



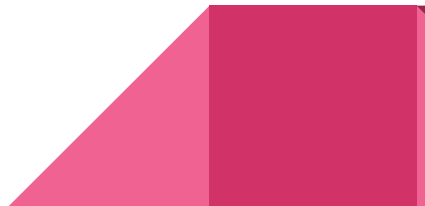
Compare the Neighborhoods of Toronto and New York City

Compare the Neighborhoods are valuable for Businesspeople

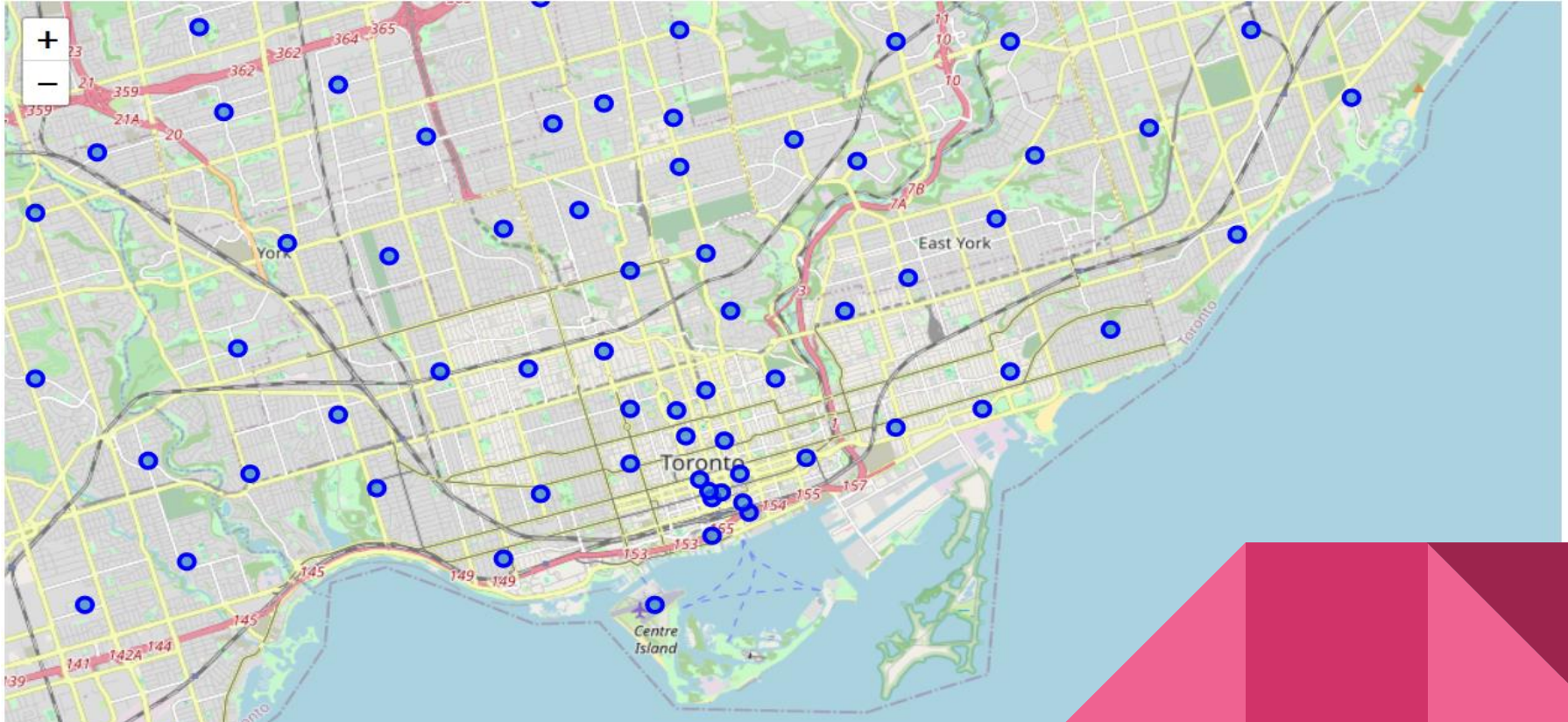
- Generally, better understanding of similarities and differences between the two cities which will make it known to businesspeople what types of businesses are more likely to thrive in both cities.
- What are the neighborhoods that are suitable for each type of business, and what types of businesses are not very desirable in each city.
- Allows businesspeople to take better and more effective decisions regarding where to open their businesses.

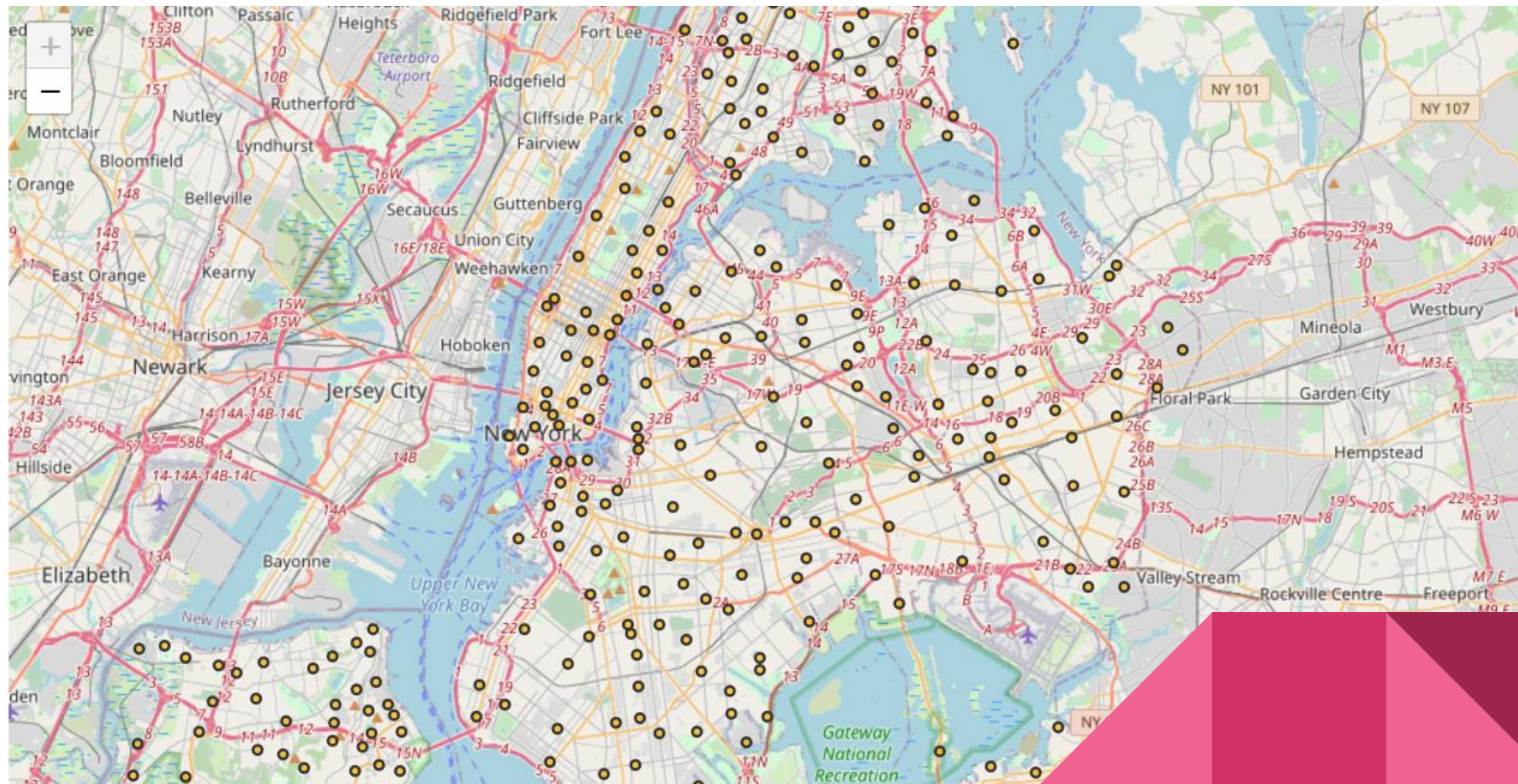


Data acquisition and cleaning

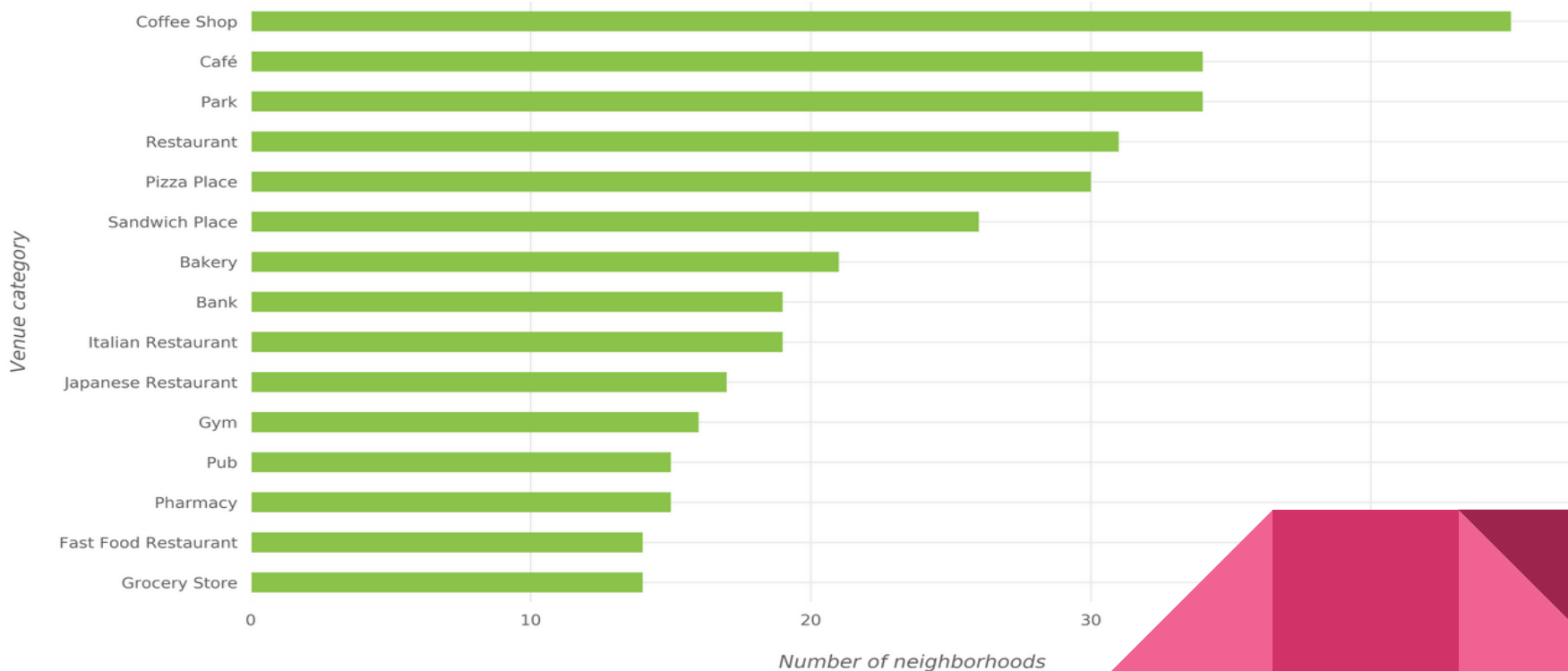
- Neighborhood Data: datasets that lists the names of the neighborhoods of Toronto and NYC and their latitude and longitude coordinates. We have some of this data provided by the instructors of "IBM Data Science Professional Certificate" and we also need to scrape some data from the internet
 - Venues data: data that describes the top 100 venues (restaurants, cafes, parks, museums, etc.) in each neighborhood of the two cities. The data should list the venues of each neighborhood with their categories
 - In total, 400 rows and 5 features in the raw dataset.
 - Unrelated data for features were dropped.
 - Cleaned data contains 5 features.
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Choropleth Maps for Neighborhoods Analysis

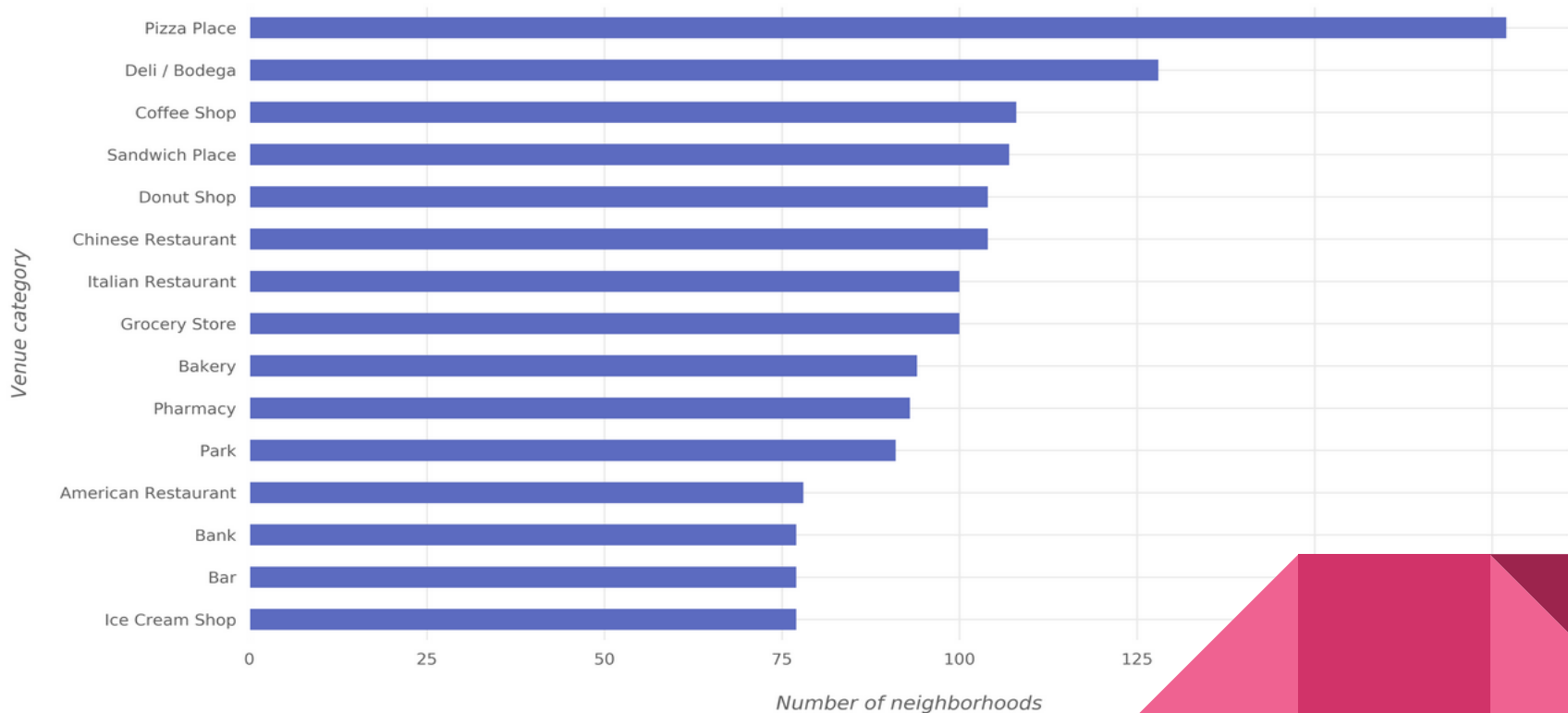




Most widespread venue categories in Toronto



Most widespread venue categories in NYC



Clustering of Neighborhoods

Cluster 1:

Category	% of venues
Coffee Shop	5.213632
Café	3.357070
Park	2.594100
Italian Restaurant	2.466938
Bakery	2.187182
Pizza Place	2.187182
Bar	2.161750

Cluster 2:

Category	% of venues
Pizza Place	7.676835
Pharmacy	3.955749
Chinese Restaurant	3.788133
Donut Shop	3.553470
Bank	3.519946
Grocery Store	3.519946
Sandwich Place	3.285283

Cluster 3:

Category	% of venues
Deli / Bodega	17.500000
Italian Restaurant	7.222222
Pizza Place	6.388889
Donut Shop	2.500000
Bakery	2.500000
Hotel	2.222222
Beach	2.222222

Cluster 4:

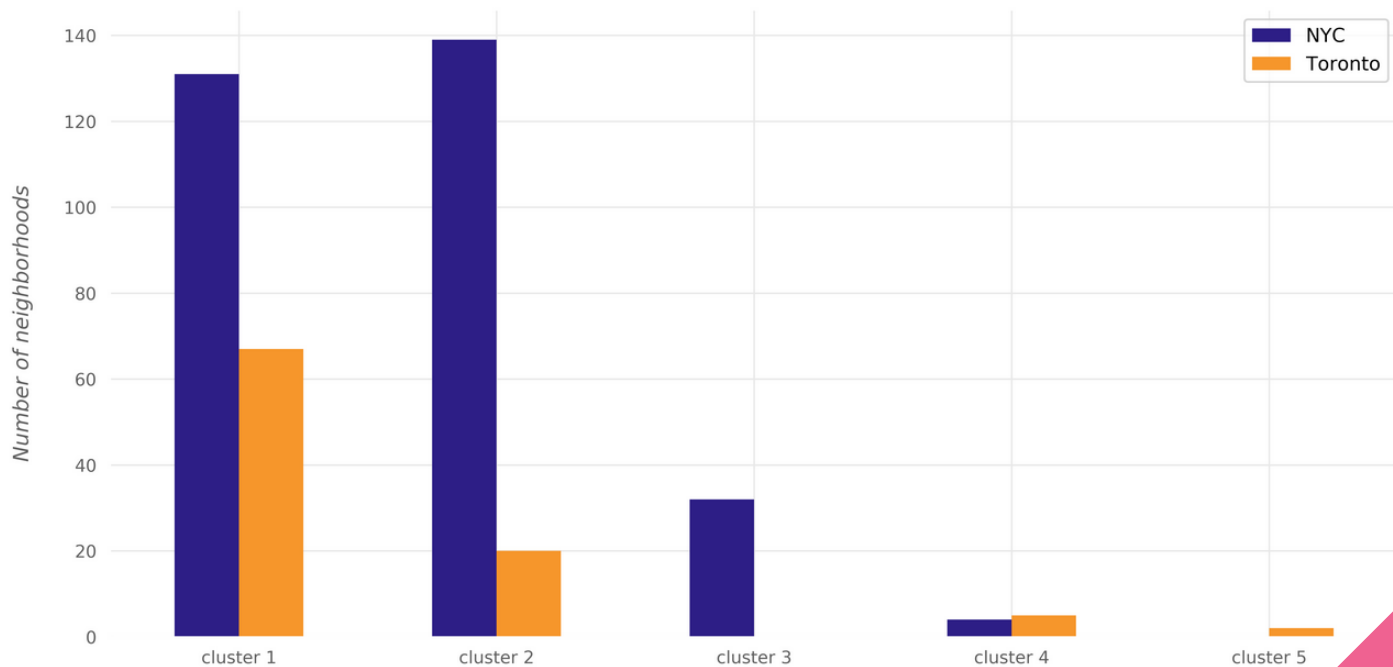
Category	% of venues
Park	53.571429
Playground	10.714286
Pool	7.142857
Business Service	3.571429
South American Restaurant	3.571429
Boat or Ferry	3.571429
Grocery Store	3.571429

Cluster 5:

Category	% of venues
Baseball Field	66.666667
Furniture / Home Store	33.333333



Number of NYC neighborhoods and the number of Toronto neighborhoods in each cluster of the five resulting clusters



Conclusion and future directions

- The results showed that there are venue categories that are more common in some cluster than the others.
- The most common venue categories differ from one cluster to the other.
- a deeper analysis—taking more aspects into account—is performed, it might result in discovering different style in each cluster based on the most common categories in the cluster.

