

# Coursera Capstone – The Battles of Neighborhoods

# Introduction

- Toronto is the capital city of the Canadian province of Ontario.
- With a recorded population of 2,731,571 in 2016, it is the most populous city in Canada and the fourth most populous city in North America.

# Introduction

- The city is the anchor of the Golden Horseshoe, an urban agglomeration of 9,245,438 people (as of 2016) surrounding the western end of Lake Ontario, while the Greater Toronto Area (GTA) proper had a 2016 population of 6,417,516.
- Toronto is an international centre of business, finance, arts, and culture, and is recognized as one of the most multicultural and cosmopolitan cities in the world.

# Business Problem

- The objective of this report is to analyze and select the best location in the city of Toronto, Canada, to open a new shopping mall. This project is mainly focused on geospatial analysis of the Toronto City to understand which would be the best place to open a new mall.

# Source of Data and Methods to Extract Data

- Data could be found from here [Wikipedia](#).
- This link contains a list of neighborhoods in Toronto. The BeautifulSoup package was used to extract the data from the Wikipedia page.
- Then, the latitude and longitude coordinates of the neighborhoods were gathered using the Geocoder package.
- After that, Foursquare API was used to get the venue data of these neighborhoods.

# The Neighborhoods in Toronto

	PostalCode	Borough	Neighborhood
0	M3A	North York	Parkwoods
1	M4A	North York	Victoria Village
2	M5A	Downtown Toronto	Regent Park, Harbourfront
3	M6A	North York	Lawrence Manor, Lawrence Heights
4	M7A	Queen's Park	Ontario Provincial Government
5	M9A	Etobicoke	Islington Avenue
6	M1B	Scarborough	Malvern, Rouge
7	M3B	North York	Don Mills North
8	M4B	East York	Parkview Hill, Woodbine Gardens
9	M5B	Downtown Toronto	Garden District, Ryerson
10	M6B	North York	Glencairn
11	M9B	Etobicoke	West Deane Park, Princess Gardens, Martin Grov...
12	M1C	Scarborough	Rouge Hill, Port Union, Highland Creek
13	M3C	North York	Don Mills South
14	M4C	East York	Woodbine Heights
15	M5C	Downtown Toronto	St. James Town
16	M6C	York	Humewood-Cedarvale
17	M9C	Etobicoke	Eringate, Bloordale Gardens, Old Burnhamthorpe...
18	M1E	Scarborough	Guildwood, Morningside, West Hill
19	M4E	East Toronto	The Beaches
20	M5E	Downtown Toronto	Berczy Park
21	M6E	York	Caledonia-Fairbanks
22	M1G	Scarborough	Woburn
23	M4G	East York	Leaside
24	M5G	Downtown Toronto	Central Bay Street
25	M6G	Downtown Toronto	Christie
26	M1H	Scarborough	Cedarbrae
27	M2H	North York	Hillcrest Village
28	M3H	North York	Bathurst Manor, Wilson Heights, Downsview North

# With Latitude and Longitude

	PostalCode	Borough	Neighborhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.7545	-79.3300
1	M4A	North York	Victoria Village	43.7276	-79.3148
2	M5A	Downtown Toronto	Regent Park, Harbourfront	43.6555	-79.3626
3	M6A	North York	Lawrence Manor, Lawrence Heights	43.7223	-79.4504
4	M7A	Queen's Park	Ontario Provincial Government	43.6641	-79.3889
5	M9A	Etobicoke	Islington Avenue	43.6662	-79.5282
6	M1B	Scarborough	Malvern, Rouge	43.8113	-79.1930
7	M3B	North York	Don Mills North	43.7450	-79.3590
8	M4B	East York	Parkview Hill, Woodbine Gardens	43.7063	-79.3094
9	M5B	Downtown Toronto	Garden District, Ryerson	43.6572	-79.3783
10	M6B	North York	Glencairn	43.7081	-79.4479
11	M9B	Etobicoke	West Deane Park, Princess Gardens, Martin Grov...	43.6505	-79.5517
12	M1C	Scarborough	Rouge Hill, Port Union, Highland Creek	43.7878	-79.1564
13	M3C	North York	Don Mills South	43.7334	-79.3329
14	M4C	East York	Woodbine Heights	43.6913	-79.3116
15	M5C	Downtown Toronto	St. James Town	43.6513	-79.3756
16	M6C	York	Humewood-Cedarvale	43.6915	-79.4307
17	M9C	Etobicoke	Eringate, Bloordale Gardens, Old Burnhamthorpe...	43.6437	-79.5767
18	M1E	Scarborough	Guildwood, Morningside, West Hill	43.7678	-79.1866
19	M4E	East Toronto	The Beaches	43.6784	-79.2941
20	M5E	Downtown Toronto	Berczy Park	43.6456	-79.3754
21	M6E	York	Caledonia-Fairbanks	43.6889	-79.4507
22	M1G	Scarborough	Woburn	43.7712	-79.2144
23	M4G	East York	Leaside	43.7124	-79.3644
24	M5G	Downtown Toronto	Central Bay Street	43.6564	-79.3860
25	M6G	Downtown Toronto	Christie	43.6683	-79.4205
26	M1H	Scarborough	Cedarbrae	43.7686	-79.2389
27	M2H	North York	Hillcrest Village	43.8015	-79.3577
28	M3H	North York	Bathurst Manor, Wilson Heights, Downsview North	43.7535	-79.4472
29	M4H	East York	Thorncliffe Park	43.7059	-79.3464

# Add Venue Category

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Regent Park, Harbourfront	43.6555	-79.3626	Tandem Coffee	43.653559	-79.361809	Coffee Shop
1	Regent Park, Harbourfront	43.6555	-79.3626	Roselle Desserts	43.653447	-79.362017	Bakery
2	Regent Park, Harbourfront	43.6555	-79.3626	Souvlaki Express	43.655584	-79.364438	Greek Restaurant
3	Regent Park, Harbourfront	43.6555	-79.3626	Berkeley Church	43.655123	-79.365873	Event Space
4	Regent Park, Harbourfront	43.6555	-79.3626	Figs Breakfast & Lunch	43.655675	-79.364503	Breakfast Spot



# Explore

	Borough	Neighborhood	Cluster Labels	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
1	Downtown Toronto	Garden District, Ryerson	4	Coffee Shop	Sandwich Place	Clothing Store	Café	Hotel	Cosmetics Shop	Pizza Place	Middle Eastern Restaurant	Bank	Japanese Restaurant
2	Downtown Toronto	St. James Town	4	Coffee Shop	Italian Restaurant	Café	Cocktail Bar	Restaurant	Clothing Store	Diner	Bakery	Gastropub	Seafood Restaurant
3	Downtown Toronto	Berczy Park	4	Sandwich Place	Hotel	Coffee Shop	Cocktail Bar	Japanese Restaurant	Beer Bar	Café	Bakery	Italian Restaurant	Bank
6	Downtown Toronto	Richmond, Adelaide, King	4	Coffee Shop	Café	Sandwich Place	Hotel	Restaurant	Gym	Asian Restaurant	Sushi Restaurant	Bank	Deli / Bodega
8	Downtown Toronto	Toronto Dominion Centre, Design Exchange	4	Coffee Shop	Café	Hotel	Sandwich Place	Asian Restaurant	Gym	Pharmacy	Restaurant	Salad Place	Japanese Restaurant
9	Downtown Toronto	Commerce Court, Victoria Hotel	4	Coffee Shop	Café	Sandwich Place	Hotel	Bank	Restaurant	Japanese Restaurant	Asian Restaurant	Gym	Sushi Restaurant
11	Downtown Toronto	Kensington Market, Chinatown, Grange Park	4	Café	Vegetarian / Vegan Restaurant	Burger Joint	Mexican Restaurant	Gaming Cafe	Coffee Shop	Bakery	Art Gallery	Arts & Crafts Store	Park
12	Downtown Toronto	CN Tower, King and Spadina, Railway Lands, Har...	4	Coffee Shop	Italian Restaurant	Wings Joint	Park	Restaurant	Sandwich Place	Speakeasy	Gym / Fitness Center	Pub	French Restaurant
15	Downtown Toronto	First Canadian Place, Underground city	4	Coffee Shop	Café	Sandwich Place	Hotel	Bank	Restaurant	Japanese Restaurant	Asian Restaurant	Gym	Sushi Restaurant
16	Downtown Toronto	Church and Wellesley	4	Sushi Restaurant	Japanese Restaurant	Gay Bar	Restaurant	Burrito Place	Fast Food Restaurant	Indian Restaurant	Mediterranean Restaurant	Dance Studio	Coffee Shop