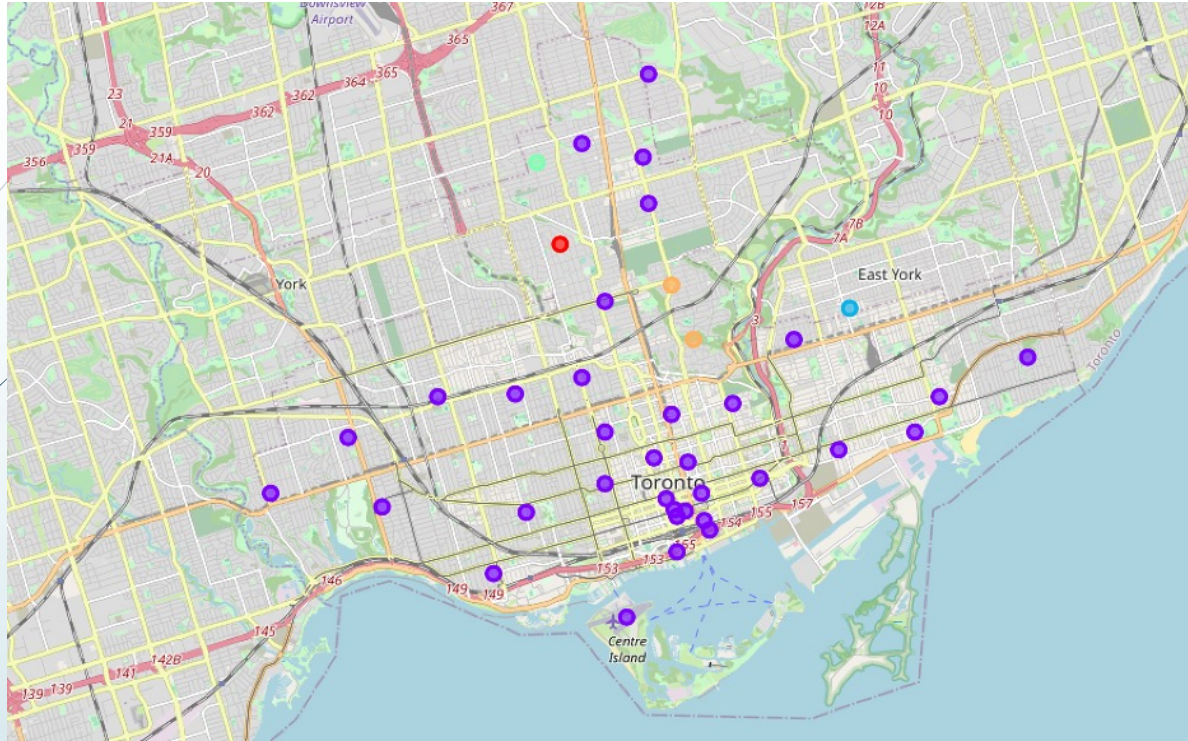




Exploring Toronto through Clustering

We analyzed the neighborhoods and boroughs of Toronto to point out the most common attractions and venues for each area.

Toronto Represented by Five Clusters



The neighborhoods of Toronto can be grouped – clustered – according to the types of venues occurring most commonly in that area.

Quick Facts

- There are 216 unique categories of businesses in the Toronto area
- Visitors to an area generally express a preference for businesses that populate that area
- Neighborhood information can be combined with local attractions to create a visualization of the area

Geographical
Information



Business
Information



Informed
Traveler

Coffee and Food Shops are Common Businesses Found in Downtown Toronto

	PostalCode	Borough	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636	1	Coffee Shop	Bakery	Park	Café	Pub
1	M5B	Downtown Toronto	Garden District, Ryerson	43.657162	-79.378937	1	Coffee Shop	Café	Clothing Store	Hotel	Japanese Restaurant
2	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418	1	Coffee Shop	Italian Restaurant	Café	Cocktail Bar	Clothing Store
3	M4E	East Toronto	The Beaches	43.676357	-79.293031	1	Coffee Shop	Health Food Store	Pub	Monument / Landmark	Malay Restaurant
4	M5E	Downtown Toronto	Berczy Park	43.644771	-79.373306	1	Coffee Shop	Cocktail Bar	Sandwich Place	Bakery	Seafood Restaurant

Business types can be used to create clusters that are geographically near each other.

CLUSTER ZERO

	Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
21	Central Toronto	0	Trail	Jewelry Store	Mexican Restaurant	Sushi Restaurant	Yoga Studio

Cluster Zero is in Central Toronto. Its most common attraction is a hiking trail. Following the trail, a jewelry store and two different styles of restaurants are the most popular venues.

CLUSTER NUMBER ONE

	Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Downtown Toronto	1	Coffee Shop	Bakery	Park	Café	Pub
1	Downtown Toronto	1	Coffee Shop	Café	Clothing Store	Hotel	Japanese Restaurant
2	Downtown Toronto	1	Coffee Shop	Italian Restaurant	Café	Cocktail Bar	Clothing Store
3	East Toronto	1	Coffee Shop	Health Food Store	Pub	Monument / Landmark	Malay Restaurant
4	Downtown Toronto	1	Coffee Shop	Cocktail Bar	Sandwich Place	Bakery	Seafood Restaurant
5	Downtown Toronto	1	Coffee Shop	Sandwich Place	Sushi Restaurant	Italian Restaurant	Japanese Restaurant

Cluster One is mainly in the Downtown Toronto area. Its most popular businesses are coffee shops and various types of food shops.

CLUSTER NUMBER TWO

	Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
9	East York/East Toronto	2	Park	Convenience Store	Yoga Studio	Molecular Gastronomy Restaurant	Mac & Cheese Joint

*Cluster Number Two is in the East York/ East Toronto area, and its most common venue is a park.
The second most common venue is a convenience store.*

CLUSTER NUMBER THREE

	Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
19	Central Toronto	3	Home Service	Garden	Yoga Studio	Monument / Landmark	Mac & Cheese Joint

A home service is the most popular venue in Cluster Three. A garden and yoga studio are the next most popular venues.

CLUSTER NUMBER FOUR

	Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
29	Central Toronto	4	Park	Restaurant	Playground	Mac & Cheese Joint	Malay Restaurant
33	Downtown Toronto	4	Park	Playground	Trail	Molecular Gastronomy Restaurant	Mac & Cheese Joint

Cluster Four contains parks located in the Central and Downtown Toronto boroughs. A playground also features prominently in this cluster.

Conclusion

- Using an open source method such as Wikipedia, the geographic information of a city can be found.
- Combining this data with an API such as Foursquare, a picture of the environment can be produced.
- Going one step further to cluster similar information, the data gained can be used in practical ways.
- For example, the most popular attractions and venues in a neighborhood can be mapped out and used by travelers to determine the area in which they would prefer to stay.