

Recommending Areas for Gymnasium in Toronto



Introduction

- Finding a best place to start a new venture is really challenging for the management
- Optimal locations are crucial for competitive advantages and business values
- Recommendation system for suggesting optimal locations for a new gymnasium is built
- To extend their business in future similar areas are also identified

Data acquisition and cleaning

- Toronto neighbourhood data collected from [link](#)
- Toronto population data collected from [link](#)
- Nearby venues of each neighbourhood obtained from [foursquare API](#)
- Removed all missing neighbourhood and multiple neighbourhoods in single field separated into separate fields
- In total, 4574 rows and 13 features in the cleaned dataset

Methodology

1

Select Toronto neighbourhoods with no gymnasium

2

Compare following among neighbourhoods with no gym

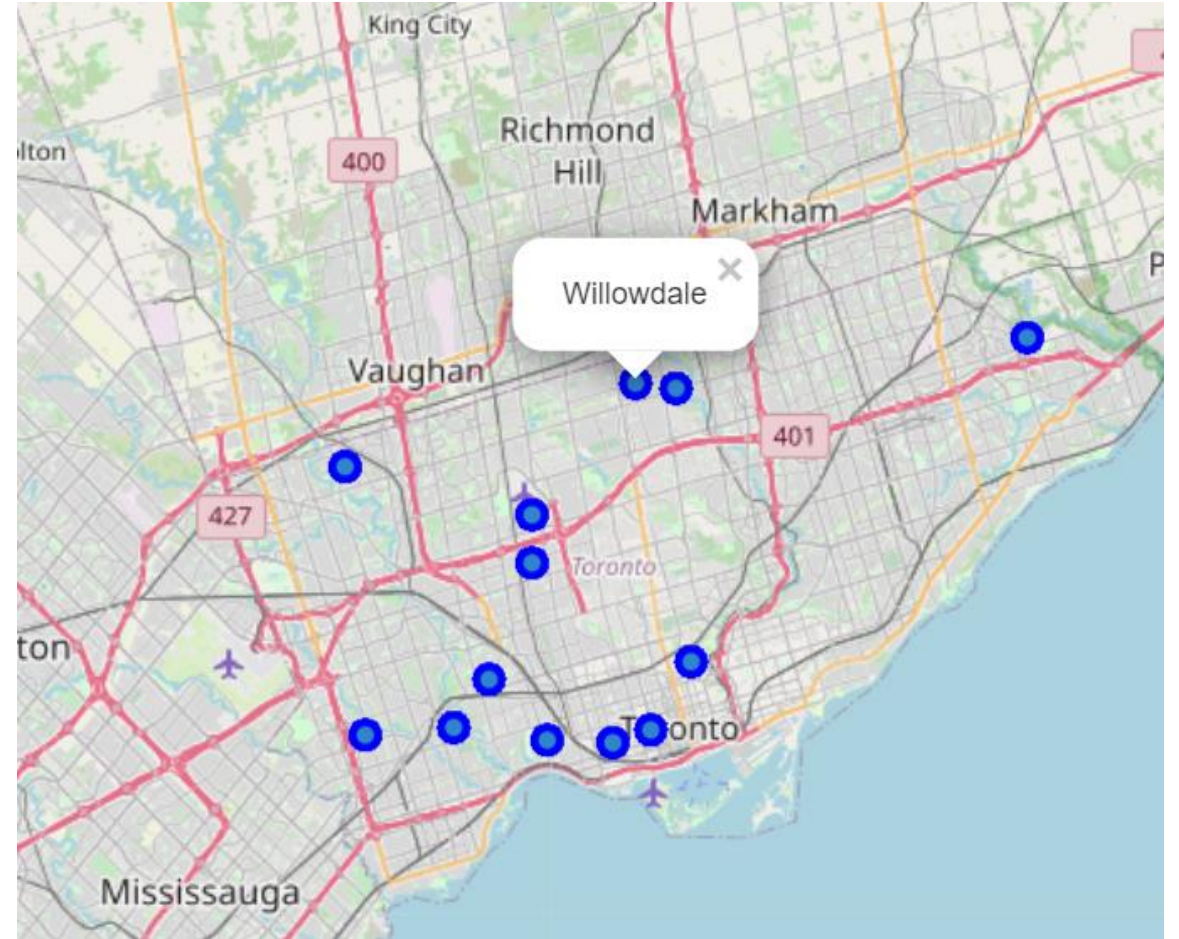
- Population
- Population density
- Average income

3

Apply clustering algorithm to selected neighbourhoods

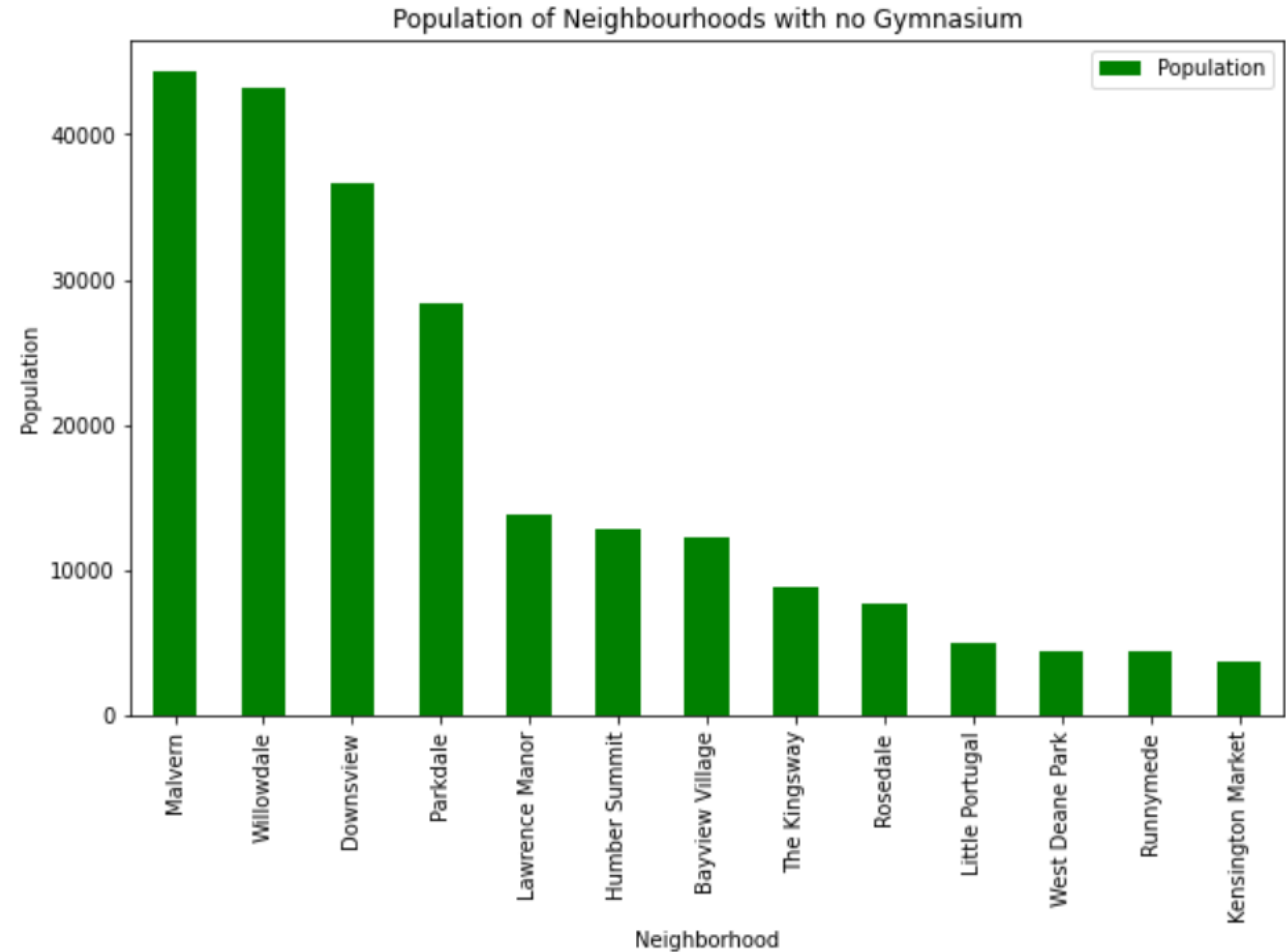
Analysis

- Finding locations without Gym
- 13 neighbourhoods do not have gym as shown in fig
- Comparison of neighbourhoods shown in next slide



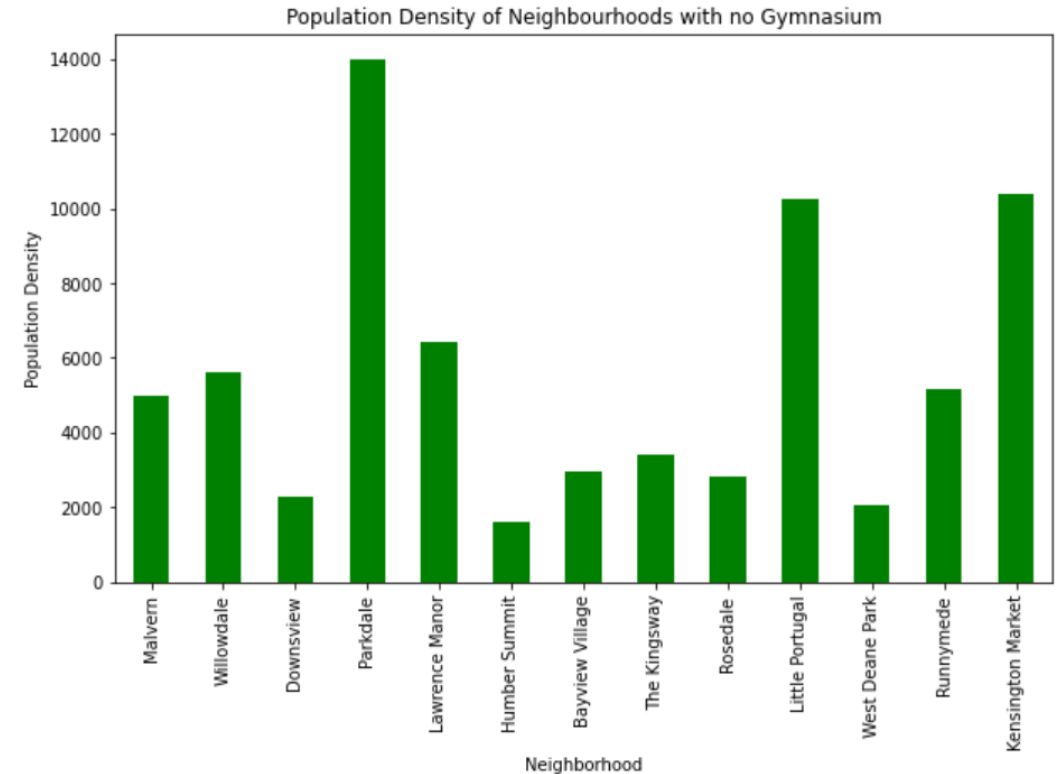
Neighbourhood Vs Population

- Malvern, Willowdale, Downsview, Parkdale have highest population



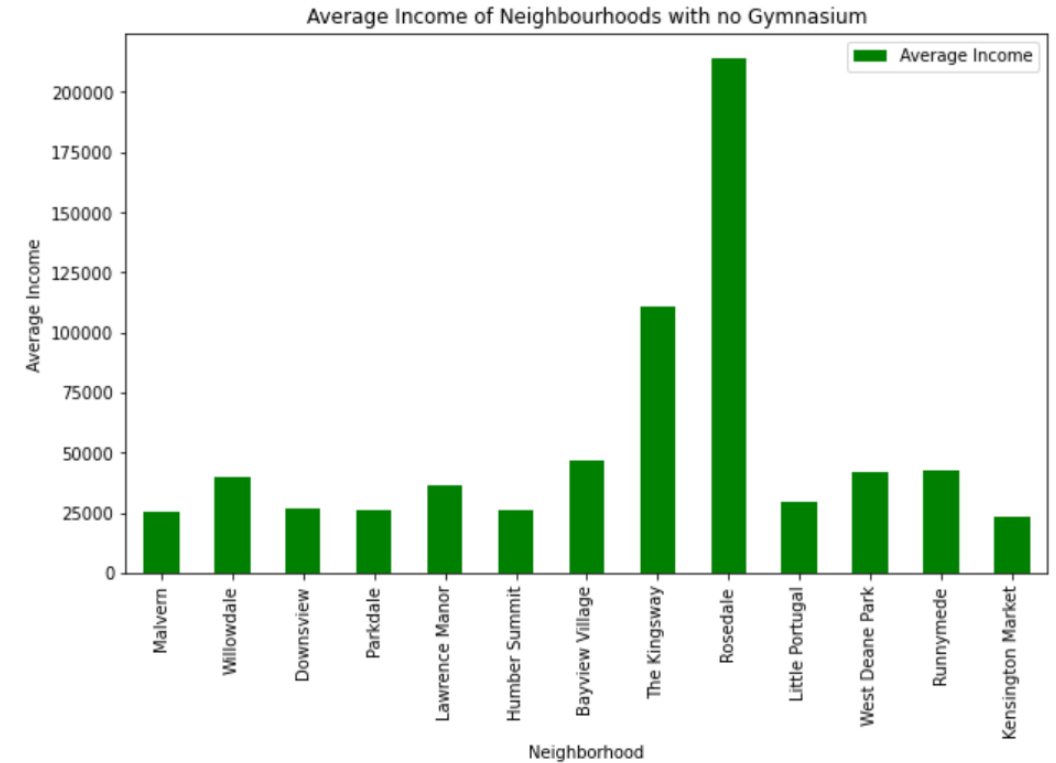
Neighbourhood Vs Population density

- Parkdale, Little Portugal, Kensington Market have high population density



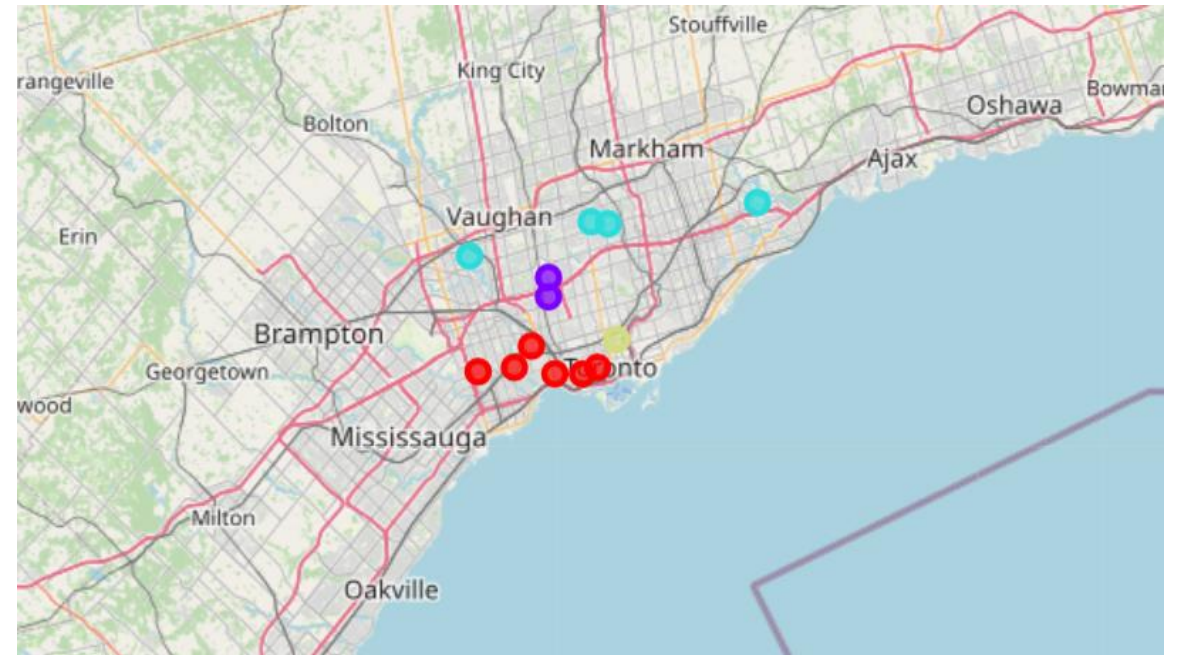
Neighbourhood vs average income

- Rosedale has low population and population density, but it has high average income as compared to others



Clustering model

- K-means clustering used
- 4 clusters of neighborhoods formed



Conclusion

- Parkdale, Malvern, Willowdale, Downsview, Little Portugal, Kensington Market, Rosedale are optimal neighbourhoods in Toronto to start a gymnasium
- Clustering of the areas with no gymnasiums help to identify similar locations.