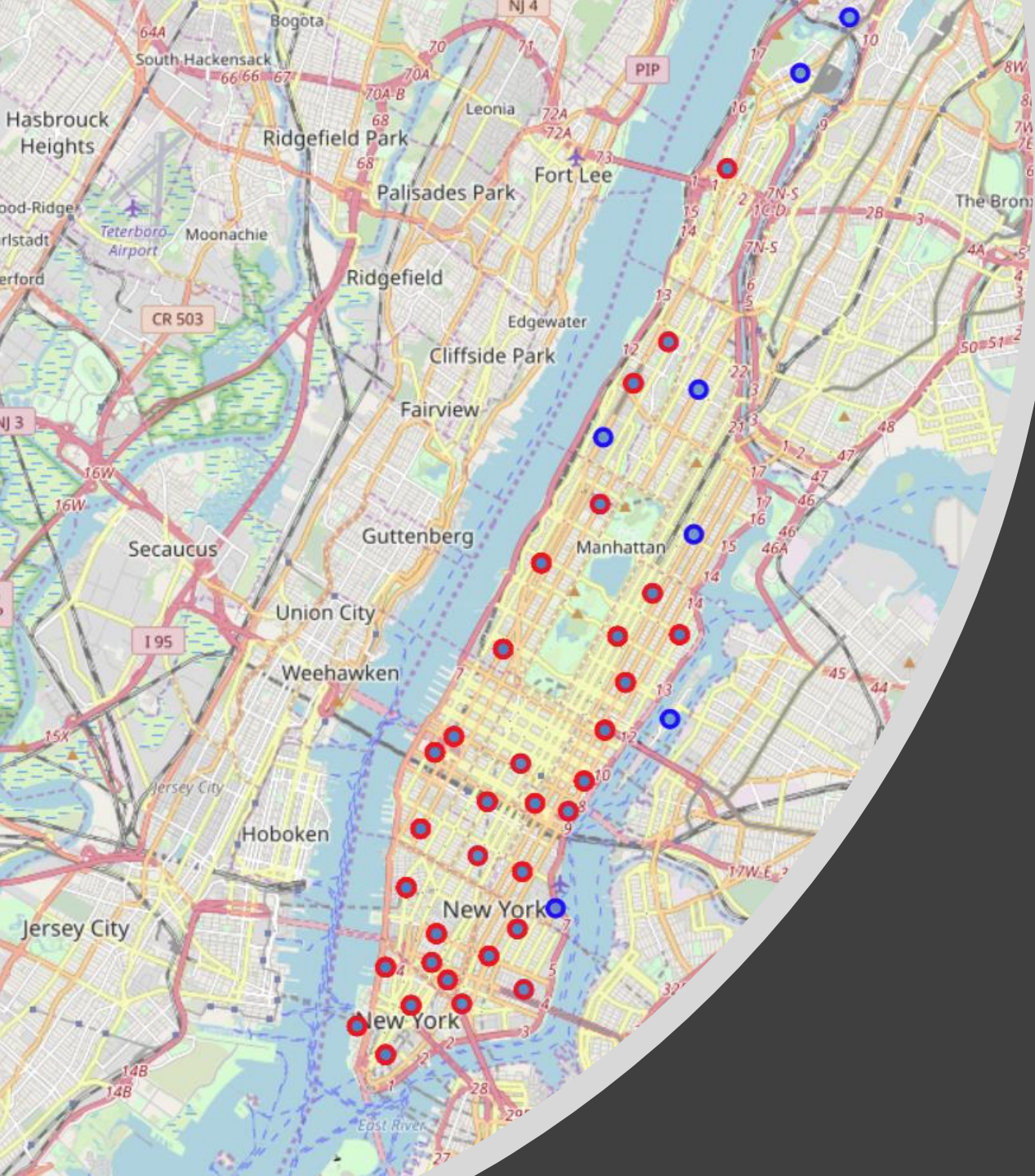# Venue Data from Foursquare API

Manhattan Venue Make-up

Manhattan Venues Make-up

- Restaurant
- Museum
- Gym
- Bar
- Other Venues

Count

28.0%
0.5%
3.8%
6.9%
60.8%

Toronto Venue Make-up

Toronto Venues Make-up

Restaurant
Museum
Gym
Bar
Other Venues

Count
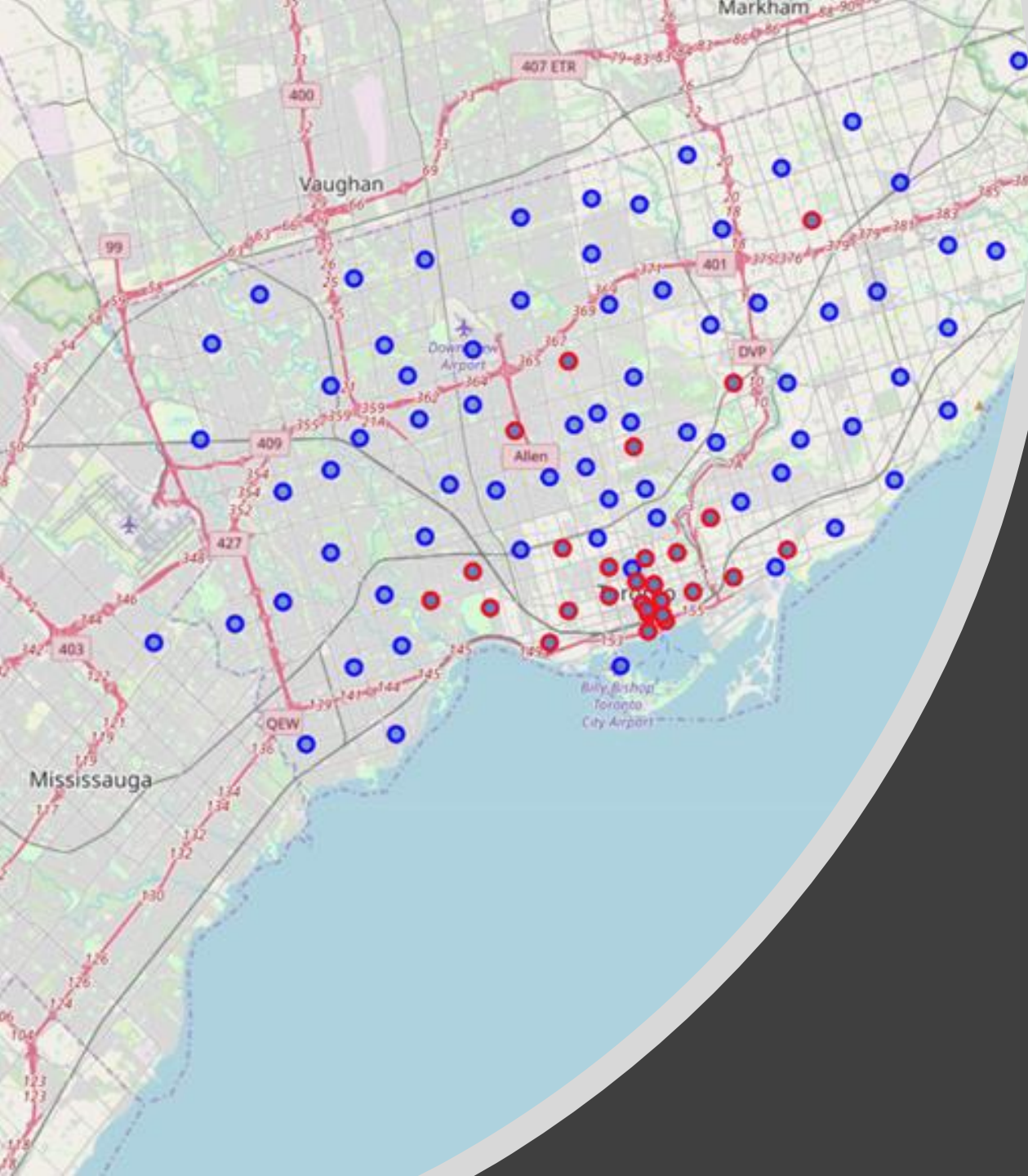
23.4%
0.4%
2.1%
5.0%
69.1%
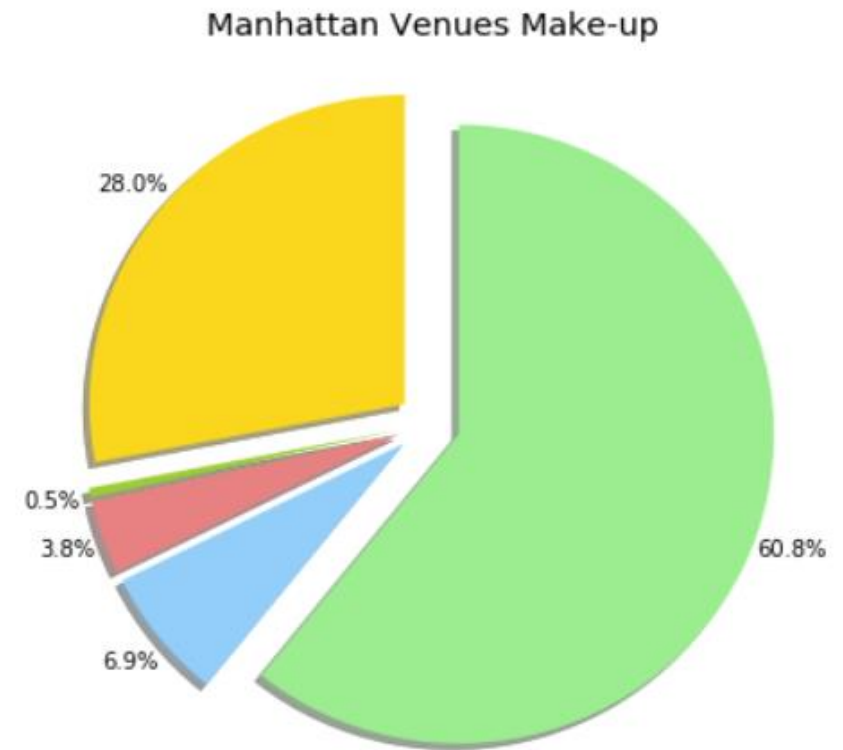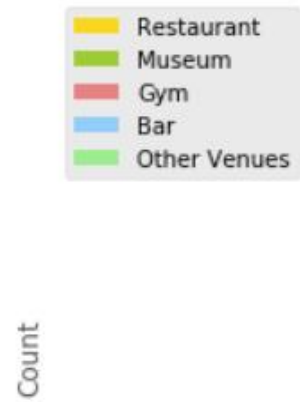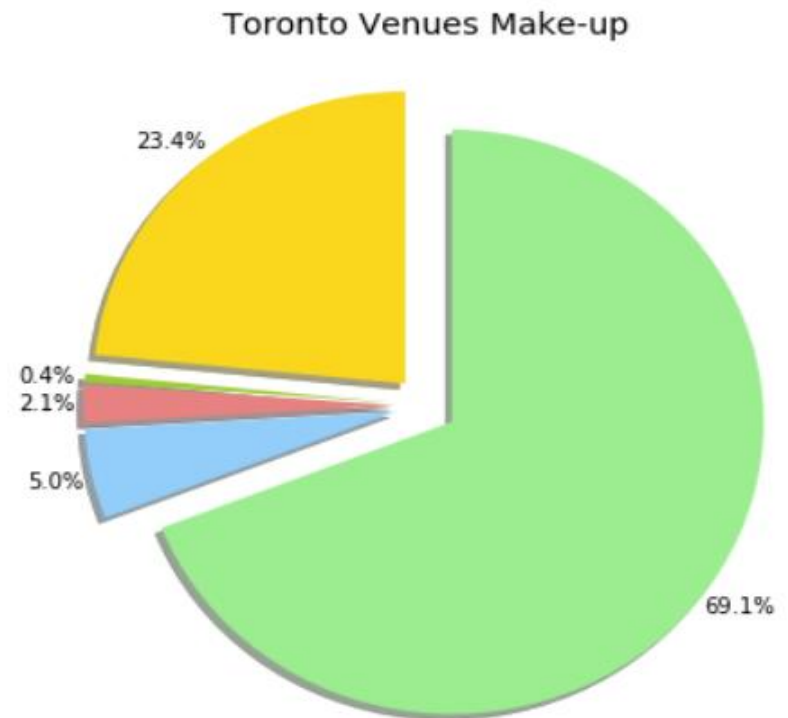
Manhattan Restaurant Make-up

Toronto Restaurant Make-up

Manhattan Italian Restaurant Distribution

As marked in red, it is distributed in most of the neighborhoods

Toronto Italian Restaurant Distribution

As marked in red, it is more gathered in downtown area or city center.

Conclusion and Discussion

- Similarity: Italian restaurant is the most common restaurant in both cities

- Difference: Manhattan has more bars while Toronto contains more Coffee Shop; Italian restaurants distribute in almost every neighborhoods in Manhattan while in Toronto they gather in downtown area

- Accuracy would increase with more detailed venue category count (not only using keywords)