TORONTO REAL ESTATE REPORT

Capstone Project

ABSTRACT
This report will give an in-depth analysis on how Toronto real estate price affecting by surrounding amenities.
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# Background

Toronto is the provincial capital of Ontario and the most populous city in Canada, with a population of 2,731,571 as of 2016.(wikipedia). Its gorgeous environment, diversified community and work balance life style attracts thousands of people choose to work, study and live here, which made Toronto is the one of the most expensive city in the world.

This report will analysis relationship between surrounding amenities and house price in each neighbourhood in Toronto.

1. The city

The table below shows the neighbourhood of Toronto
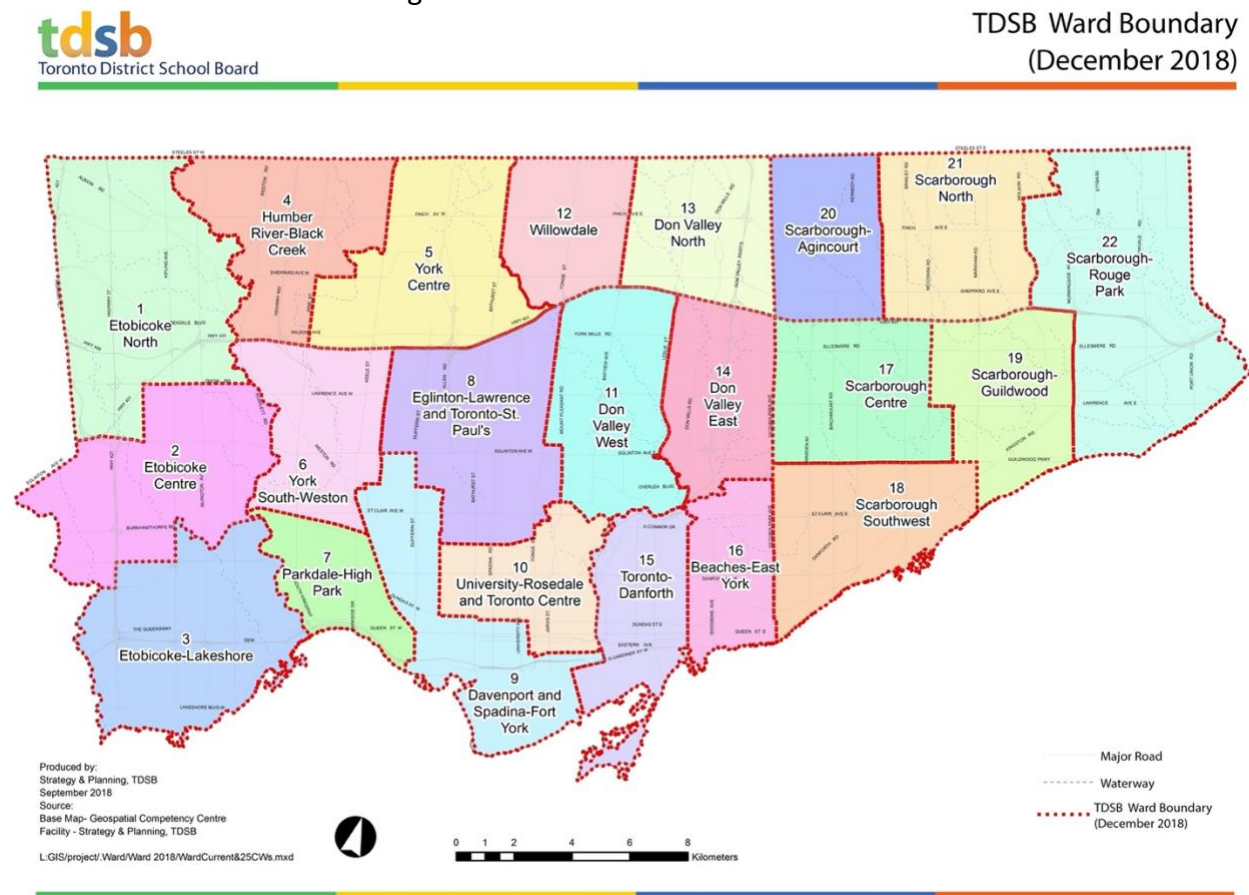
Data Cleaning

Download data from various sources and merge different tables into one using Python pandas. I got average house price in each neighbourhood sorted by postal code. Geographical coordination will be used for generate the most popular places in each neighbourhood.

[16]:

	Postal Code	Borough	Neighborhood	Average Price	Latitude	Longitude
0	M3A	North York	Parkwoods	$1,884,272	43.753259	-79.329656
1	M4A	North York	Victoria Village	$1,199,633	43.725882	-79.315572
2	M5A	Downtown Toronto	Regent Park, Harbourfront	$2,094,530	43.654260	-79.360636
3	M6A	North York	Lawrence Manor, Lawrence Heights	$1,770,357	43.718518	-79.464763
4	M9A	Etobicoke	Islington Avenue, Humber Valley Village	$3,055,755	43.667856	-79.532242
5	M1B	Scarborough	Malvern, Rouge	$900,190	43.806686	-79.194353
6	M3B	North York	Don Mills	$5,848,193	43.745906	-79.352188
7	M4B	East York	Parkview Hill, Woodbine Gardens	$1,445,184	43.706397	-79.309937
8	M5B	Downtown Toronto	Garden District, Ryerson	$1,399,000	43.657162	-79.378937
9	M6B	North York	Glencairn	$1,931,984	43.709577	-79.445073
10	M9B	Etobicoke	West Deane Park, Princess Gardens, Martin Grov...	$1,819,042	43.650943	-79.554724
11	M1C	Scarborough	Rouge Hill, Port Union, Highland Creek	$1,332,532	43.784535	-79.160497
12	M3C	North York	Don Mills	$2,156,997	43.725900	-79.340923
13	M4C	East York	Woodbine Heights	$1,219,971	43.695344	-79.318389
14	M6C	York	Humewood-Cedarvale	$1,673,233	43.693781	-79.428191

The following graph shows the average house price in each neighbourhood of Toronto:

Average Price of house in Toronto
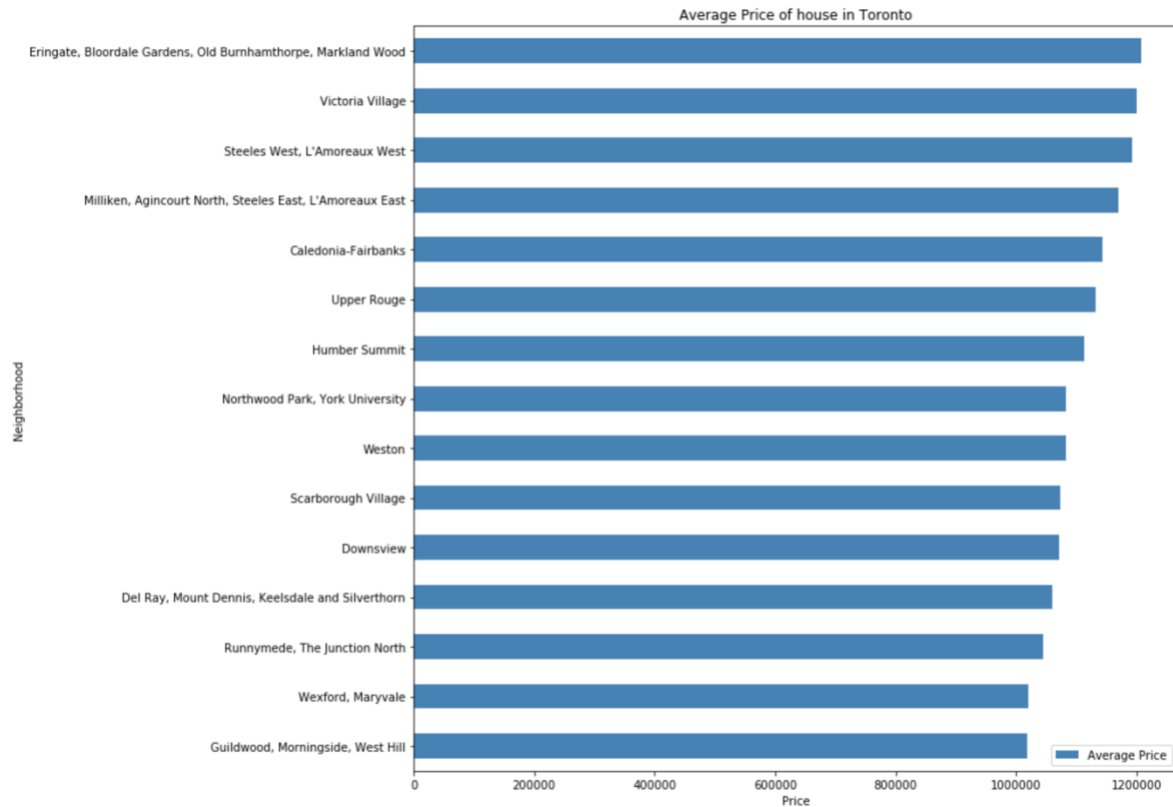
According to the graph, we know the top 15 house price ranking in each neighbourhood. Now, let's take a look the surrounding facilities in those areas.

To do that, I used Foursquare API to obtain the most popular places that people usually visit, and from those data, we could know that kind of people are living in the neighbour and how it would affect the house price.

First, let's take a look the top 10 popular places that people choose to go.

	Postal Code	Borough	Neighborhood	Average Price	Total listings	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
92	M8X	Etobicoke	The Kingsway, Montgomery Road, Old Mill North	$3,026,362	8	0	Pool	Park	River	Women's Store	Dessert Shop	Ethiopian Restaurant	Electronics Store	Eastern European Restaurant	Drugstore	Donut Shop
94	M8Y	Etobicoke	Old Mill South, King's Mill Park, Sunnylea, Hu...	$1,917,718	11	1	Construction & Landscaping	Baseball Field	Discount Store	Farmers Market	Falafel Restaurant	Event Space	Ethiopian Restaurant	Electronics Store	Eastern European Restaurant	Drugstore
95	M8Z	Etobicoke	Mimico NW, The Queensway West, South of Bloor,...	$1,783,599	16	1	Gym	Supplement Shop	Grocery Store	Discount Store	Sandwich Place	Burrito Place	Burger Joint	Fast Food Restaurant	Social Club	Bakery
93	M4Y	Downtown Toronto	Church and Wellesley	$1,604,950	2	1	Coffee Shop	Sushi Restaurant	Japanese Restaurant	Restaurant	Gay Bar	Yoga Studio	Bubble Tea Shop	Burger Joint	Mediterranean Restaurant	Pub
91	M4X	Downtown Toronto	St. James Town, Cabbagetown	$1,498,500	2	1	Coffee Shop	Italian Restaurant	Pub	Bakery	Restaurant	Pizza Place	Café	Indian Restaurant	Snack Place	Bookstore

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----University of Toronto, Harbord----
                 venue  freq
0                 Café  0.15
1                  Bar  0.06
2    Italian Restaurant  0.06
3   Japanese Restaurant  0.06
4               Bakery  0.06


----Victoria Village----
                  venue  freq
0            Pizza Place   0.2
1           Hockey Arena   0.2
2            Coffee Shop   0.2
3   Portuguese Restaurant   0.2
4           Intersection   0.2


----Westmount----
                      venue  freq
0               Pizza Place  0.25
1   Middle Eastern Restaurant  0.12
2              Intersection  0.12
3         Chinese Restaurant  0.12
4            Sandwich Place  0.12


----Weston----
               venue  freq
0   Convenience Store   0.5
1               Park   0.5
2         Yoga Studio   0.0
3   Mobile Phone Shop   0.0
4     Malay Restaurant   0.0


----Wexford, Maryvale----
                      venue  freq
0            Breakfast Spot  0.25
1               Smoke Shop  0.25
2                   Bakery  0.25
3   Middle Eastern Restaurant  0.25
4              Yoga Studio  0.00


----Willowdale, Willowdale East----
                 venue  freq
0     Ramen Restaurant  0.09
1     Sushi Restaurant  0.06
2                 Café  0.06
3       Sandwich Place  0.06
4           Restaurant  0.06


----Willowdale, Willowdale West----
              venue  freq
0        Pizza Place  0.17
1      Grocery Store  0.17
2            Butcher  0.17
3               Bank  0.17
4        Coffee Shop  0.17
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        ----Bathurst Manor, Wilson Heights, Downsview North----
              venue  freq
0            Bank    0.09
1     Coffee Shop    0.09
2     Pizza Place    0.04
3       Pet Store    0.04
4        Pharmacy    0.04


        ----Bayview Village----
                      venue  freq
0      Japanese Restaurant   0.25
1                     Café   0.25
2                     Bank   0.25
3       Chinese Restaurant   0.25
4              Yoga Studio   0.00


        ----Bedford Park, Lawrence Manor East----
                   venue  freq
0      Italian Restaurant  0.09
1           Coffee Shop    0.09
2        Sandwich Place    0.09
3            Restaurant    0.09
4        Thai Restaurant   0.04


        ----Birch Cliff, Cliffside West----
                       venue  freq
0          College Stadium    0.25
1            Skating Rink     0.25
2    General Entertainment    0.25
3                    Café    0.25
4             Yoga Studio    0.00


        ----Brockton, Parkdale Village, Exhibition Place----
                    venue  freq
0                  Café    0.13
1           Coffee Shop    0.09
2        Breakfast Spot    0.09
3             Nightclub    0.09
4     Italian Restaurant   0.04


        ----CN Tower, King and Spadina, Railway Lands, Harbourfront West, Bathurst Quay, South Niagara, Island airport----
                   venue  freq
0        Airport Service  0.19
1         Airport Lounge  0.12
2       Airport Terminal  0.12
3         Harbor / Marina 0.06
4                    Bar  0.06
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According to the table, Etobicoke area is more casual than downtown area because pool, park and river are the most visited venues. Therefore, Etobicoke is a residential area with natural recreational amenities.

If we take a look at the most visited places in Weston, which are convenient store, cellphone shop and park. Then, we see it on the map, thus, we have an insight that that area is located in a far and less populous area. You may wonder why the house price still high considering it is nearly out of the town. One reason is that there is a GO train station in the area that people can go to Toronto downtown within 30 mins.
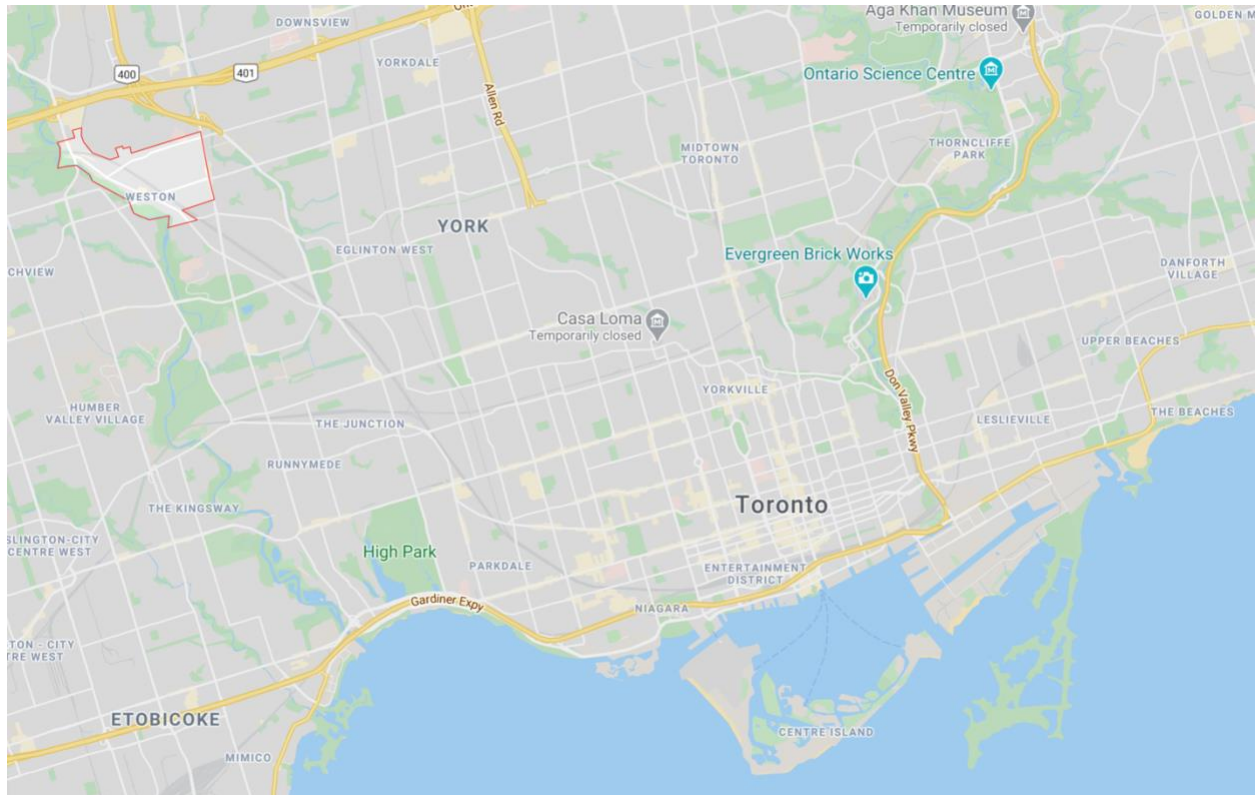
Conclusion

In conclusion, the location and surrounding amenities will affect the value of the house. People would like to live near a park, lake and a recreational center. Houses near those amenities usually have higher price than houses are not.