#### **INTRODUCTION**

There is a steady increase in the number of immigrants settling in Canada annually. This is in part due to the friendly nature of the Canadian immigration structure. These immigrants have to settle into their new lives in Canada within the shortest possible time. This means they have to get employment, accommodation etcetera. Giving the high cost of living within the major cities, finding the ideal place to settle can be very difficult

Using the city Toronto as case study, this project we will try to find the best location for a new immigrant to settle into. This project is specifically tailored to help the continuous growing number of immigrants moving to Canada find the most suited area to live in.

We are particularly interested in areas that have a high immigrant population to help with the transition, and also areas with available businesses to provide the very needed employment.

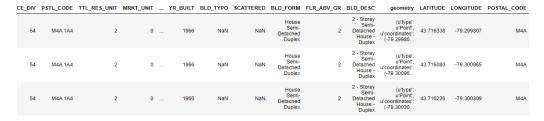
## **DATA**

The data that will be used to solve this problem includes:

- 1. Foursquare location data of the city of Toronto will be used to explore the neighbourhoods
- 2. <a href="https://en.wikipedia.org/wiki/List of postal codes of Canada: M">https://en.wikipedia.org/wiki/List of postal codes of Canada: M</a> The Toronto Postal Code data from wiki. This data includes both the Borough and the assigned Neighbourhood. This will be used as input for the Foresquare API.

## **METHODOLOGY**

The availability of houses in each area will be investigated. The housing data will be grouped by Boroughs. These Boroughs will be identified by their unique postal codes.



(Housing data referencing Postal code)

The easiest employment for immigrants are in jobs that are known to be common place. The jobs are low income jobs associated with SMEs like restaurants, retail stores, etcetera. The foursquare data of the of the available low income businesses in Toronto will also be explored to get a view of the available employers in the restaurant category.

The wiki postal code data will first be extracted and cleaned. Cleaning involves isolating and eliminating the cells that do not have an assigned borough. If there is no assigned neighbourhood, the borough is copied into the neighbourhood cell. Neighbourhoods with the same postal code are grouped together, and the coordinates of each calculated using the geocoder.

	PostalCode	Borough	Neighborhood	Latitude	Longitude
0	M1B	Scarborough	Rouge, Malvern	43.811525	-79.195517
1	M1C	Scarborough	Highland Creek, Rouge Hill, Port Union	43.785665	-79.158725
2	M1E	Scarborough	Guildwood, Morningside, West Hill	43.765815	-79.175193

(Neighbourhood data with Latitude)

# **RESULTS**

The assessment of the number of housing units in each borough sorted in descending order indicates that the following neighbourhoods have a large number of residential buildings:

- Rouge
- Malvern
- Lawrence Heights & Lawrence Manor
- Downsview Northwest
- Studio District
- Albion Gardens
- Beaumont Heights
- Humbergate
- India bazaar

	Housing_units	neighbourhoods
0	228	Rouge, Malvern
53	155	Lawrence Heights, Lawrence Manor
78	137	Albion Gardens, Beaumond Heights, Humbergate, $\dots$
34	105	The Beaches West, India Bazaar
42	103	Harbourfront, Regent Park
26	87	Downsview Northwest
35	77	Studio District
51	72	Chinatown, Grange Park, Kensington Market
21	52	Flemingdon Park, Don Mills South
32	50	East Toronto
63	49	The Junction North, Runnymede
28	48	Woodbine Heights
40	48	Cabbagetown, St. James Town
29	45	The Beaches
2	37	Woburn

(Neighbourhood Hierarchy by Residential Housing)

These neighbourhoods in essence will have a higher chance of an individual finding accommodation.

This is because from the distribution of neighbourhoods seen below, the neighbourhoods have roughly the same landmass. Hence the number of housing units, cn be used to assess the density.



(Neighbourhoods in Toronto)

# **DISCUSSION**

The neighbourhoods with higher number of residential buildings in essence will have a higher chance of an individual finding accommodation.

This is because from the distribution of neighbourhoods seen above, the neighbourhoods have roughly the same landmass. Hence the number of housing units, can be used to assess the density.

However, many more criteria can be used to filter and make the model more accurate. This includes pricing of these residents, and whether they are for sale of rent.

#### CONCLUSION

Based on the model employed, the easiest places to settle in the Toronto area are Rouge and Malvern.

There are other areas like Lawrence Heights & Lawrence Manor, Downsview Northwest, Studio District, Albion Gardens, Beaumont Heights, Humbergate, and India bazaar that are just as good.