Moving to Toronto: A Study in the Livability Factor of the City

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Outline

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- Data
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Problem

Where is the best place to live in Toronto?

Hypothesis

Best places to live in Toronto will be where Parks and other natural recreational facilities exist in close proximity

Data

- Data comes from Wikipedia for the neighborhood postal codes and from foursquare for the amenity data

- Used the Geocoder module to collate the data and match it up

- All data was put into Pandas Dataframes, example on right

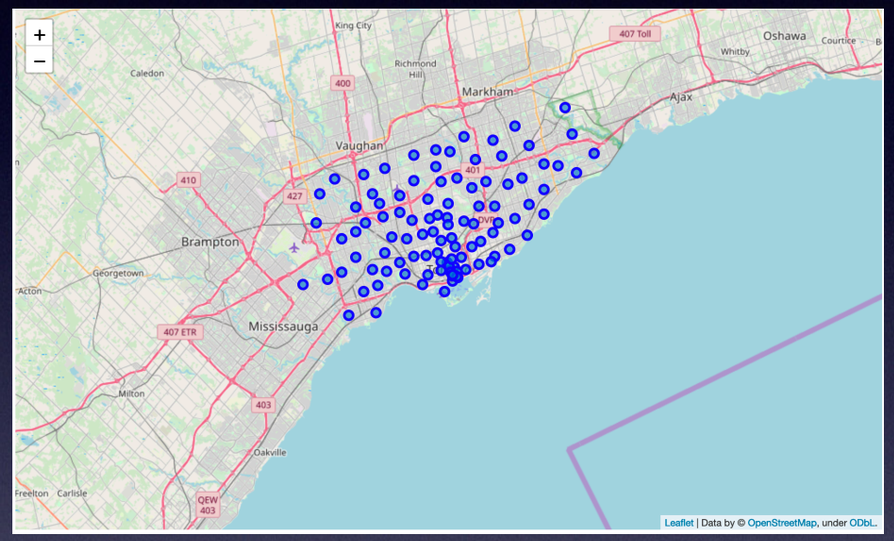
Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Parkwoods	43.753259	-79.329656	Brookbanks Park	43.751976	-79.332140	Park
Parkwoods	43.753259	-79.329656	Variety Store	43.751974	-79.333114	Food & Drink Shop
Victoria Village	43.725882	-79.315572	Victoria Village Arena	43.723481	-79.315635	Hockey Arena
Victoria Village	43.725882	-79.315572	Tim Hortons	43.725517	-79.313103	Coffee Shop
Victoria Village	43.725882	-79.315572	Portugril	43.725819	-79.312785	Portuguese Restaurant
Victoria Village	43.725882	-79.315572	Eglinton Ave E & Sloane Ave/Bermondsey Rd	43.726086	-79.313620	Intersection

How we did it

- One hot encoding to turn venues into numerical data

- Group data by type of surrounding amenities using a KNN algorithm

- Print out maps of venues, as well as a printed statement showing the clusters and the types of Amenities present



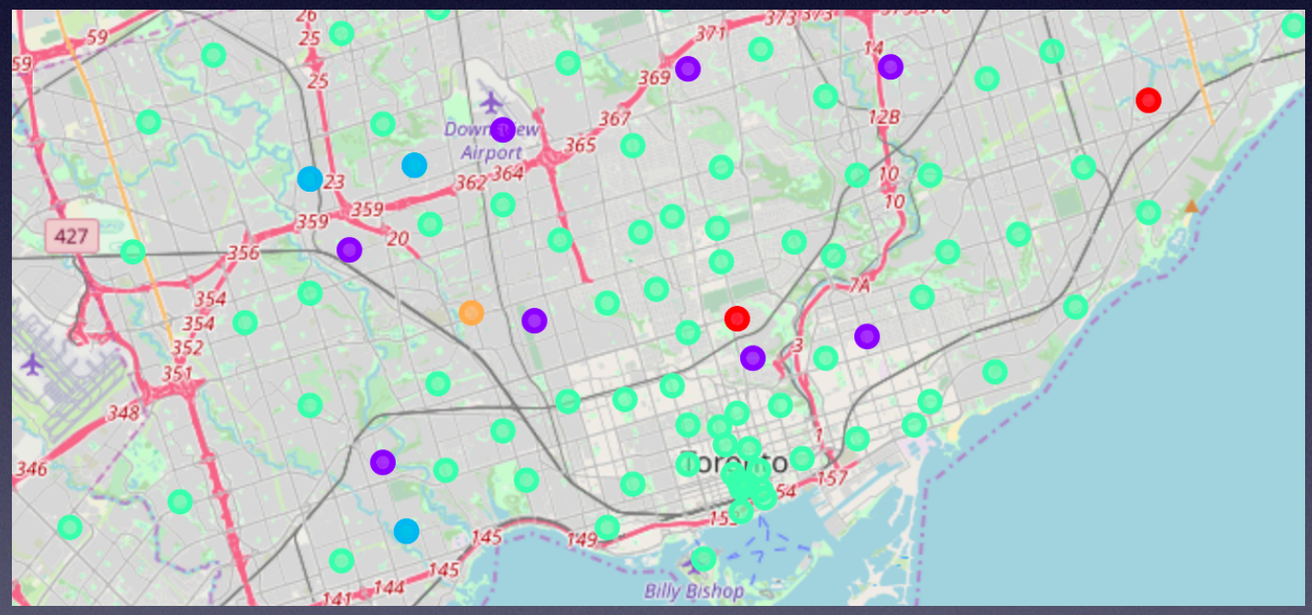
A Map showing all the Locations

Results

- Cluster 1 (Purple Dots): Public spaces. These are the ideal neighbourhoods, defined by being relatively close in proximity to natural features

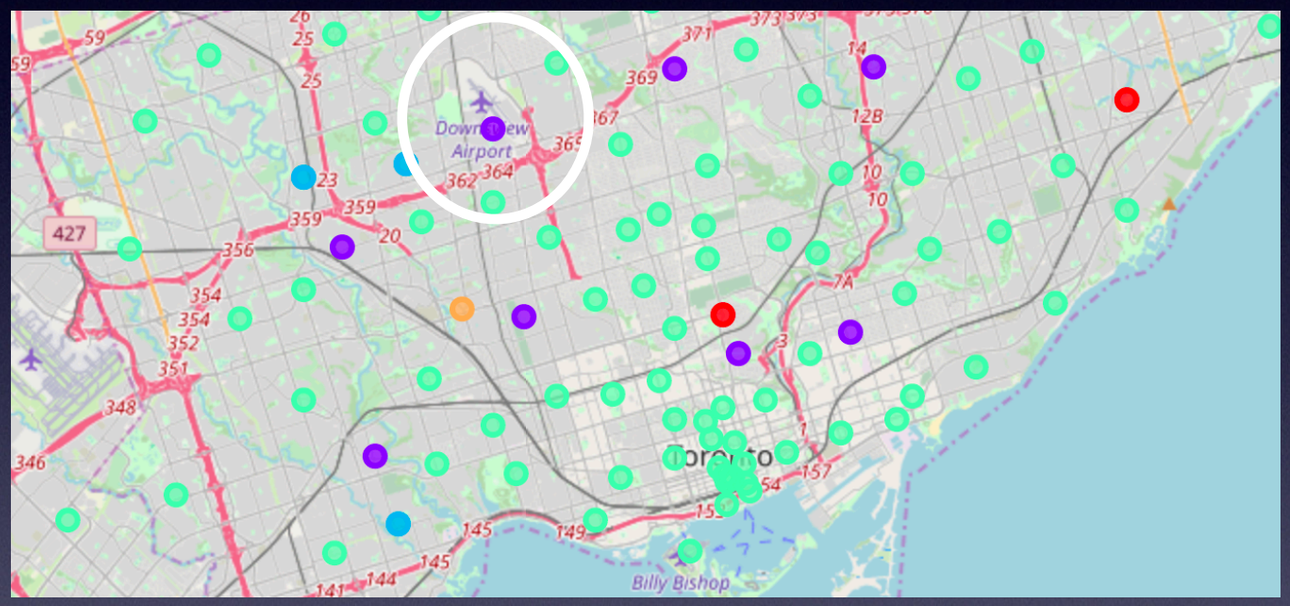
- Cluster 3(Green Dots): Malls. These are neighbourhoods that are in close proximity to

- Clusters 0,2,4,5 (Other Colored Dots): These are the other clusters, no ascertainable defining features to them



Caveats

Some places meet the expectations/criteria of the cluster that they are in, while not completely aligning. The best example of this is the circled purple dot, which is nearby an airport. While the airport may qualify as a public space, the noise one would create is counter to what would qualify as a good space to live near



Resources

- https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M
- https://geocoder.readthedocs.io/
- https://www.coursera.org/learn/applied-data-science-capstone/home/week/3