



# CAPSTONE PROJECT


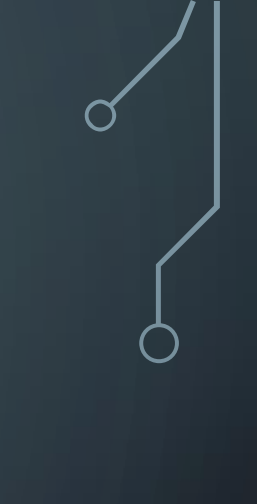
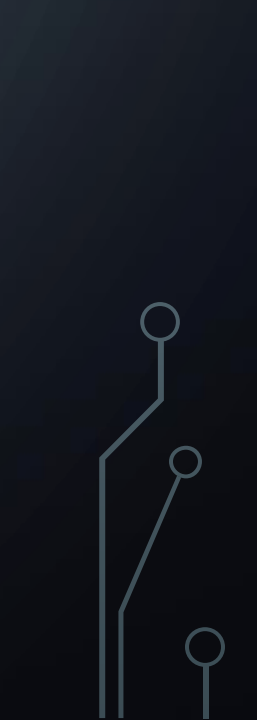
NEW YORK VS TORONTO

# INTRODUCTION/BUSINESS PROBLEM

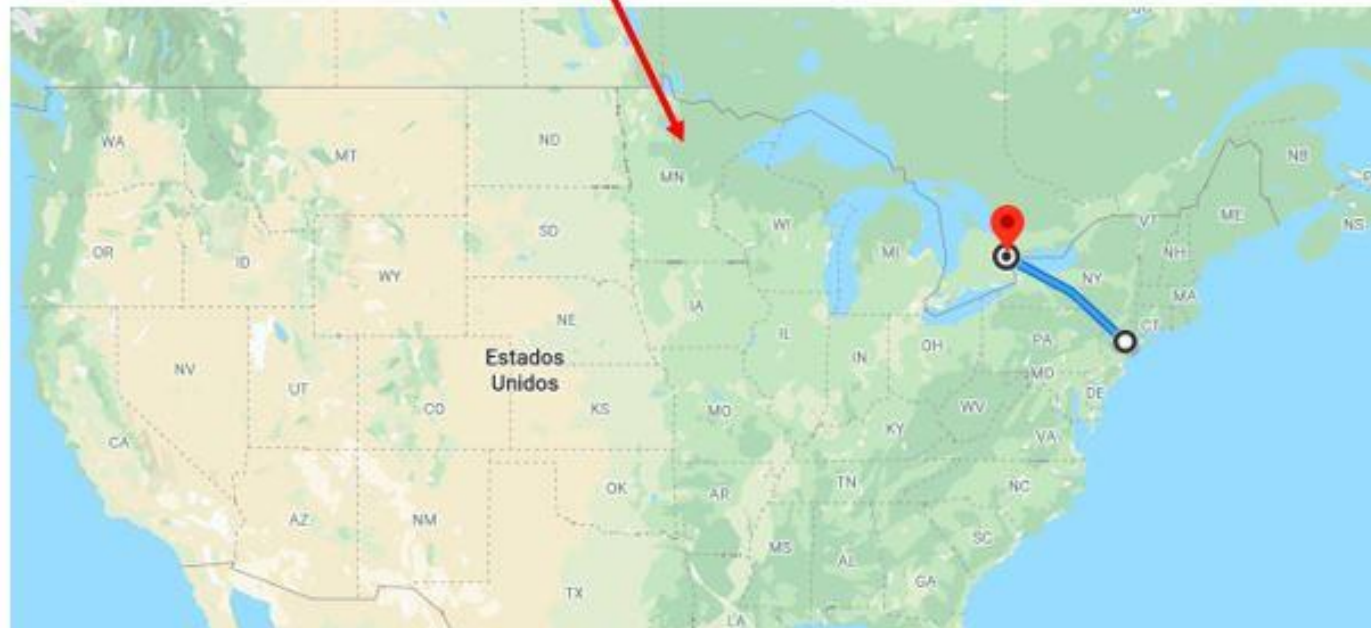
- This project is about a company based on New York (Manhattan) that is considering moving (or a new branch) in Toronto, CA. This project's goal is to compare two cities.
- The company is concerned about the employees, considering that some of them will eventually need to move between cities, they want to establish their headquarters in similar neighborhoods.
- In order to compare the cities and the neighborhoods, this project will compare the venues in each place and try to establish a similarity
- The final question to be answered is:
- Are there similar neighborhoods in Manhattan and Toronto? which ones?



# DATA

- In order to compare the cities, this project will obtain data from the Foursquare API. The data will be venues placed in each designated area.
  - Geolocation data for the cities will be obtained from known databases such as Wikipedia and geolocation python libraries.
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# DATA



# METHODOLOGY

1. Obtain and define Neighborhoods in NEW YORK
2. Obtain and define Neighborhoods in TORONTO
3. Obtain Foursquare data for NEW YORK
4. Obtain Foursquare data for TORONTO
5. Cluster Neighborhoods (NEW YORK and TORONTO)

# METHODOLOGY

## NEW YORK DATA

```
[77]: neighborhoods
```

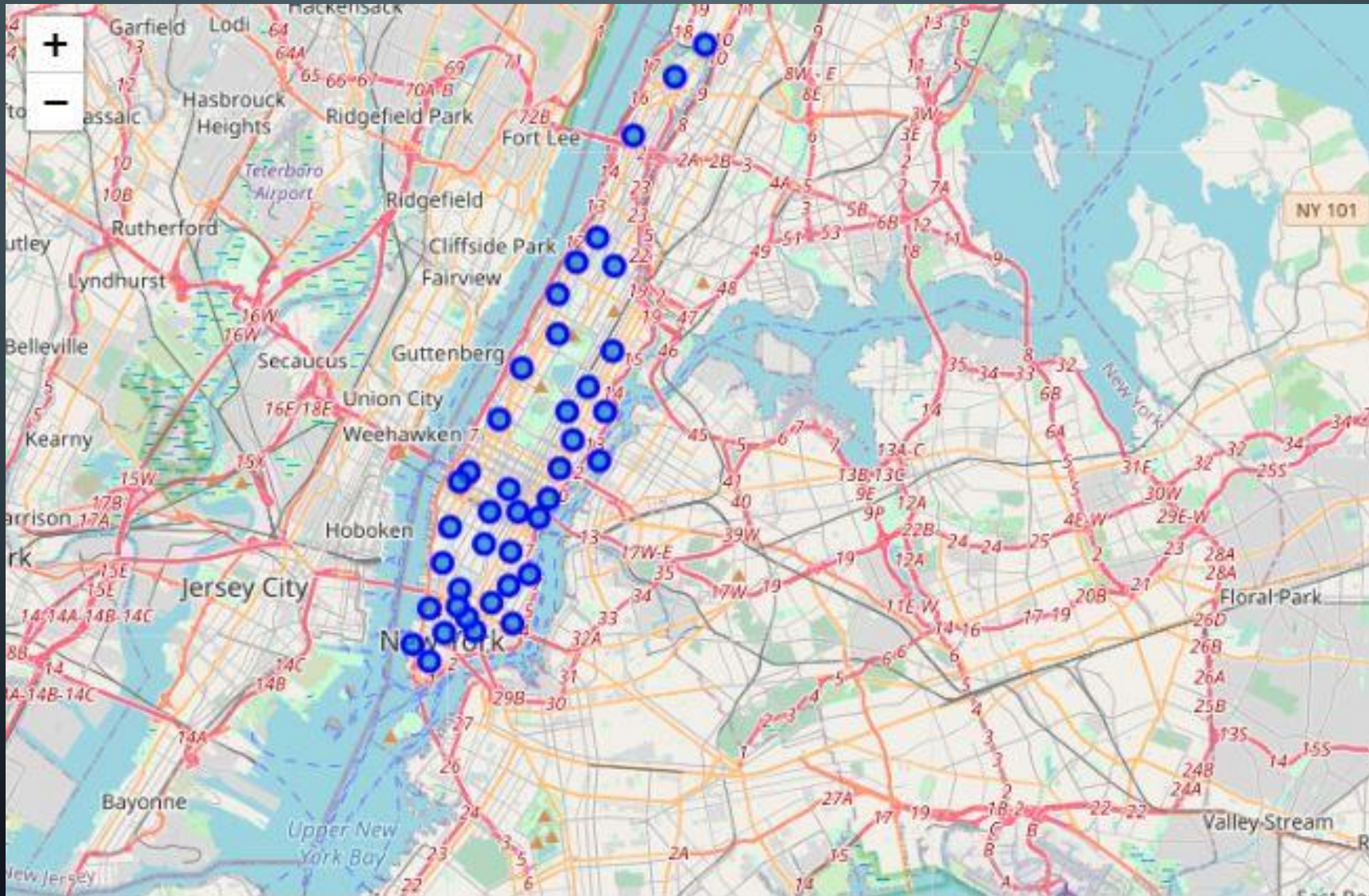
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	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585
5	Bronx	Kingsbridge	40.881687	-73.902818



# METHODOLOGY

## NEW YORK DATA



# METHODOLOGY

## TORONTO DATA

[23] :

	Borough	Neighborhood	Latitude	Longitude
0	East Toronto	The Beaches	43.676357	-79.293031
1	East Toronto	The Danforth West, Riverdale	43.679557	-79.352188
2	East Toronto	India Bazaar, The Beaches West	43.668999	-79.315572
3	East Toronto	Studio District	43.659526	-79.340923
4	Central Toronto	Lawrence Park	43.728020	-79.388790



# METHODOLOGY

## TORONTO DATA



# METHODOLOGY

## FOURSQUARE NEW YORK DATA

	Neighborhood	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	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Battery Park City	Park	Memorial Site	Food Court	Hotel	Gourmet Shop	Sandwich Place	Garden	Monument / Landmark	Steakhouse	Burrito Place
1	Carnegie Hill	Coffee Shop	Gym / Fitness Center	Bookstore	Pizza Place	Italian Restaurant	Gym	Yoga Studio	Shoe Store	Spa	French Restaurant
2	Central Harlem	Chinese Restaurant	African Restaurant	American Restaurant	French Restaurant	Bar	Café	Library	Boutique	Fried Chicken Joint	Spa
3	Chelsea	American Restaurant	Cupcake Shop	Hotel	Ice Cream Shop	Market	Theater	Seafood Restaurant	Coffee Shop	Chinese Restaurant	Office
4	Chinatown	Chinese Restaurant	Spa	Ice Cream Shop	Sandwich Place	Historic Site	Salon / Barbershop	Bike Shop	New American Restaurant	Noodle House	Cocktail Bar

# METHODOLOGY

## FOURSQUARE TORONTO DATA

	Neighborhood	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	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Berczy Park	Coffee Shop	Beer Bar	Cocktail Bar	Seafood Restaurant	Cheese Shop	Tailor Shop	Liquor Store	Café	Basketball Stadium	Bakery
1	Brockton, Parkdale Village, Exhibition Place	Café	Coffee Shop	Breakfast Spot	Pet Store	Bakery	Performing Arts Venue	Convenience Store	Climbing Gym	Restaurant	Burrito Place
2	Business reply mail Processing Centre	Light Rail Station	Yoga Studio	Spa	Gym / Fitness Center	Fast Food Restaurant	Farmers Market	Comic Shop	Park	Pizza Place	Burrito Place
3	CN Tower, King and Spadina, Railway Lands, Har...	Airport Lounge	Airport Service	Airport Terminal	Airport	Harbor / Marina	Coffee Shop	Plane	Rental Car Location	Sculpture Garden	Boutique
4	Central Bay Street	Coffee Shop	Café	Yoga Studio	Sandwich Place	Japanese Restaurant	Italian Restaurant	Bubble Tea Shop	Ice Cream Shop	Spa	Hotel

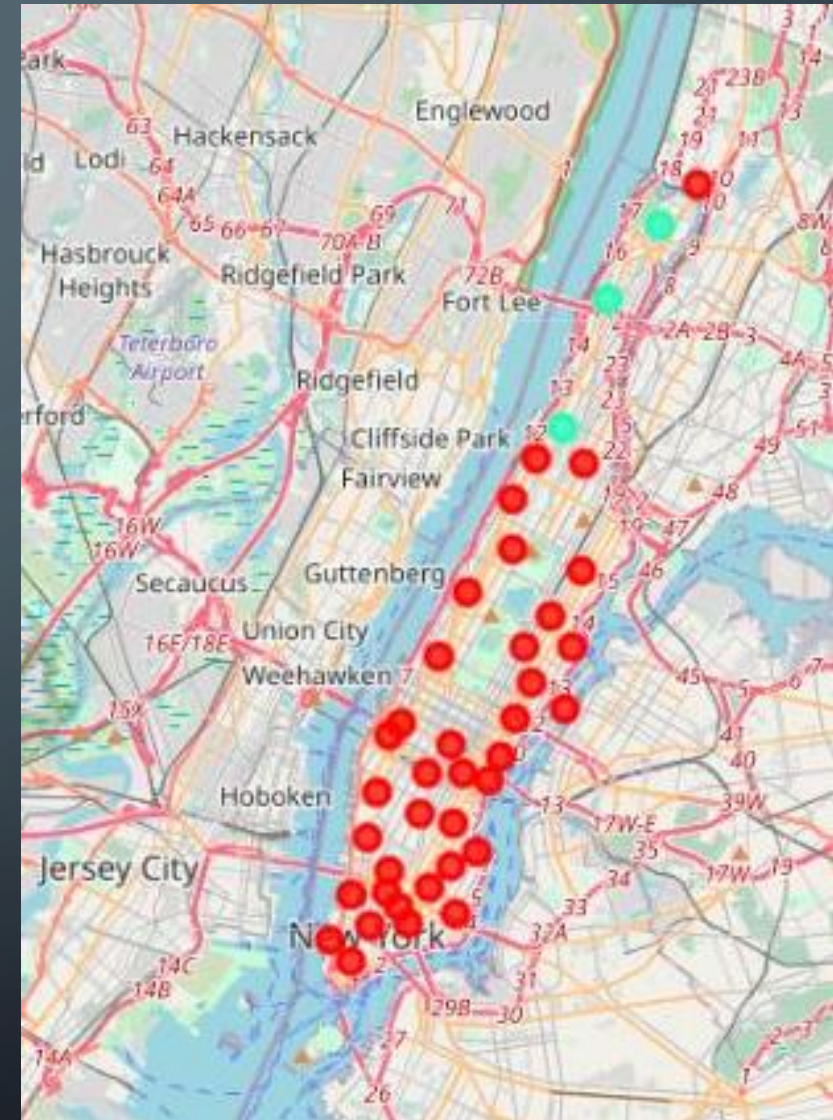


# METHODOLOGY

## CLUSTERING NEIGHBORHOODS



TORONTO

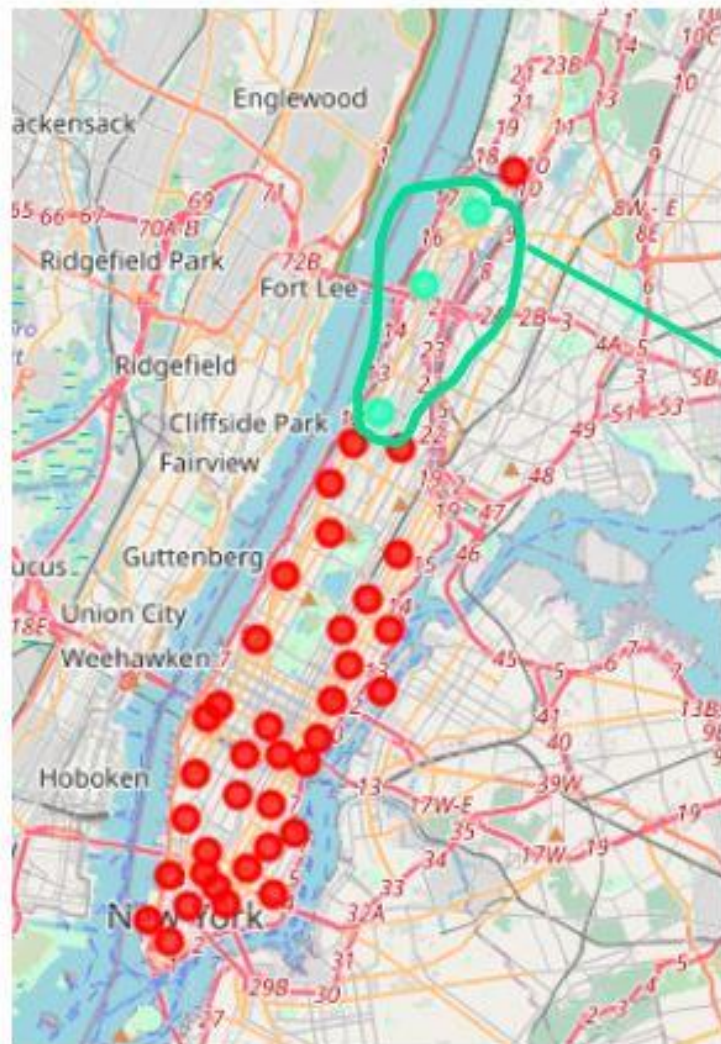


NEW YORK

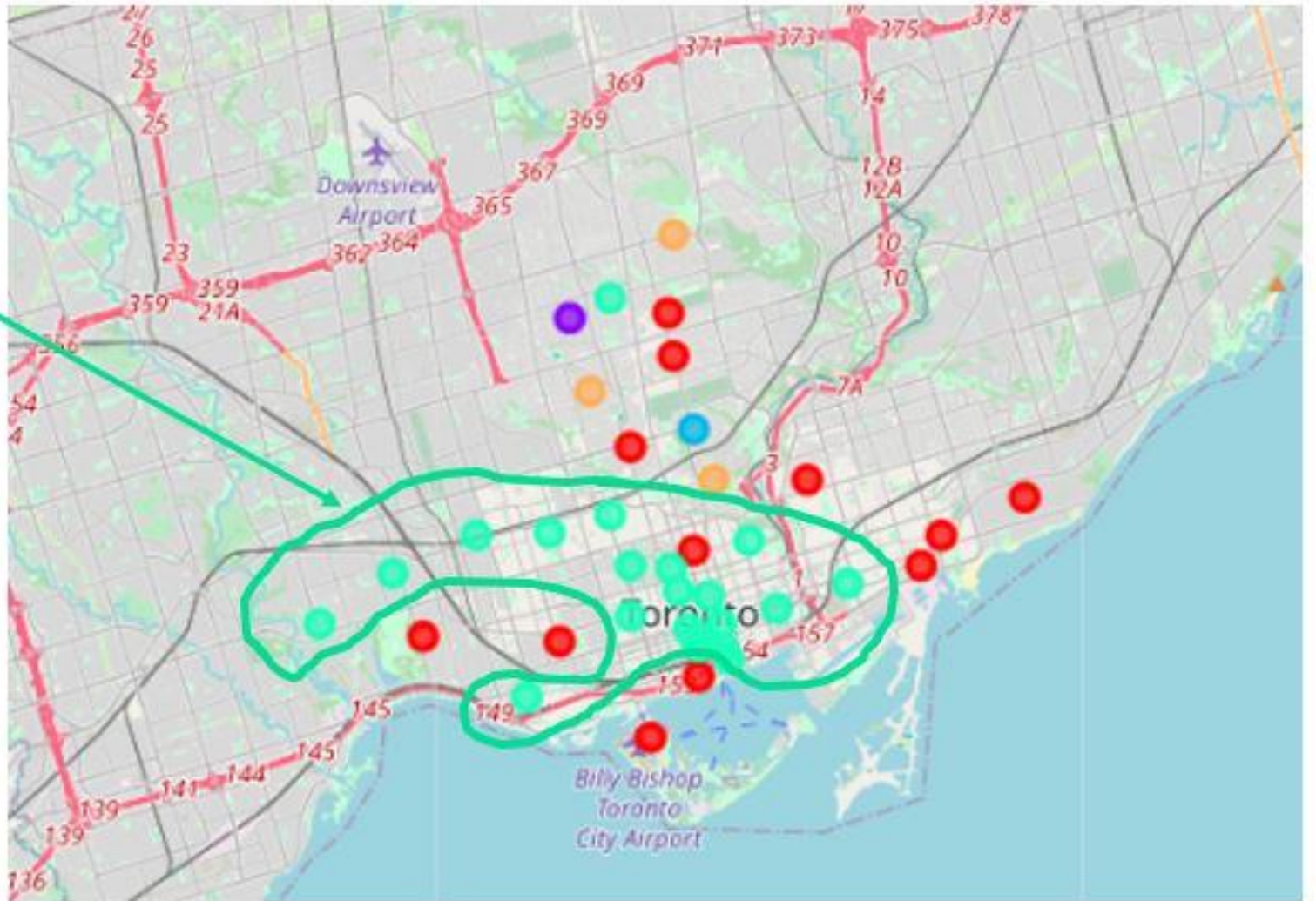


# METHODOLOGY

## CLUSTERING NEIGHBORHOODS



MANHATTAN (NY)



TORONTO (CA)



# CONCLUSION

- After all the analysis we come to the conclusion that New York (Manhattan) and Toronto have similar neighborhoods and it is possible for a company to have offices in both cities.
- The company would probably have to settle in similar neighborhoods. Looking at the image below, we can see that the company would either have offices on the green areas or in the red areas.

