
TORONTO - BEST PLACES TO LIVE BASED ON PREFERENCES

Report created by TS Manikandan

This report is created for Applied Data Science Capstone in Coursera

INTRODUCTION

Most of us move from a city to another city or from one neighborhood to another within the same city due to work, education, lifestyle.

When people move to a new city, it is often difficult to choose the best neighborhood to live. Once you move to a neighborhood, it becomes difficult to shift again to yet another neighborhood and start all over there. Some neighborhoods would have good commute options because of its proximity to Metro stations, Buses, Airports. Some neighborhoods would have lot of Restaurants, Bars, Theaters and Stadiums making it a lively and energetic place to be.

Every person has different preferences and would like to live in a neighborhood where the places of our preference are abundant and accessible.

In this project we try to get the preferences from the user (say Burger Joint, Coffee shop, Shopping Mall etc) and its weightage and suggest the best neighborhood to live in.

DATA

Toronto Neighborhood Data was scraped from Wikipedia page
https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

This page provides the list of Boroughs, Neighborhoods and their Postal codes.

Toronto geo coordinates data was taken from http://cocl.us/Geospatial_data provided by Coursera.

Foursquare Venues API provides data on the venues in Toronto.

Different categories of Venues are also retrieved through Foursquare APIs.

We are using python packages such as wikipedia, requests for retrieving data, pandas, numpy for data analysis, folium for visualization.

METHODOLOGY

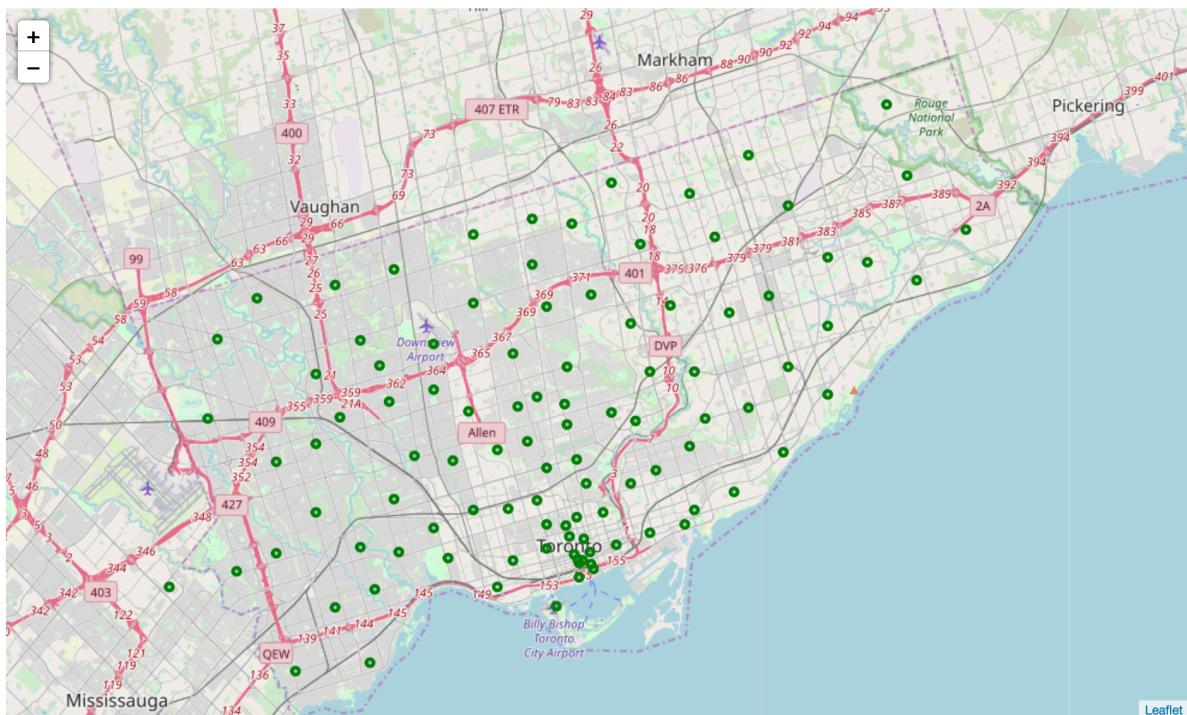
Borough and Neighborhood data is scraped from Wikipedia using Wikipedia package.

	Postcode	Borough	Neighbourhood
0	M1A	Not assigned	Not assigned
1	M2A	Not assigned	Not assigned
2	M3A	North York	Parkwoods
3	M4A	North York	Victoria Village
4	M5A	Downtown Toronto	Harbourfront

Location coordinates are retrieved from Coursera dataset and merged into the Neighborhood data.

PostalCode	Borough	Neighborhood	Latitude	Longitude
0	M1B	Rouge, Malvern	43.806686	-79.194353
1	M1C	Highland Creek, Rouge Hill, Port Union	43.784535	-79.160497
2	M1E	Guildwood, Morningside, West Hill	43.763573	-79.188711
3	M1G	Woburn	43.770992	-79.216917
4	M1H	Cedarbrae	43.773136	-79.239476

Neighborhoods are plotted in the maps using Folium package.



Nearby venues were retrieved through Foursquare APIs.

Unique categories were identified from Foursquare APIs.

Total number of each category of venue in a neighborhood is populated.

This gives us the lookup of all the neighborhoods and interesting venues of each category in that area.

RESULTS

Toronto has 103 boroughs and 289 Neighborhoods.

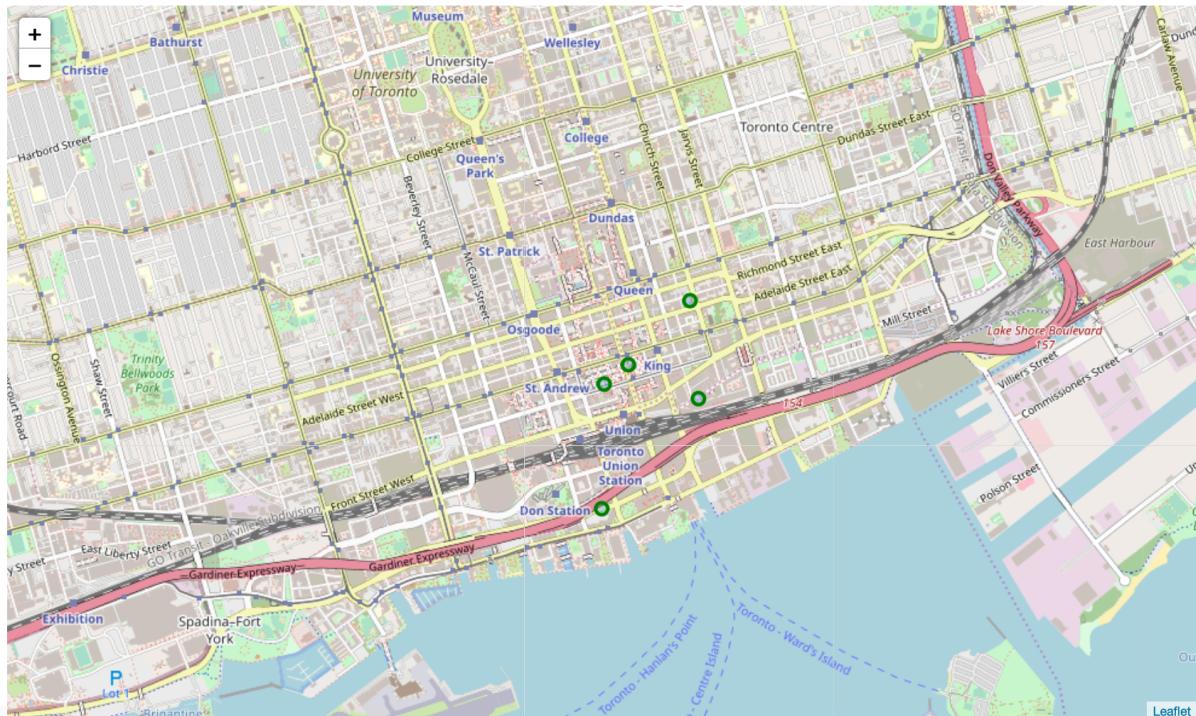
2231 venues were retrieved through Foursquare APIs.

270 unique categories of venues has been identified.

The best neighborhood with 'American Restaurant', 'Bakery', 'Breakfast Spot', 'Fast Food Restaurant' and 'Coffee Shop' was identified by calculating the weighted sum also known as Score.

	Neighborhood	American Restaurant	Bakery	Breakfast Spot	Fast Food Restaurant	Coffee Shop	Score
0	Commerce Court, Victoria Hotel	4	3	1	2	13	23
1	Design Exchange, Toronto Dominion Centre	4	2	1	1	13	21
2	Stn A PO Boxes 25 The Esplanade	1	2	2	3	9	17
3	St. James Town	2	3	4	1	7	17
4	Harbourfront East, Toronto Islands, Union Station	0	2	0	1	13	16

Commerce Court, Victoria Hotel was identified as the best neighbourhood to live with all these places nearby, followed by Design Exchange, Toronto Dominion Centre, Stn A PO Boxes 25 The Esplanade, St. James Town and Harbourfront East, Toronto Islands, Union Station.



DISCUSSION

In general, these places seems to have log of venues and the best neighborhoods in Toronto.

Neighborhood	Latitude	Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Neighborhood						
Adelaide, King, Richmond	100	100	100	100	100	100
Commerce Court, Victoria Hotel	100	100	100	100	100	100
St. James Town	100	100	100	100	100	100
Ryerson, Garden District	100	100	100	100	100	100
First Canadian Place, Underground city	100	100	100	100	100	100
Design Exchange, Toronto Dominion Centre	100	100	100	100	100	100
Harbourfront East, Toronto Islands, Union Station	100	100	100	100	100	100
Chinatown, Grange Park, Kensington Market	98	98	98	98	98	98
Stn A PO Boxes 25 The Esplanade	95	95	95	95	95	95
Church and Wellesley	82	82	82	82	82	82

There seems to be more Coffee shops followed by Café, Restaurant, Pizza place and Park.

Coffee Shop	182
Café	98
Restaurant	56
Pizza Place	56
Park	52
Italian Restaurant	49
Bakery	45
Sandwich Place	42
Hotel	41
Bar	38

CONCLUSION

The aim of this project was to find the best neighborhood to live in Toronto based on user preferences. Best neighborhoods can be found for any City if we have foursquare data for that city.

With this list, we intend to provide some guidance to the users to choose the best neighborhoods when they are relocating to an unknown city.

We were able to find the top n best neighborhoods to live in using this methodology.