**The Battle of Neighbourhoods**

**Business Proposal**

**Introduction:**

This project aims to analyse the various amenities within a particular neighbourhood and then give a comparative analysis of the features across various neighbourhoods. The features include median housing price, school rankings according to their ratings, crime rates of the particular area, road connectivity, weather conditions, efficiency of emergency services , availability of water etc , among others.

It will serve as a guideline for people aiming to move to Scarborough from other places and help them select the most appropriate neighbourhood according to their needs.

**Interested Parties:**

This project aims to help the people who want to move to Scarborough by providing an in depth guide to Scarborough’s various neighbourhoods in terms of the quality of living and amenities within them.

**The Location:**

Scarborough is a popular destination in Canada where a lot immigrants like to reside. As a result, it is one of the most diverse and multicultural areas in the Greater Toronto Area, being home to various religious groups and places of worship. Although immigration has become a hot topic over the past few years with more governments seeking more restrictions on immigrants and refugees, the general trend of immigration into Canada has been one of on the rise.

**Foursquare API:**

This project would use Four-square API as its prime data gathering source as it has a database of millions of places, especially their places API which provides the ability to perform location search, location sharing and details about a business.

**Workflow:**

Using credentials of Foursquare API features of near-by places of the neighbourhoods would be mined. Due to http request limitations the number of places per neighbourhood parameter would reasonably be set to 100 and the radius parameter would be set to 500.

**Clustering Approach:**

To compare the similarities of two cities, we decided to explore the neighbourhoods, segment them, and group them into clusters to find similar neighbourhoods.I used the k-means clustering (unsupervised learning model) to do the clustering.

**Libraries Used to Develop the Project:**

Pandas: For creating and manipulating data-frames.

Folium: Python visualization library: used to visualize the neighbourhoods cluster distribution of neighbourhoods.

Scikit Learn: For importing k-means clustering model.

JSON: Library to handle JSON files.

XML: To separate data from presentation and XML stores data in plain text format.

Matplotlib: Python Plotting Module.

CSV: The location data file included in the week 3 module was used to include the latitude and longitude