

CAPSTONE PROJECT - THE BATTLE OF
NEIGHBORHOODS

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*OPEN A
RESTAURANT
IN TORONTO*



INTRODUCTION

- Overall Background--Toronto:
 - Capital of the province of Ontario, is a major Canadian city along Lake Ontario's northwestern shore
 - GDP: 385,934 dollars
 - Population: 27,31,571



INTRODUCTION

- Goal:
 - Open a restaurant in Toronto and make profits
- 3 Criteria:
 - Population density in neighborhoods
 - Ethic in Toronto
 - Cluster of people
- Conclusion:
 - Type of the restaurant
 - Location
 - Operation strategies



DATA

- Neighborhood Profiles from Toronto Government Website
 - Population in each area
 - Ethic for the whole city
- Community Housing dataset
 - The number of markets in each area
 - RGI
 - Rent-Geared-to-Income (RGI) which is a housing subsidy or benefit offered by the City of Toronto to make rent affordable
- Toronto Geometry file
 - In GEOJSON

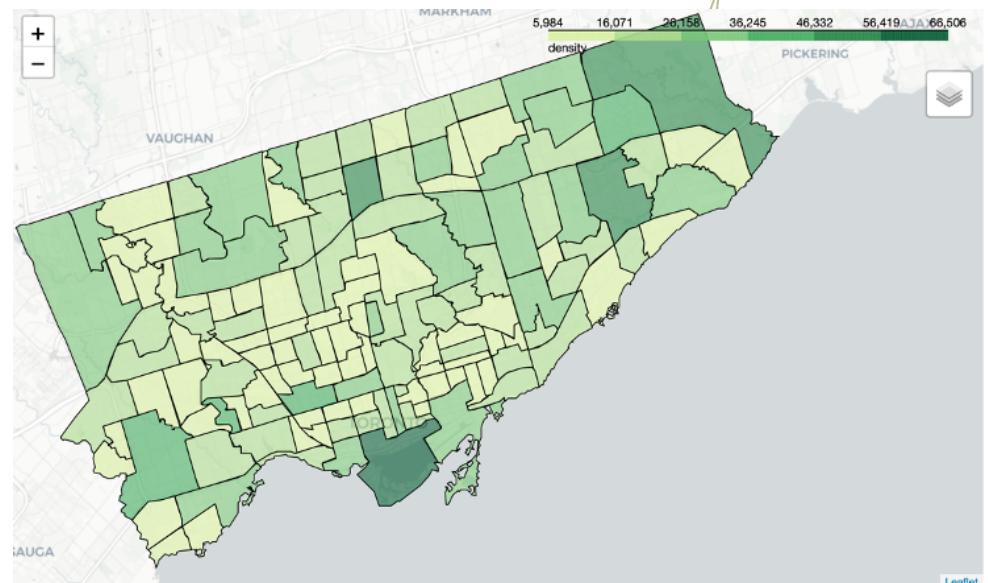




METHODOLOGY

POPULATION DENSITY

- Demography including the population in each neighborhood and the increasing rate
- Split neighborhood profiles data to acquire population
- Apply choropleth map with GEOJSON file
- Deeper, higher density



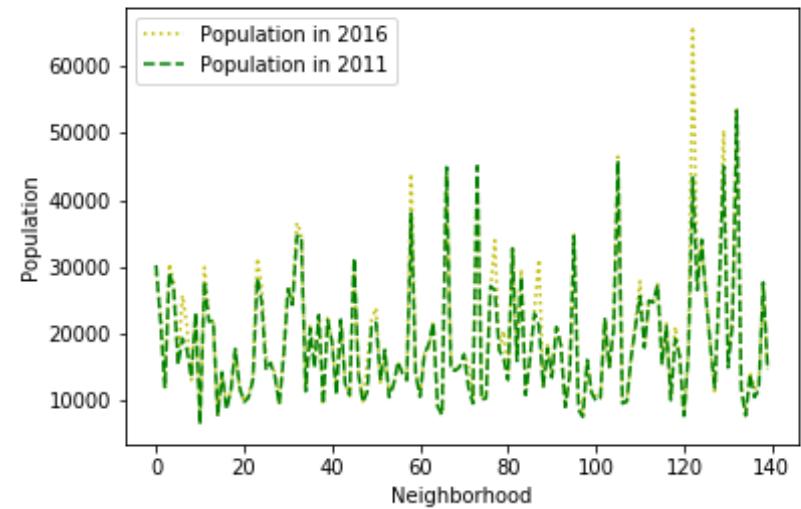
[89]:

	id	area_id	Population	neighborhood
122	10472	2480154	65913	Waterfront Communities-The Island
132	10441	2480096	53485	Woburn
129	10500	2480065	50434	Willowdale East
105	10477	2480078	46496	Rouge
66	10461	2480158	43993	L'Amoreaux
58	10476	2480079	43965	Islington-City Centre West
73	10459	2480160	43794	Malvern
32	10465	2480156	36625	Dovercourt-Wallace Emerson-Junction
33	10368	2480137	35052	Downsview-Roding-CFB
95	10434	2480103	34805	Parkwoods-Donalda
77	10453	2480164	33964	Mimico (includes Humber Bay Shores)
124	10385	2480131	33312	West Humber-Clairville
81	10395	2480050	32954	Mount Olive-Silverstone-Jamestown
23	10468	2480083	31340	Church-Yonge Corridor
87	10438	2480099	31180	Niagara
3	10362	2480140	30526	Annex
45	10402	2480121	30491	Glenfield-Jane Heights
11	10447	2480092	29960	Bendale
83	10383	2480051	29658	Mount Pleasant West
0	10417	2480178	29113	Agincourt North

- *Neighborhoods with Top 20 Population*
- Three highest density neighborhoods:
 - Waterfront Communities-The Island
 - Woburn
 - Willowdale East

POPULATION TRENDS

- Decrease the impact of outdated data
- Compare the population in 2011 and 2016
- Waterfront Communities-The Island increases its population dramatically followed by Niagara and Henry Farm

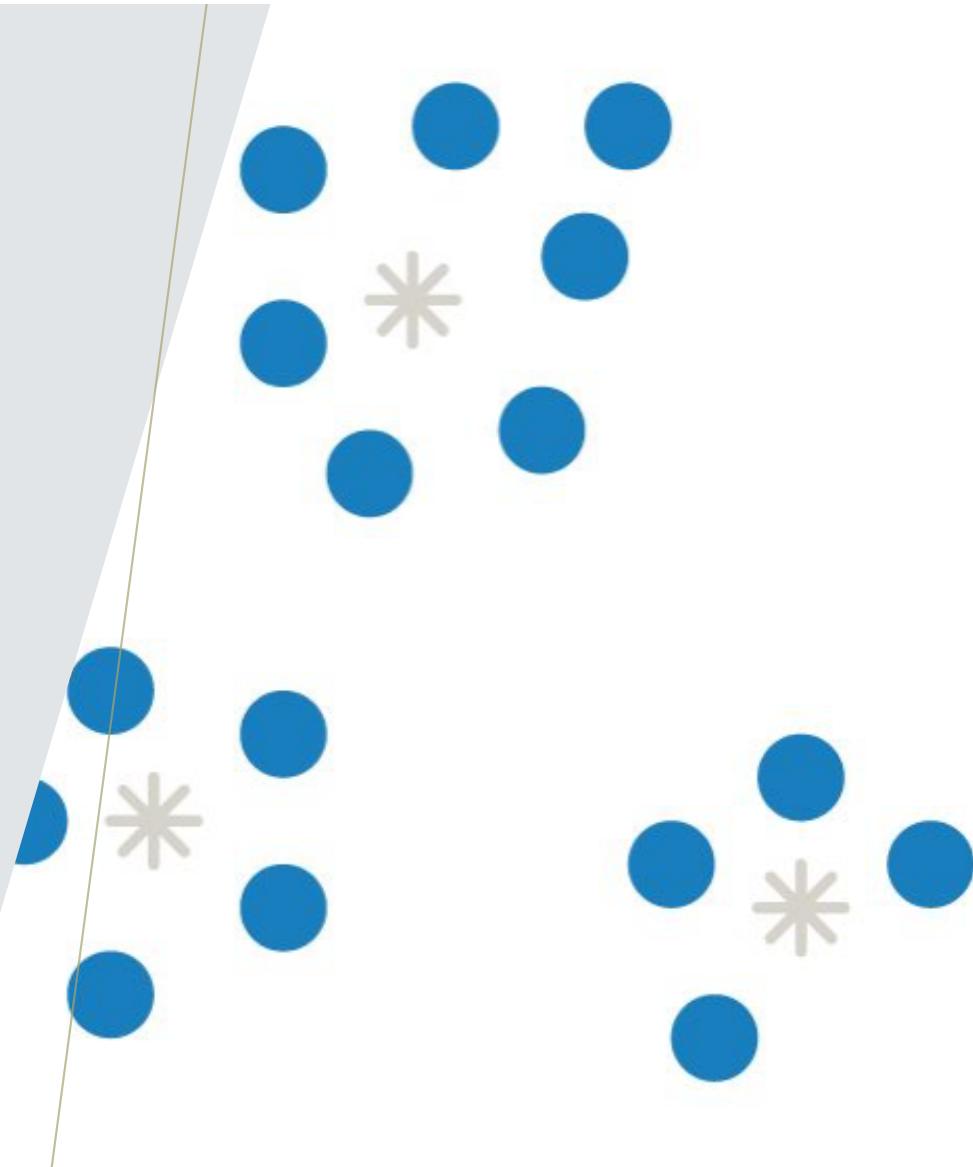


	Characteristic	City of Toronto
1365	European origins	1288850
1550	Asian origins	1079290
1366	British Isles origins	597295
1598	East and Southeast Asian origins	586515
1414	Southern European origins	441485
1582	South Asian origins	350040
1354	Other North American origins	345710
1601	Chinese	332830
1369	English	331895
1357	Canadian	323175
1397	Eastern European origins	302485
1370	Irish	262965
1586	East Indian	202675
1379	Western European origins (except French origins)	187190
1421	Italian	182500

ETHIC ANALYSIS

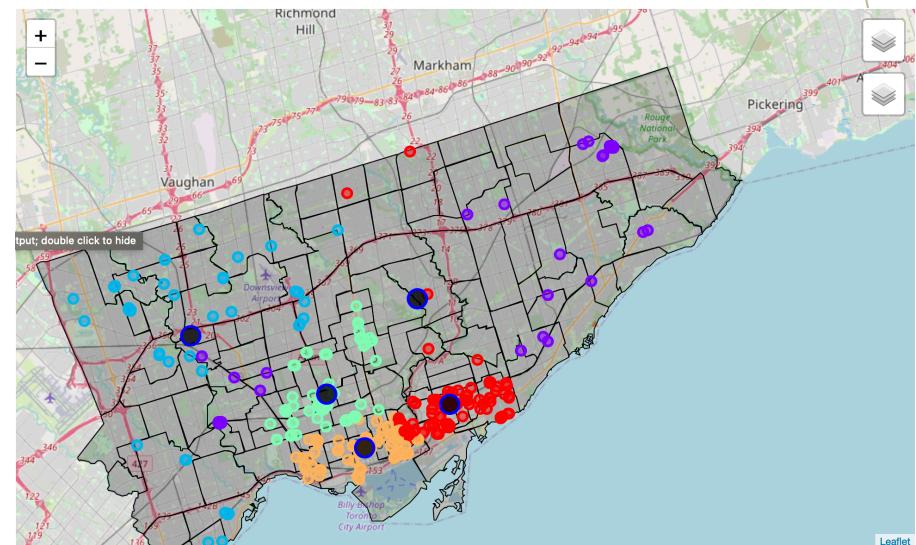
- Split the original dataset into a new data set with data:
 - The ethic
 - Total number of people with that ethic in Toronto
- First 7 rows represent the continents
- Starting with row 8 represents each country
- Most people are European origins and Chinese ethic

FINANCE ANALYSIS



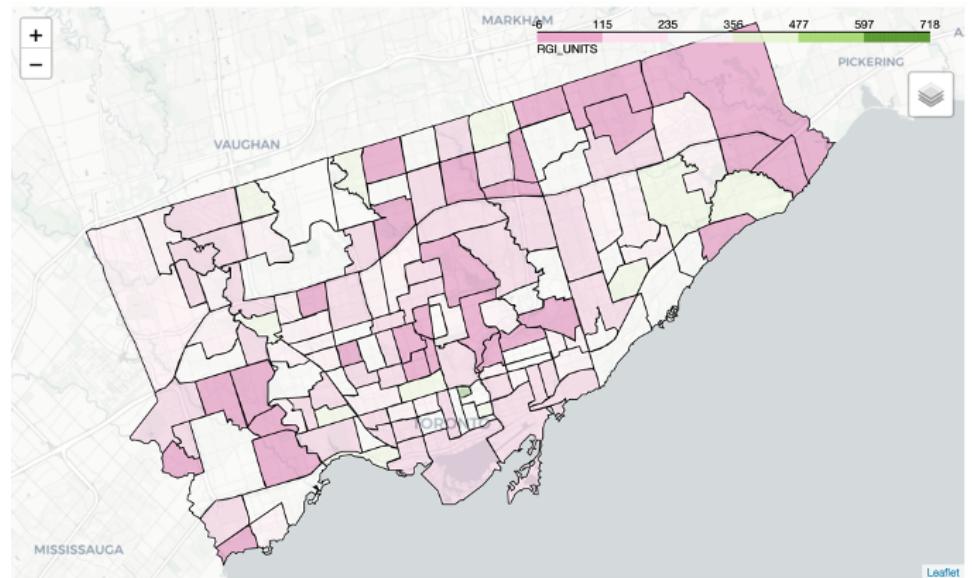
CLUSTER OF MARKETS

- Data contain:
 - The number of markets in each area
 - The neighborhood codes
 - Geometry information
- Using K-Mean clustering
- Circles with different colors represent each cluster
- Larger and dark circles represent the centers of each cluster



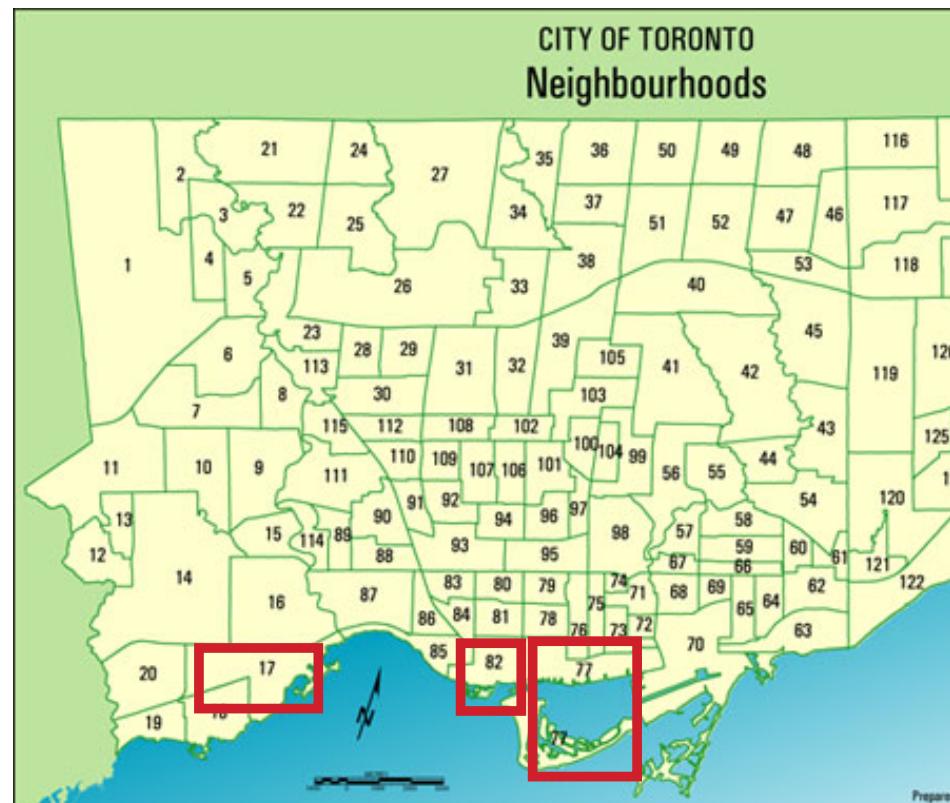
RGI ANALYSIS

- Data contains:
 - RGI in each area
- Sort the data by RGI
- Visualize the result into the map



RESULT

- Any of these three neighborhoods is a good one to open a restaurant:
 - Waterfront Communities-The Island (Neighborhood Number: 77)
 - Niagara (Neighborhood Number: 82)
 - Mimico (Neighborhood Number: 17)
- Possible type:
 - Canadian
 - Chinese
 - Fast food
- Possible Strategies:
 - Advertise in centers of each clusters
 - Determine detailed location based on clusters of markets



DISCUSSION



Data in 2016 is outdated

Analyzed the trends of the population between 2011 & 2016 to decrease the impact



Opening a restaurant can be complex project

This project is the first step to provide the overall situation in Toronto



Future study can include:

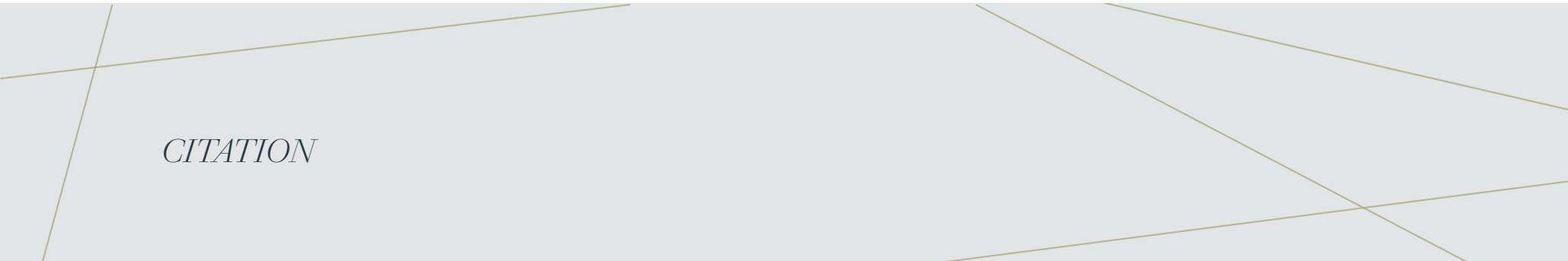
Salary Analysis
Competitiveness Analysis
The range of the price
The operation cost

CONCLUSION

- This project provides a stable and viable plan to move a step forward for opening a restaurant in Toronto
- Possible solution:
 - Neighborhood:
 - Waterfront Communities-The Island
 - Niagara
 - Mimico
 - Types:
 - Canadian
 - Chinese
 - Fast Food
- Viable Strategies
 - Advertise in centers of each clusters
 - Determine specific location based on cluster of markets



*THANKS FOR
YOUR WATCHING*



CITATION

- Toronto GDP: Statistics Canada. Table 36-10-0468-01 Gross domestic product (GDP) at basic prices, by census metropolitan area (CMA) (x 1,000,000)
- Toronto Neighborhood Profile: Statistics Canada. 2016 Neighborhood Profiles