The Battle of Neighborhoods
Business Proposal

Introduction:

The purpose of this project is to help people in exploring better facilities around their neighborhood. It will help people make an innovative and efficient decision to select a great community out of numbers of other areas in Scarborough, Toronto.

Many people migrate to various states of Canada and needed lots of research for reasonable housing prices and reputed schools for their children. This project is for those looking for better neighborhoods to ease access to cafes, schools, supermarkets, medical shops, grocery shops, malls, theatres, hospitals, like-minded people, etc.

This project analyzes features for people migrating to Scarborough to search for the best neighborhood comparative analysis between communities. The features include median housing price and better school according to ratings, crime rates of that particular area, road connectivity, weather conditions, good management for an emergency, water resources, freash and waste water, and excrement conveyed in sewers and recreational facilities.

It will help people understand the area and neighborhood before moving to a new city, state, country, or place for their work or starting a new fresh life.

Problem Description:

The primary purpose of this project is to suggest a better neighborhood in a new city for the person who is shifting there. Social presence in society in terms of like-minded people. Connectivity to the airport, bus stand, city center, markets, and other daily needs nearby.

1. Sorted list of the house in terms of housing prices in an ascending or descending order
2. Sorted list of schools in terms of location, fees, rating, and reviews

The Location:

Scarborough is a popular destination for new immigrants in Canada 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 on the rise.

Foursquare API:

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

Work Flow:

Using credentials of Foursquare API, I would mine features of nearby places of the neighborhoods. Due to HTTP request limitations, I would reasonably set the number of spots per neighborhood parameter to 100. The radius parameter would be set to 500.

Clustering Approach:

To compare the two cities' similarities, we decided to explore neighborhoods, segment them, and group them into clusters to find similar areas in big cities like New York and Toronto. To be able to do that, we need to cluster data which is a form of unsupervised machine learning: k-means clustering algorithm

Libraries used to Develop the Project:

Pandas: For creating and manipulating data frames.

Folium: Python visualization library would be used to visualize the neighborhoods cluster distribution using an interactive leaflet map.

Scikit Learn: For importing k-means clustering.

JSON: Library to handle JSON files.

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

Geocoder: To retrieve Location Data.

Beautiful Soup and Requests: To scrap and library to handle HTTP requests.

Matplotlib: Python Plotting Module.