

The Battle of the Neighborhoods

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Description

The problem is about a person who wants to buy a house in Toronto. So he needs to analyze the neighborhoods of the city to know which one has all the requirements that he needs.

Mainly He needs a neighborhood where he can find at least 4 of the venues in the next categories:

- ☐ Bar
- ☐ Pharmacy
- ☐ Gym
- ☐ Bank
- ☐ Coffee Shop
- ☐ Restaurant

This problem is important because I can create a tool where the people can find their perfect Neighborhood using the Foursquare data. Most of the people care about not only the characteristics of an apartment or a house like number of bedrooms, mts, floor, etc... but they care about the neighbor to know what kind of places they are near for, or what kind of places they can go to.

The Data

I will use multiple data sources to solve this problem.

First, I will use the requests package to parse the data of a wikiedia page that contains all the information about the Postalcodes of Toronto, Canada including the Borough and the Neighborhoods.

Then, I will use the Geocoder package to find the coordinates for each Neighborhood. With the coordinates I can create a map to see the distribution of the neighborhoods.

Finally, I will use the Foursquare API to find the most common venues near each of the neighborhoods. With this data I will try to have a general description of the neighbor and I will select which has at least 4 of the categories that the client wants.

The process

In the next table you can see how is the data from Wikipedia.

List of postal codes of Canada: M

From Wikipedia, the free encyclopedia

This is a list of [postal codes in Canada](#) where the first letter is M. Postal codes beginning with M are located within the city of [Toronto](#) in the province of [Ontario](#). Only the first three characters are listed, corresponding to the Forward Sortation Area.

[Canada Post](#) provides a free postal code look-up tool on its website,^[1] via its applications for such [smartphones](#) as the [iPhone](#) and [BlackBerry](#),^[2] and sells hard-copy directories and [CD-ROMs](#). Many vendors also sell validation tools, which allow customers to properly match addresses and postal codes. Hard-copy directories can also be consulted in all post offices, and some libraries.

Toronto]] - 103 Canadian postal code#Forward sortation areas|FSAs]] [\[edit \]](#)

Note: There are no rural FSAs in Toronto, hence no postal codes start with M0.

Postcode ↕	Borough ↕	Neighbourhood ↕
M1A	Not assigned	Not assigned
M2A	Not assigned	Not assigned
M3A	North York	Parkwoods
M4A	North York	Victoria Village
M5A	Downtown Toronto	Harbourfront
M5A	Downtown Toronto	Regent Park
M6A	North York	Lawrence Heights

The process

I created a table with the following form:

:

	Postcode	Borough	Neighborhood
0	M3A	North York	Parkwoods
1	M4A	North York	Victoria Village
2	M7A	Queen's Park	Queen's Park
3	M9A	Etobicoke	Islington Avenue
4	M3B	North York	Don Mills North

The process

Using Geocoder I could find the coordinates for each Postcode

	Postcode	Borough	Neighborhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.753259	-79.329656
1	M4A	North York	Victoria Village	43.725882	-79.315572
2	M7A	Queen's Park	Queen's Park	43.662301	-79.389494
3	M9A	Etobicoke	Islington Avenue	43.667856	-79.532242
4	M3B	North York	Don Mills North	43.745906	-79.352188

Map of the Neighborhoods



Top Venues

	Neighborhood	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
0	Adelaide,King,Richmond	Café	Coffee Shop	American Restaurant	Steakhouse	Thai Restaurant	Hotel	Restaurant	Gym	Bar	Deli / Bodega
1	Agincourt	Lounge	Skating Rink	Clothing Store	Breakfast Spot	Empanada Restaurant	Ethiopian Restaurant	Event Space	Electronics Store	Dim Sum Restaurant	Eastern European Restaurant
2	Agincourt North,L'Amoreaux East,Milliken,Steel...	Park	Playground	Yoga Studio	Drugstore	Dim Sum Restaurant	Diner	Discount Store	Dog Run	Doner Restaurant	Donut Shop
3	Albion Gardens,Beaumont Heights,Humbergate,Jam...	Grocery Store	Liquor Store	Fast Food Restaurant	Beer Store	Japanese Restaurant	Sandwich Place	Discount Store	Fried Chicken Joint	Coffee Shop	Pharmacy
4	Alderwood,Long Branch	Pizza Place	Gym	Sandwich Place	Bank	Pub	Athletics & Sports	Coffee Shop	Concert Hall	Diner	Ethiopian Restaurant
5	Bathurst Manor,Downsview North,Wilson Heights	Coffee Shop	Shopping Mall	Bridal Shop	Sushi Restaurant	Ice Cream Shop	Bank	Restaurant	Fried Chicken Joint	Frozen Yogurt Shop	Diner
6	Bayview Village	Café	Japanese Restaurant	Chinese Restaurant	Bank	Dessert Shop	Diner	Discount Store	Dog Run	Doner Restaurant	Donut Shop
7	Bedford Park,Lawrence Manor East	Coffee Shop	Sushi Restaurant	Fast Food Restaurant	Italian Restaurant	Pharmacy	Pizza Place	Pub	Café	Butcher	Restaurant
8	Berczy Park	Coffee Shop	Cocktail Bar	Farmers Market	Café	Seafood Restaurant	Cheese Shop	Restaurant	Beer Bar	Steakhouse	Bakery
9	Birch Cliff,Cliffside West	General Entertainment	College Stadium	Café	Skating Rink	Drugstore	Diner	Discount Store	Dog Run	Doner Restaurant	Donut Shop

Selection

In this part I selected the neighborhood that have at least 4 of the required venues from the client.

```
Neighborhood      Adelaide,King,Richmond
1st Most Common Venue      Café
2nd Most Common Venue      Coffee Shop
3rd Most Common Venue      American Restaurant
4th Most Common Venue      Steakhouse
5th Most Common Venue      Thai Restaurant
6th Most Common Venue      Hotel
7th Most Common Venue      Restaurant
8th Most Common Venue      Gym
9th Most Common Venue      Bar
10th Most Common Venue      Deli / Bodega
Cant               4
Postcode           M5H
Borough            Downtown Toronto
Latitude           43.6506
Longitude          -79.3846
Name: 0, dtype: object
```

Results - Map

