

Applied Data Science Capstone Project

The Battle of Neighborhoods

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Introduction

Toronto is the most populated city in Canada with over 5 million citizens and is recognized as one of the most multicultural and cosmopolitan cities in the world. It is the capital of Ontario and it is located in the east-central region of the country. Toronto is one of Canada's leading tourism destinations. In 2017, the Toronto-area received 43.7 million tourists.

Business problem

In this project we assume the role of an investor who wants to open a Greek restaurant in Toronto. Toronto has an array of tourist attractions. Some of these attractions are notable worldwide like the CN tower and Ripley's Aquarium of Canada. Using public datasets, we need to find where should we open the new restaurant. First of all, we need to find the places that don't already have a Greek restaurant. Next, we need to find the place with the most tourist attractions.

Data

The data we are going to use for this project will come from:

- https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M. From here we'll find all the neighborhoods of Toronto and their postal codes.
- https://cocl.us/Geospatial_data. From this csv file we will find the latitudes and longitudes of the neighborhoods.
- The Foursquare API. From here we will pull information on different venues for all the neighborhoods.

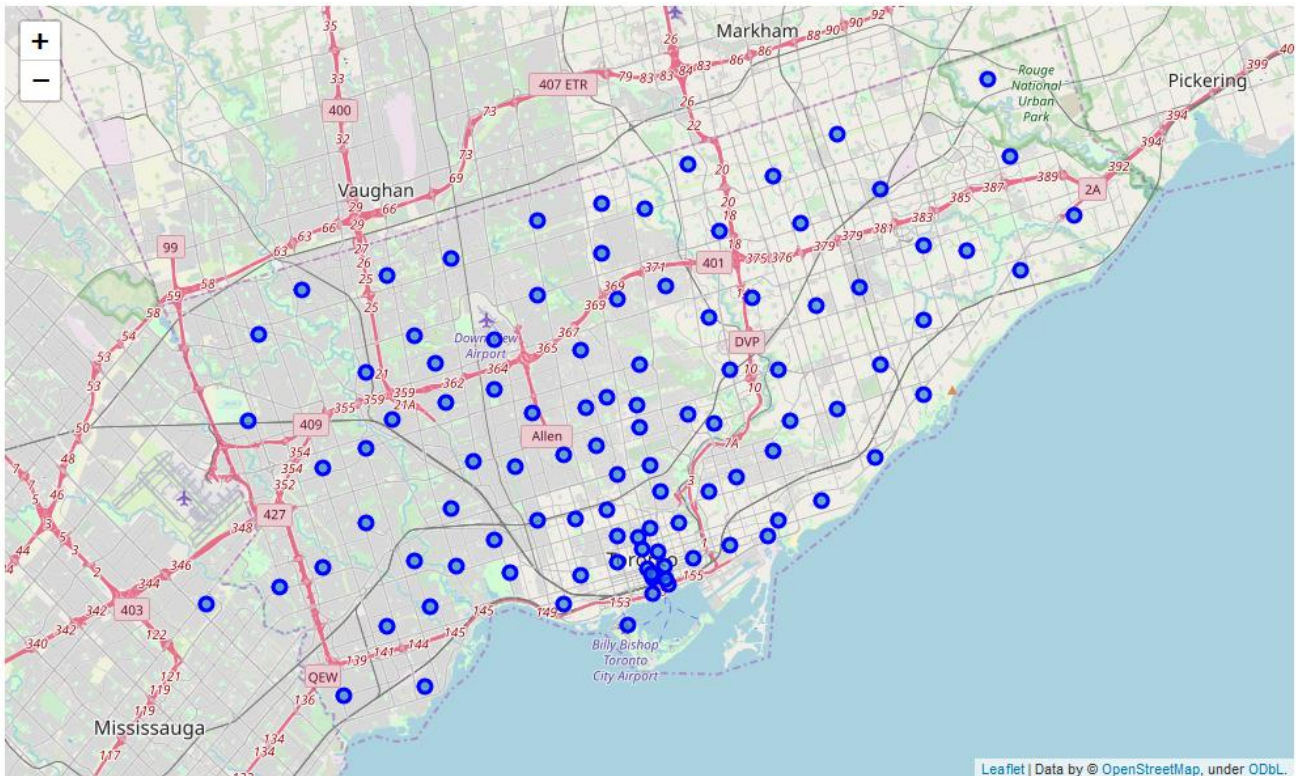
Methodology

The steps of the method I use are as follows:

1. I create the table with all the neighborhoods of Toronto depending on their postal codes. In the table provided from the Wikipedia page the names of some Boroughs and Neighborhoods are not assigned. I skip the boroughs that are not assigned and the neighborhoods take the name of the borough. Here is a sample of the final table:

Postal Code	Borough	Neighborhood	Latitude	Longitude
M3A	North York	Parkwoods	43,75	-79,33
M4A	North York	Victoria Village	43,73	-79,32
M5A	Downtown Toronto	Harbourfront, Regent Park	43,65	-79,36
M6A	North York	Lawrence Heights, Lawrence Manor	43,72	-79,46
M7A	Queen's Park	Queen's Park	43,66	-79,39

2. Here is a map with all the neighborhoods:



3. Using the Foursquare API I find all the neighborhoods with Greek restaurants. Those are:

Neighborhoods	Greek Restaurants
Adelaide, King, Richmond	1
Bedford Park, Lawrence Manor East	1
Berczy Park	1
Davisville	1
East Toronto	1
Fairview, Henry Farm, Oriole	1
Harbourfront, Regent Park	1
Little Portugal, Trinity	1
Queen's Park	1
The Danforth West, Riverdale	12

4. Now I need to find the neighborhoods that get visited the most. Since I am using a free account for the Foursquare API the best data I can pull is to find a number of venues for each neighborhood and sum the number of “Likes” each venue has. In Foursquare, like most of the social media, “Like” means that a Foursquare user visited that specific venue and liked it. The number of “likes” is not the best

statistic but it gives an indication that the more “liked” a venue is, it’s likely to get visited by other people or even the same people visit it again. I am checking the data of 30 venues for each neighborhood. So the neighborhoods, that don’t have a Greek restaurant, with the most likes are:

Neighborhood	Sum of Venue Likes
Garden District	1062
St. James Town	553
Flemingdon Park, Don Mills South	144
Cloverdale, Islington, Martin Grove	108
Lawrence Heights, Lawrence Manor	85
Humewood-Cedarvale	48
Parkwoods	42
Victoria Village	42
Rouge, Malvern	40
Highland Creek, Rouge Hill, Port Union	33
Glencairn	28
Don Mills North	25
Woodbine Heights	21
Woodbine Gardens, Parkview Hill	17
Bloordale Gardens, Eringate, Markland Wood	15
Islington Avenue	13

Results and discussion

As we can see from the last table, the area with the most “Likes” and that doesn’t have a Greek restaurant is the Garden District. Is this though a suitable area for our new restaurant? The Garden District is in downtown Toronto. That is good because the downtown of a city is the busiest area. And the location of a restaurant is a very important factor to its profitability and success. Ryerson University is located within the Garden District's boundaries, as is Allan Gardens, the indoor botanical gardens for which the community is named. There are also a lot of parks around besides the Allan Gardens. There's also endless shopping around, from Eaton Centre (Toronto's biggest mall) right on the other side of Yonge and has great shops, bars and restaurants. The north end of the Garden District falls within Toronto's Gay Village, which has incredible nightlife and attracts thousands of tourists every year¹.

Conclusion

It seems like the Garden District is really good area to open our new Greek restaurant. Although this analysis doesn’t take in consideration other factors that are important to opening a new restaurant like availability of places to rent or buy and the prices of them, licensing and permits etc. This analysis may be simple but the potential for this kind of analysis in a real life business problem is really great.

¹ <https://www.torontorentals.com/neighbourhood-guide/toronto/garden-district>