

# The Battle of Neighborhoods IBM Capstone Project.

The Best Neighborhood in Toronto to open a Greek Restaurant.

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## 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.

Toronto is an international center of business, finance, arts, and culture, and is recognized as one of the most multicultural and cosmopolitan cities in the world.

The diverse population of Toronto reflects its current and historical role as an important destination for immigrants to Canada. More than 50 percent of residents belong to a visible minority population group, and over 200 distinct ethnic origins are represented among its inhabitants. While the majority of Torontonians speak English as their primary language, over 160 languages are spoken in the city.

Toronto is a prominent center for music, theatre, motion picture production, and television production, and is home to the headquarters of Canada's major national broadcast networks and media outlets. Its varied cultural institutions, which include numerous museums and galleries, festivals and public events, entertainment districts, national historic sites, and sports activities, attract over 43 million tourists each year.

Its economy is highly diversified with strengths in technology, design, financial services, life sciences, education, arts, fashion, aerospace, environmental innovation, food services, and tourism.

## Business Problem:

The goal of this analysis is to use Foursquare location data and regional clustering of venue information to determine what is the optimal neighborhood in Toronto for an entrepreneur to open a Greek restaurant. As Greek is the 20<sup>th</sup> most commonly spoken language in the Toronto CMA, with 41,225 people (0.7% of the population) speaking Greek. In the City of Toronto per se, Greek is the 17<sup>th</sup> most common ethnic origin, being claimed by 57,425 people (2.1% of the population), as per 2016 Census. For this reason, there are numerous opportunities to open a new Greek restaurant there. Through this project we are trying to locate the most suitable neighborhood in Toronto, Canada for a Greek entrepreneur to open a new Greek restaurant.

## Data Overview:

The data being used in this analysis had been provided from multiple sources. First of all, Toronto's neighborhoods have been extracted from [Wikipedia](#) by using a web scraper. Furthermore, we used Geocoder python library in order to obtain the Geographical location of the neighborhoods and finally, Foursquare API has been used for the purpose of analyzing venue data and especially Greek restaurants in Toronto, Canada. Venue data will help to consider which are the best neighborhoods for an entrepreneur to open a Greek restaurant. Pictures below depict an example of the data which has been used.

Postal Code ↕	Borough ↕	Neighbourhood ↕
M1A	Not assigned	Not assigned
M2A	Not assigned	Not assigned
M3A	North York	Parkwoods
M4A	North York	Victoria Village
M5A	Downtown Toronto	Regent Park, Harbourfront
M6A	North York	Lawrence Manor, Lawrence Heights
M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government
M8A	Not assigned	Not assigned
M9A	Etobicoke	Islington Avenue, Humber Valley Village
M1B	Scarborough	Malvern, Rouge
M2B	Not assigned	Not assigned
M3B	North York	Don Mills
M4B	East York	Parkview Hill, Woodbine Gardens
M5B	Downtown Toronto	Garden District, Ryerson
M6B	North York	Glencairn

Picture 1: Neighborhoods and Postal Codes provided by Wikipedia.

	A	B	C
1	Postal Code	Latitude	Longitude
2	M1B	43.8066863	-79.1943534
3	M1C	43.7845351	-79.1604971
4	M1E	43.7635726	-79.1887115
5	M1G	43.7709921	-79.2169174
6	M1H	43.773136	-79.2394761
7	M1J	43.7447342	-79.2394761
8	M1K	43.7279292	-79.2620294
9	M1L	43.7111117	-79.2845772
10	M1M	43.716316	-79.2394761
11	M1N	43.692657	-79.2648481
12	M1P	43.7574096	-79.273304
13	M1R	43.7500715	-79.2958491
14	M1S	43.7942003	-79.2620294

Picture 2: Geospatial data for every Postal Code of Toronto.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Malvern, Rouge	43.806686	-79.194353	Wendy's	43.807448	-79.199056	Fast Food Restaurant
1	Rouge Hill, Port Union, Highland Creek	43.784535	-79.160497	Royal Canadian Legion	43.782533	-79.163085	Bar
2	Guildwood, Morningside, West Hill	43.763573	-79.188711	RBC Royal Bank	43.766790	-79.191151	Bank
3	Woburn	43.770992	-79.216917	Starbucks	43.770037	-79.221156	Coffee Shop
4	Cedarbrae	43.773136	-79.239476	Drupati's Roti & Doubles	43.775222	-79.241678	Caribbean Restaurant

Picture 3: Example of data provided by Foursquare for venues in different Neighborhoods.