Recommending the correct neighbourhood To a new home buyer

Selecting a good home is not just about owning a place

- The user also needs to consider facilities and services
  offered in the nearby region,
  such as snack bars, hotels, theaters etc.

- This project aims to be a recommendation engine that recommends
  Neighborhoods based on user's input of desired services

- This can be used by home buyers directly as well as
  real estate agents who make suggestions to their
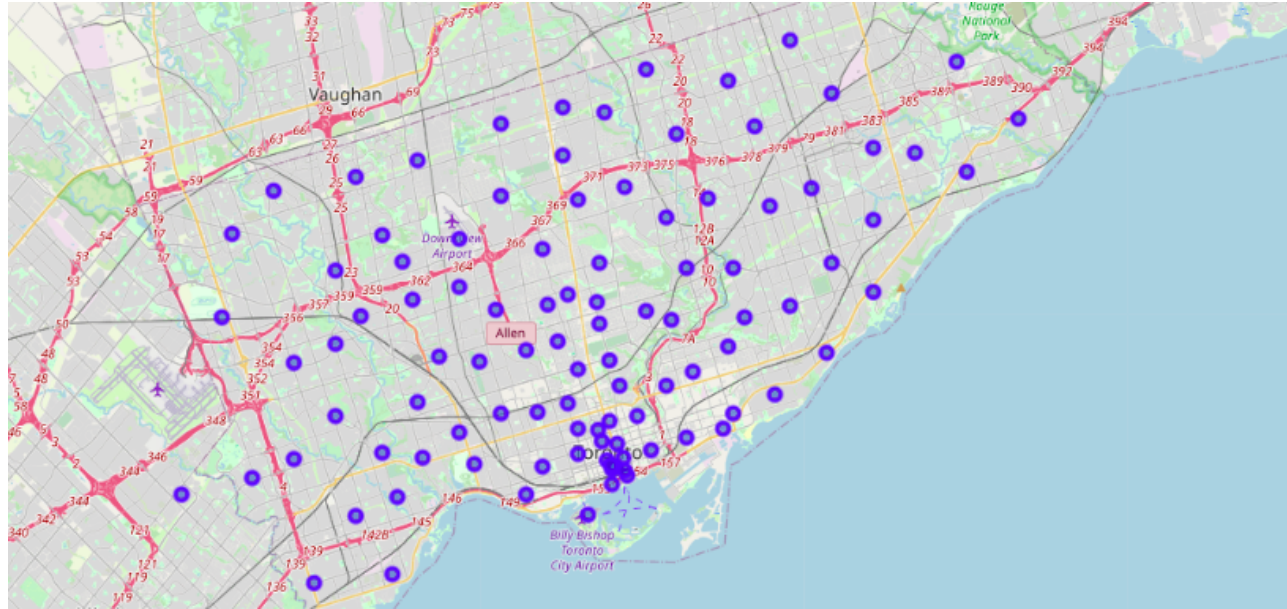 customers.

Data acquisition and cleaning

- The neighbourhood data (PostalCodes mainly) will be scraped from public websites and then using FourSquare API, the corresponding venues and their categories will be extracted.

- Using geocoder, relevant category information will be extracted.

Sample of extracted data

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Parkwoods	43.753259	-79.329656	Brookbanks Park	43.751976	-79.332140	Park
1	Parkwoods	43.753259	-79.329656	KFC	43.754387	-79.333021	Fast Food Restaurant
2	Parkwoods	43.753259	-79.329656	Variety Store	43.751974	-79.333114	Food & Drink Shop
3	Victoria Village	43.725882	-79.315572	Victoria Village Arena	43.723481	-79.315635	Hockey Arena
4	Victoria Village	43.725882	-79.315572	Tim Hortons	43.725517	-79.313103	Coffee Shop
5	Victoria Village	43.725882	-79.315572	Portugril	43.725819	-79.312785	Portuguese Restaurant
6	Victoria Village	43.725882	-79.315572	Pizza Nova	43.725824	-79.312860	Pizza Place
7	Regent Park, Harbourfront	43.654260	-79.360636	Roselle Desserts	43.653447	-79.362017	Bakery
8	Regent Park, Harbourfront	43.654260	-79.360636	Tandem Coffee	43.653559	-79.361809	Coffee Shop
9	Regent Park, Harbourfront	43.654260	-79.360636	Cooper Koo Family YMCA	43.653249	-79.358008	Distribution Center

Extracted venue locations in Toronto

Classification model

- KNN with n_neighbours=1

- Recall score: 0.91

- F1 score: 0.91

Conclusion and future directions

- Here, an approach based on classification is given for recommendation of a neighborhood that
best provides the facilities required by the user.

- This can be improved by including location information, For example, instead of restaurant being
scored as 1, it can be scaled to express the distance from user's location.