**Welcome to Toronto**

**Introduction**

Canada is a popular destination for immigration around the globe. In 2016, Canada had 1,212,075 new immigrants who had permanently settled in Canada from 2011 to 2016. These recent immigrants represented 3.5 % of Canada’s total population in 2016 according to Statistics Canada which is a federal government body responsible for government statistics. The  introduction of Skilled workers Express Entry program by the Canadian government and its commitment to the program  has attracted  an increasing number of  immigrants to the Canadian shores.

Toronto being the financial center with a reputation for multiculturalism, is favored by most immigrants as their new home. However, moving to a new country is not an easy task. Apart from completely rebooting their lives and starting afresh, most of the skilled workforce  that lands  in Toronto has to actively pursue various job opportunities  and master relevant skills set to start their integration with the Canadian workspace. Moving around in a new city,  either  to look for new job opportunities  or for attending any educational institute   can be troublesome, especially in the first couple of months after arrival. Thus, in the  early days it is imperative that a new immigrant family chooses an appropriate neighborhood for their stay.

The objective of this  IBM Applied  Data Science Capstone project is to identify suitable neighborhoods for a new immigrant in Toronto. The choice of a perfect neighborhood may differ for individuals as per their likes and preferences. However, the purpose  of this project is not to find the perfect neighborhood for every immigrant for the long term but to find for new immigrants the best neighborhoods to stay in the early days after their  arrival to Canada .

**Datasets**

In the early days after arrival  to Canada new immigrants need to find a neighborhood which has proximity to :

1. **Public transport:** This is due to the  fact that it may take  considerable time to get a driver’s license or own a car.
2. **Newcomer Settlement Services institutes:** They provide a wide range of services that help new immigrants in settling down
3. **Educational Support institutes:** Some new immigrants might feel the need to  train and upgrade their knowledge for the Canadian market.
4. **Employment resources institutes:** They help new immigrants in  finding suitable employment.
5. **Convenience stores:** For getting the essentials.

The City of Toronto is divided into 140 neighborhoods as per the Municipality of  Metropolitan Toronto open data set . The data on these 140 neighborhoods with latitudes and longitudes is available on the City of Toronto open [data portal](https://open.toronto.ca/). Apart from this, the location of various  Newcomer settlement services institutes,   Educational Support institutes and Employment resources institutes is available in 3 different datasets on the City of Toronto open data portal. The Foursquare location data for the 140 neighborhoods  along with location data of Newcomer settlement services institutes,   Educational Support institutes and Employment resources institutes will be used in this capstone.

Suitable neighborhoods would have an  optimum number of each of  the required  attributes. By using the foursquare location data for the 140 neighborhoods, the number of bus stops, metro stations and convenience stores in the 500 meter radius from a location in  all the  neighborhoods would be obtained. Also the number of Newcomer settlement services institutes,   Educational Support institutes and Employment resources in a particular neighborhood would be obtained from the  City of Toronto open [data portal](https://open.toronto.ca/). By using K-means clustering method  suitable neighborhoods with optimum number of attributes would be found out.