

Introduction

The purpose of this project is to help new residents select an appropriate neighborhood for residence in Scarborough, Toronto. Scarborough is a municipality in Toronto occupying the eastern part of the city. Many people migrate to Canada for better opportunities. Toronto is the financial capital of the country and therefore receives multiple migrants every year.

This project aims to analyse the neighborhoods in Scarborough which is a large multicultural area attracting migrants. The features analysed are housing prices and quality of schooling based on the ratings, crime rates, road connectivity, water resources, recreational facilities, etc. This project will help migrants choose the best neighborhood suitable for their needs.

Problem Definition

The aim of this project is to recommend a suitable neighborhood for people shifting to Scarborough area in Toronto.

Data Description

Scarborough dataset will be used for the purpose of this project. Dataset consists of latitude, longitude and zip codes.

Foursquare locational information will be used to gather data on different venues. For each neighborhood, radius of 100 meters is chosen. The information obtained from Foursquare API per venue is as follows:

1. Neighborhood
2. Neighborhood latitude
3. Neighborhood longitude
4. Name of Venue
5. Venue latitude
6. Venue longitude
7. Venue category

Methodology

Neighborhoods in Scarborough are explored, segmented and grouped into clusters. Clustering is done using k-means clustering algorithm.

Using Foursquare API, features of nearby venues in all neighborhoods are mined. The number of places per neighborhood is set to 100 and radius parameter is set at 500.

Results

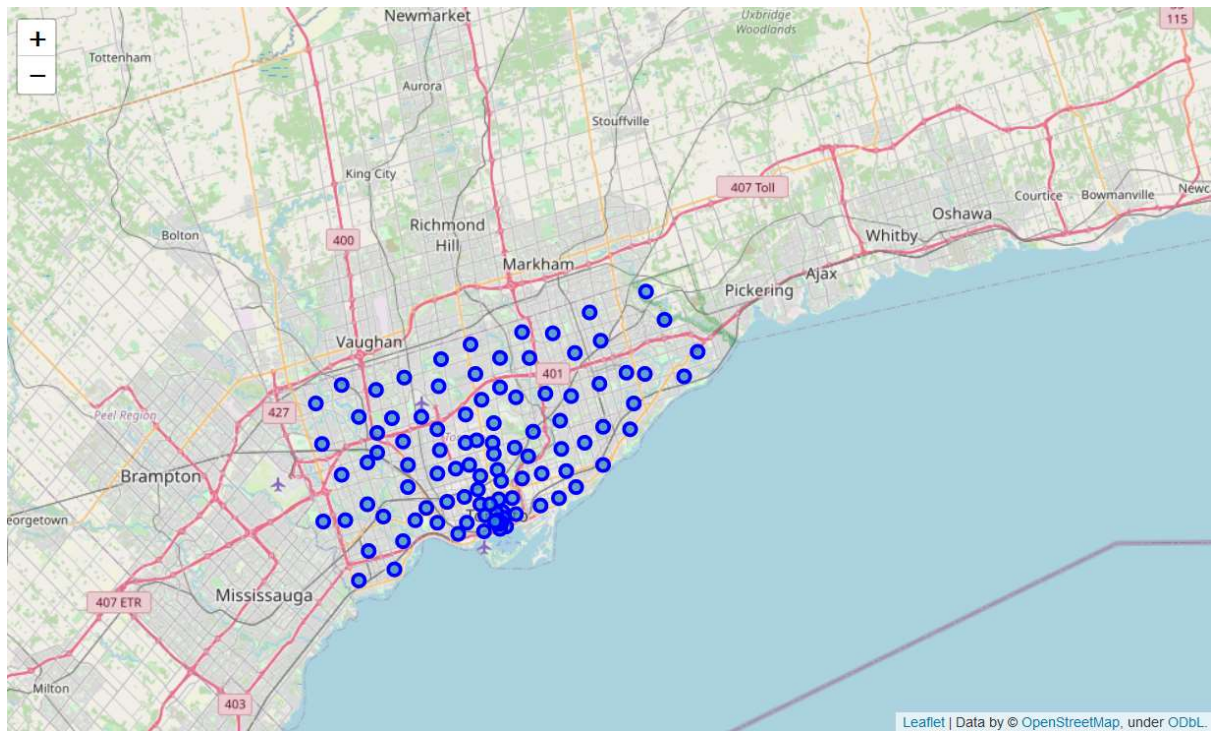


Figure 1: Cluster map in Scarborough

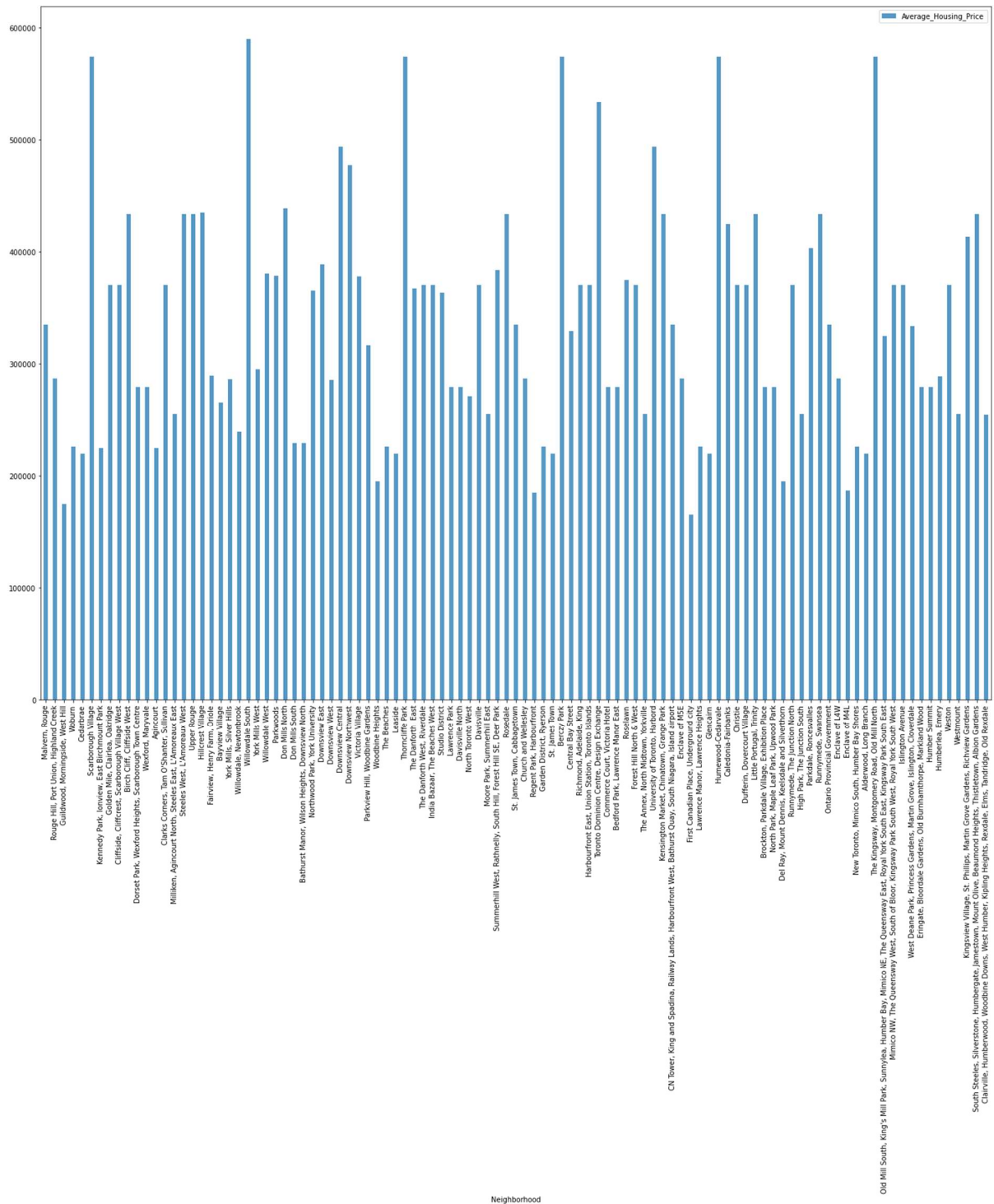


Figure 2: Average housing prices

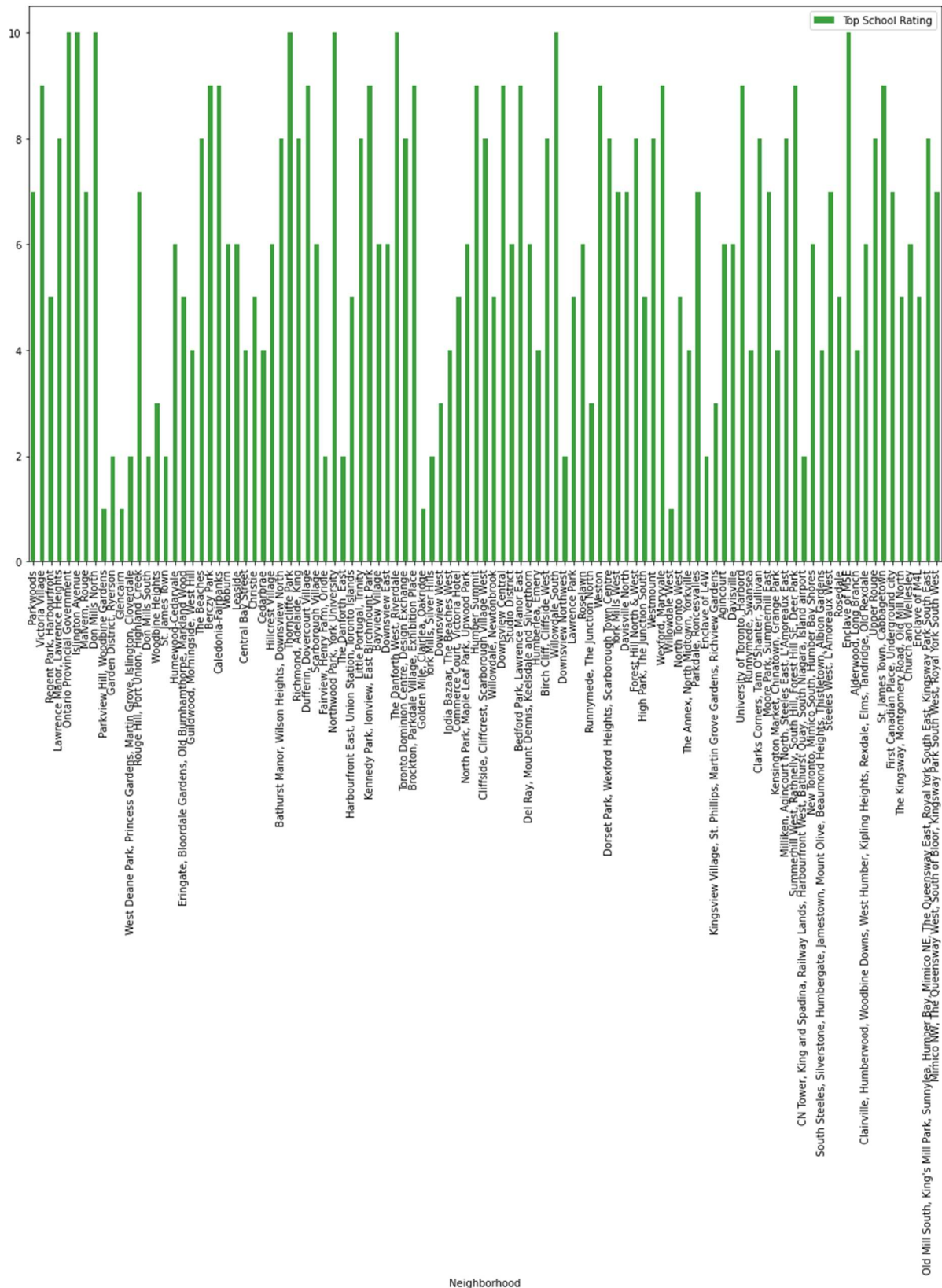


Figure 3: Ratings of top schools

Discussion

Graphs of housing prices and ratings of top schools for each neighborhood have been shown.

Neighborhood of Malvern Rouge has average housing prices of \$350,000 and schools with 10 rating, whereas neighborhood of Woodbine Gardens has average housing prices of \$320,000 but schools are rated only 2. For a couple with young children who can afford the housing prices of Malvern Rouge will prefer this neighborhood because of top schools. On the other hand, a couple with grown up children wouldn't mind moving to Woodbine Gardens.

Neighborhood	Avg. Housing Prices	School rating
Malvern Rouge	\$3,50,000.00	10
Woodbine Gardens	\$3,20,000.00	1

Conclusion

Using the graphs of average housing prices and ratings of schools, a migrant will be able to select an appropriate neighborhood tailor to his/her needs.