

The background is a gradient of deep blue and purple, speckled with small white dots resembling stars. Overlaid on this are several faint, white circular and semi-circular lines, some with arrows indicating a clockwise direction. A large, semi-circular scale with numerical markings (40, 150, 160, 170, 180, 200, 210, 220, 230, 240, 250, 260) is visible on the left side, partially obscured by the text.

CAPSTONE PROJECT - THE BATTLE OF NEIGHBORHOODS

INTRODUCTION

- Nowadays myriads of people are migrating to Canada and they are struggling with problems like finding a good neighborhood, house pricing, good school or universities for their children. Moreover, this was exactly the problems I faced last year when I started the process of applying for master's degree in Canada. It takes a lot of time to find the good school or house with reasonable pricing especially in such large cities like Toronto. As me myself has come up against this problem I know how helpful would be to have program which analyses all these data.

OBJECTIVE

- The objective of this project is to sort list of houses based on house pricing and schools based on ratings and reviews to help people migration to Scarborough, Toronto.

- Scarborough is a large, multicultural area that contains the Scarborough Bluffs, huge cliffs overlooking Lake Ontario, lined with parks, beaches, and hiking trails. Inland, the sprawling Toronto Zoo features global animal pavilions, close-up encounters, and a wildlife health center. The area is also known for its diverse spread of restaurants, including regional Southeast Asian, Chinese, and Indian cuisine

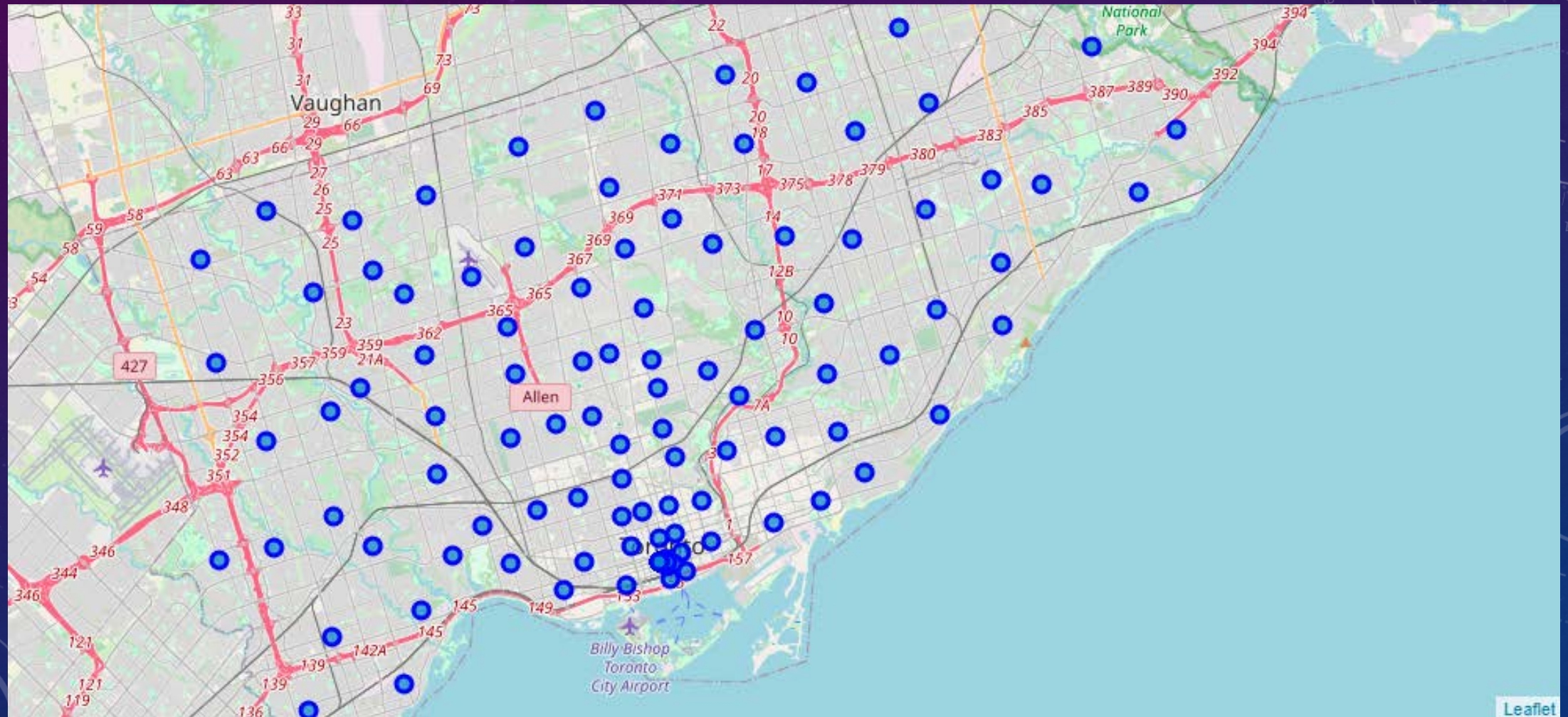
- This project would use Four-square API as its prime data gathering source as it has a database of millions of places, especially their places API which provides the ability to perform location search, location sharing and details about a business.

- To compare the similarities of two cities, we decided to explore neighborhoods, segment them, and group them into clusters to find similar neighborhoods in a big city 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, which are used: Pandas, Folium, Scikit Learn, JSON, XML, Beautiful Soup and Matplotlib.

DATA

- I will use Scarborough dataset from Wikipedia on Week 3. Dataset consisting of latitude and longitude, zip codes: https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

SCARBOROUGH MAP



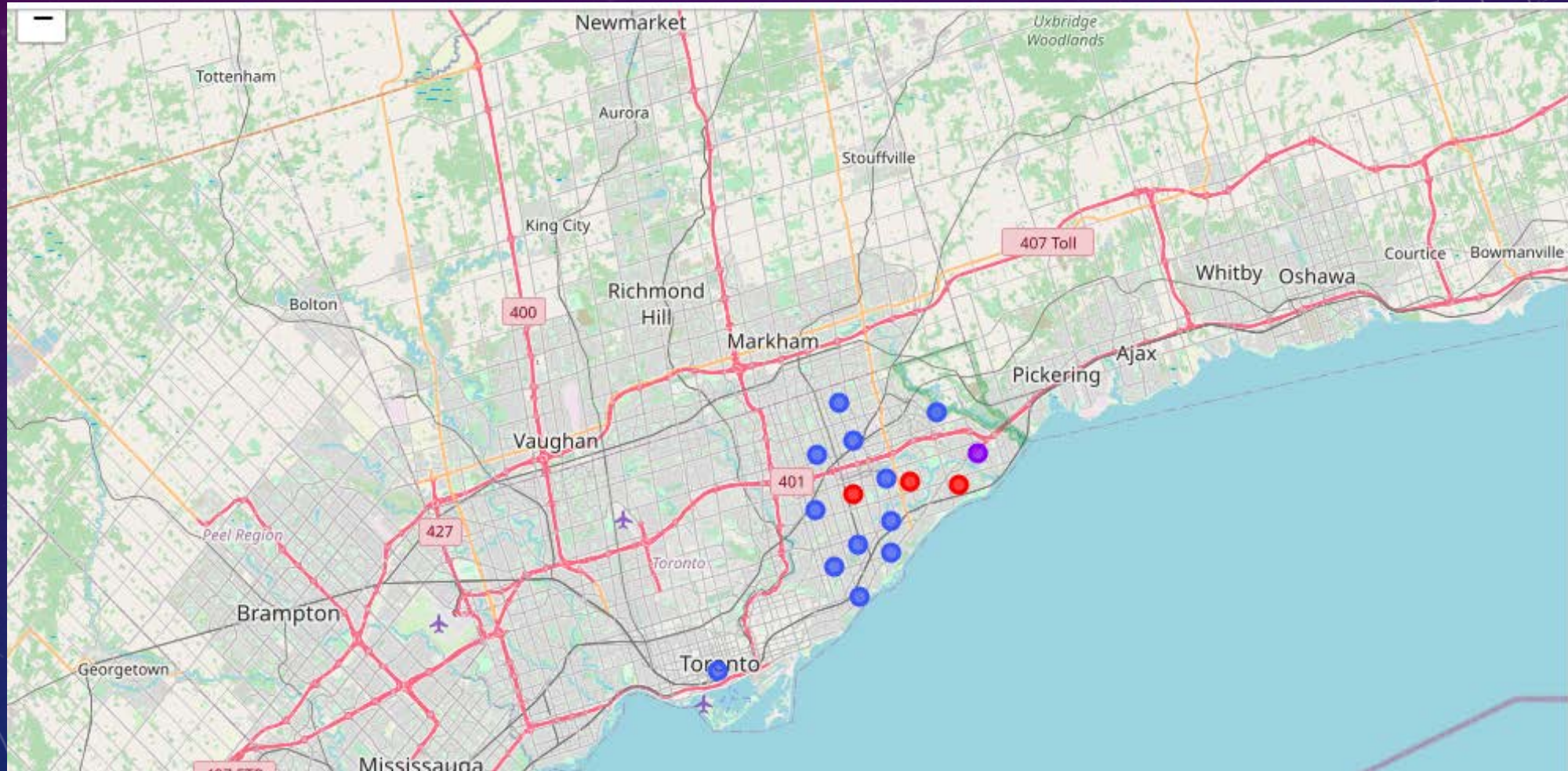
USING K-MEANS CLUSTERING APPROACH

ough	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Not assigned	Not assigned	43.64869	-79.38544	2	Coffee Shop	Hotel	Café	Restaurant	Beer Bar	Japanese Restaurant	Tea Room	Arts & Crafts Store	Steakhouse	Pizza Place
gh	Malvern, Rouge	43.81153	-79.19552	2	Zoo Exhibit	Fast Food Restaurant	Farmers Market	Paintball Field	Ethiopian Restaurant	Doner Restaurant	Donut Shop	Dumpling Restaurant	Eastern European Restaurant	Electronics Store
gh	Rouge Hill, Port Union, Highland Creek	43.78564	-79.15871	1	Bar	Home Service	Fish & Chips Shop	Yoga Studio	Event Space	Donut Shop	Dumpling Restaurant	Eastern European Restaurant	Electronics Store	Ethiopian Restaurant
gh	Guildwood, Morningside, West Hill	43.76575	-79.17520	0	Park	Athletics & Sports	Gym / Fitness Center	Yoga Studio	Dive Bar	Doner Restaurant	Donut Shop	Dumpling Restaurant	Eastern European Restaurant	Electronics Store
gh	Woburn	43.76820	-79.21761	0	Park	Fast Food Restaurant	Chinese Restaurant	Coffee Shop	Yoga Studio	Doner Restaurant	Donut Shop	Dumpling Restaurant	Eastern European Restaurant	Electronics Store

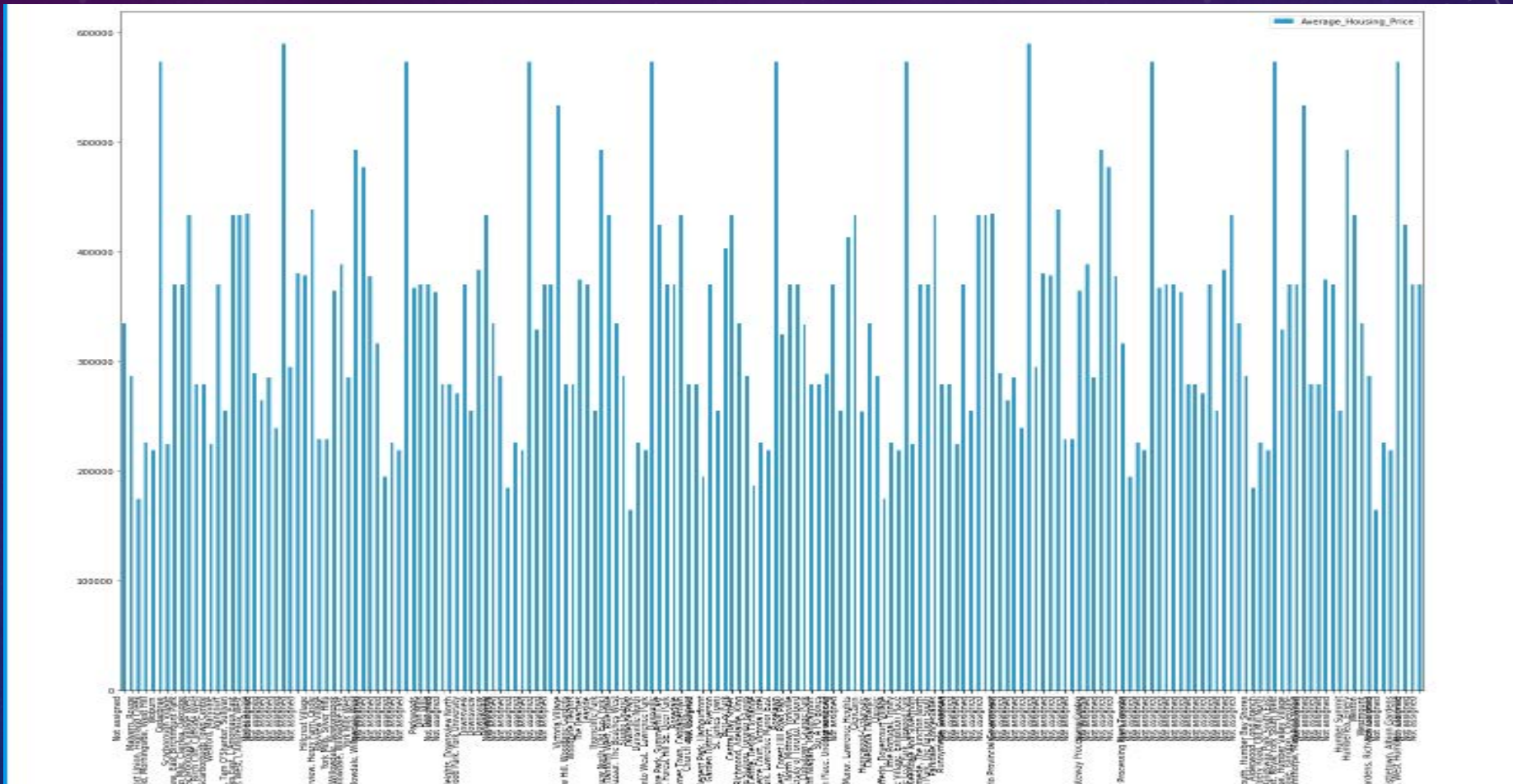
MOST COMMON VENUES NEAR NEIGHBORHOOD

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Agincourt	Chinese Restaurant	Shopping Mall	Pizza Place	Seafood Restaurant	Sushi Restaurant	Supermarket	Latin American Restaurant	Malay Restaurant	Mediterranean Restaurant	Skating Rink
1	Alderwood, Long Branch	Pizza Place	Gym	Sandwich Place	Gas Station	Convenience Store	Pub	Coffee Shop	Athletics & Sports	Dog Run	Doner Restaurant
2	Bathurst Manor, Wilson Heights, Downsview North	Park	Convenience Store	Other Great Outdoors	Yoga Studio	Doner Restaurant	Donut Shop	Dumpling Restaurant	Eastern European Restaurant	Electronics Store	Ethiopian Restaurant
3	Bayview Village	Park	Asian Restaurant	Locksmith	Trail	Event Space	Doner Restaurant	Donut Shop	Dumpling Restaurant	Eastern European Restaurant	Electronics Store
4	Bedford Park, Lawrence Manor East	Pizza Place	Restaurant	Italian Restaurant	Sandwich Place	Thai Restaurant	Coffee Shop	Pub	Pharmacy	Pet Store	Butcher

MAP OF CLUSTERS IN SCARBOROUGH



AVERAGE HOUSING PRICE BY CLUSTERS IN SCARBOROUGH



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