

A decorative graphic on the left side of the slide consists of white lines resembling a circuit board or a tree structure, with small circles at the end of the branches, set against a blue gradient background.

# THE BATTLE OF TORONTO NEIGHBOURHOODS

CAPSTONE PROJECT

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# FINDING BEST TORONTO NEIGHBOURHOODS

- Customer is the settlement agencies who work on settlement issues for newcomers. They want to find the best neighbourhoods in Toronto based on available services in a short distance. Their customers are mostly interested on those neighborhoods.
- Question need to Answer:  
"Find best neighborhoods depending on the nearby available services"

# BACKGROUND

- Toronto, the capital of the province of Ontario, is a major Canadian city
- Nearly one million immigrants will be coming to Canada over the next three years, and tens of thousands of them will wind up in Toronto
- Settlement services are one of the most important service provided by many government and non-profit organization
- Everyday hundreds of the newcomers are coming to get information about the neighborhoods where they can start their Canada life

# ORGANIZATIONS

- Settlement service organizations are now trying to find the best neighborhoods based on the nearby services
- They have high volume of query to find the best Neighbourhoods to live

# DATA PREPARATION

- Toronto neighborhoods are scraped from Wikipedia table

## Toronto - FSAs [\[ edit \]](#)

Note: There are no rural FSAs in Toronto, hence no postal codes start with M0.

Postcode ↕	Borough ↕	Neighbourhood ↕
M1A	Not assigned	Not assigned
M2A	Not assigned	Not assigned
M3A	<a href="#">North York</a>	<a href="#">Parkwoods</a>
M4A	<a href="#">North York</a>	<a href="#">Victoria Village</a>
M5A	<a href="#">Downtown Toronto</a>	<a href="#">Harbourfront</a>
M5A	<a href="#">Downtown Toronto</a>	<a href="#">Regent Park</a>
M6A	<a href="#">North York</a>	<a href="#">Lawrence Heights</a>
M6A	<a href="#">North York</a>	<a href="#">Lawrence Manor</a>
M7A	<a href="#">Queen's Park</a>	Not assigned
M8A	Not assigned	Not assigned
M9A	<a href="#">Etobicoke</a>	<a href="#">Islington Avenue</a>
M1B	<a href="#">Scarborough</a>	<a href="#">Rouge</a>

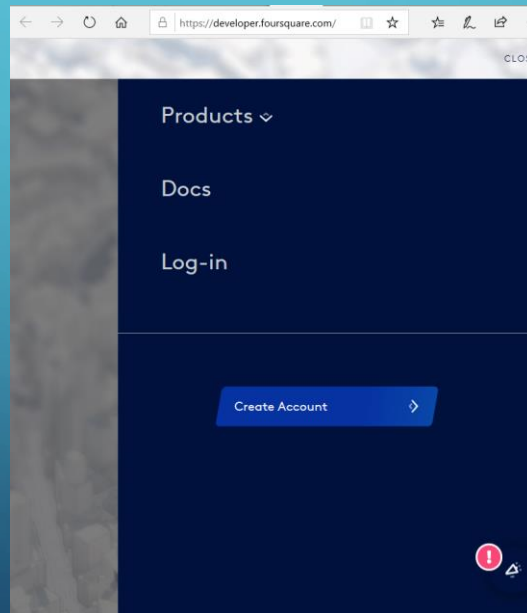
# DATA PREPARATION

- Geological information like Latitude and Longitude for the postal areas

Postal Code	Latitude	Longitude
M1B	43.80669	-79.1944
M1C	43.78454	-79.1605
M1E	43.76357	-79.1887
M1G	43.77099	-79.2169
M1H	43.77314	-79.2395
M1J	43.74473	-79.2395
M1K	43.72793	-79.262
M1L	43.71111	-79.2846
M1M	43.71632	-79.2395
M1N	43.69266	-79.2648

# DATA PREPARATION

- Foursquare API to get the venues inside Toronto and their geographical information



# DATA CLEANING AND PREPARATION

- Collect data from different sources
- Handled missing data / Not Assigned data
- Combined data set based on common column information
- Generate Toronto Map based on the prepared data





# GRABBING DATA FROM FOURSQUARE

```
toronto_venues.head(15)
```

	Postal Code	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Summary	Venue Category	Distance
0	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Roselle Desserts	This spot is popular	Bakery	143
1	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Tandem Coffee	This spot is popular	Coffee Shop	122
2	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Toronto Cooper Koo Family Cherry St YMCA Centre	This spot is popular	Gym / Fitness Center	247
3	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Impact Kitchen	This spot is popular	Restaurant	376
4	M5A	Harbourfront,Regent Park	43.65426	-79.360636	The Distillery Historic District	This spot is popular	Historic Site	459
5	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Distillery Sunday Market	This spot is popular	Farmers Market	475
6	M5A	Harbourfront,Regent Park	43.65426	-79.360636	SOMA chocolatemaker	This spot is popular	Chocolate Shop	452
7	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Body Blitz Spa East	This spot is popular	Spa	80
8	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Rooster Coffee	This spot is popular	Coffee Shop	479
9	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Souk Tabule	This spot is popular	Mediterranean Restaurant	506
10	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Arvo	This spot is popular	Coffee Shop	482
11	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Figs Breakfast & Lunch	This spot is popular	Breakfast Spot	349
12	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Cacao 70	This spot is popular	Dessert Shop	466
13	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Corktown Common	This spot is popular	Park	387
14	M5A	Harbourfront,Regent Park	43.65426	-79.360636	Sumach Espresso	This spot is popular	Coffee Shop	440

# DATA CATEGORIZATION (CONTD..)

- Get 272 category
- Combined
- them into 9 main category

There are 272 uniques categories.  
Here is the list of different categories:

```
['Bakery',  
 'Coffee Shop',  
 'Gym / Fitness Center',  
 'Restaurant',  
 'Historic Site',  
 'Farmers Market',  
 'Chocolate Shop',  
 'Spa',  
 'Mediterranean Restaurant',  
 'Breakfast Spot',  
 ...]
```

	Snacks	Shop	Fitness	Restaurant	Entertainment	Grocery	Bar	PUB	Shop	Services	Facilities
Neighborhood											
Adelaide,King,Richmond	22	6	26	21	0	5	11	1	1		
Berczy Park	26	2	18	22	4	7	9	2	1		
Brockton,Exhibition Place,Parkdale Village	27	5	23	14	0	9	6	3	0		
Business Reply Mail Processing Centre 969 Eastern	11	1	12	7	2	3	2	6	0		
CN Tower,Bathurst Quay,Ieland airport,Harbourfront West,King and Spadina,Railway Lands, South Niagara	4	0	0	6	0	0	1	2	0		

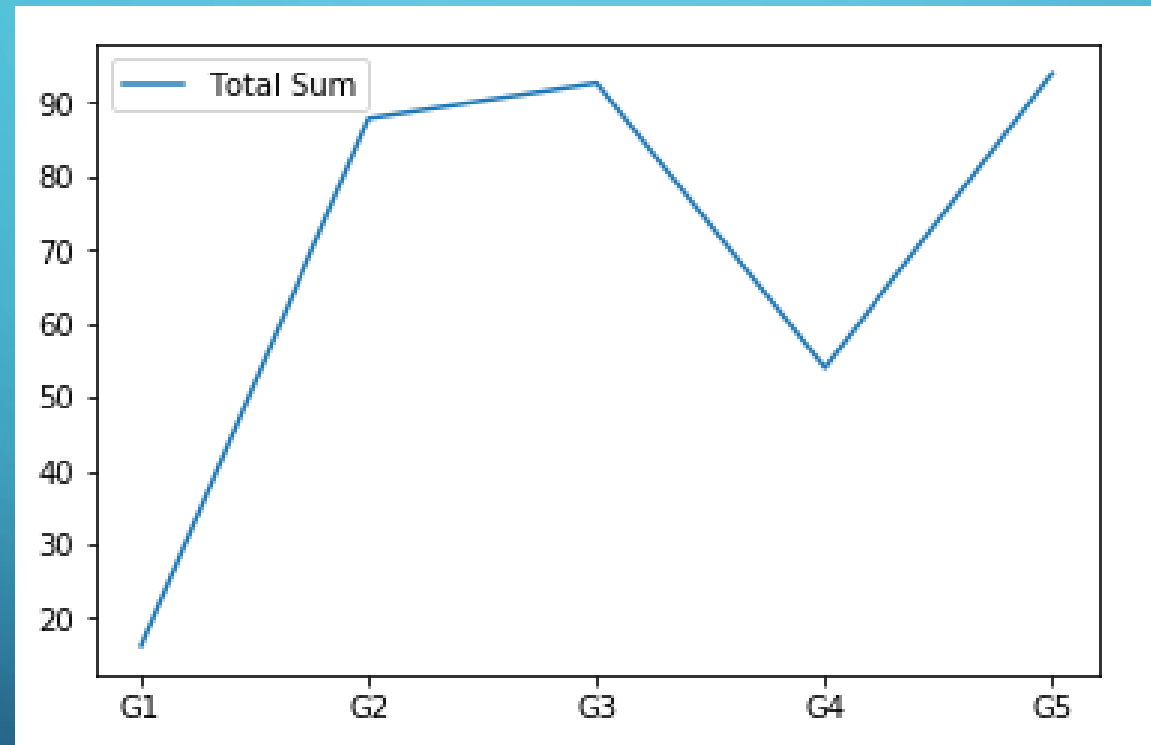
# DATA CATEGORIZATION

A stacked bar chart titled "Data Categorization" illustrating the distribution of features across 40 different Toronto neighborhoods. The y-axis, labeled "Features", ranges from 0 to 100 in increments of 20. The x-axis lists the neighborhoods, which are rotated vertically for readability. Each bar is composed of colored segments representing different feature categories. A legend in the center-right of the chart area defines the color coding:

- Snacks Shop (Blue)
- Fitness (Orange)
- Restaurant (Green)
- Entertainment (Red)
- Grocery (Purple)
- Bar PUB (Pink)
- Shop (Light Blue)
- Services (Grey)
- Facilities (Yellow)

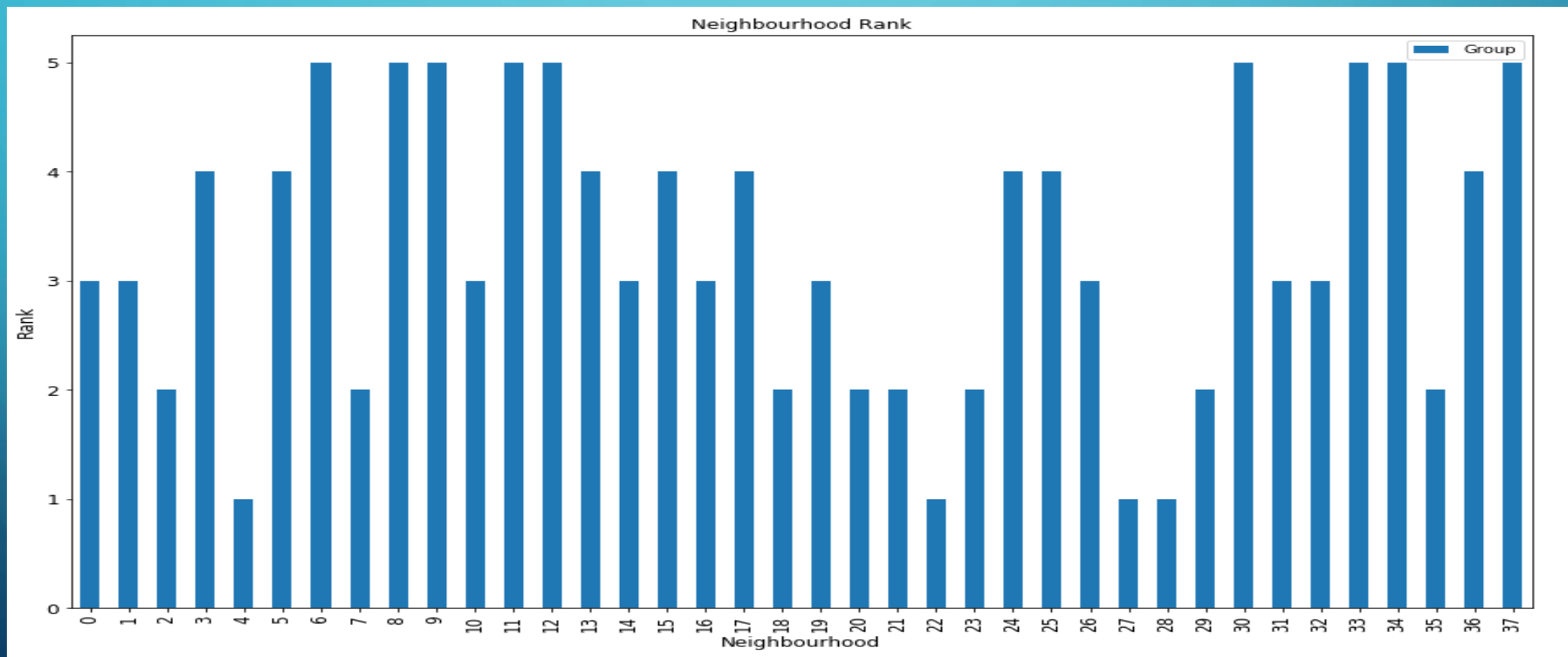
The chart shows varying levels of feature density across neighborhoods. For example, "Adelaide King Richmond" has a very high total count of features, while "Lawrence Park" has a significantly lower count. Most neighborhoods have a mix of all feature types, though some show higher concentrations of specific categories like "Fitness" or "Entertainment".

# CLUSTERING





# RANKING



# BEST NEIGHBOURHOODS

	Neighbourhood	Group
6	Central Bay Street	5
8	Christie	5
9	Church and Wellesley	5
11	Davisville	5
12	Davisville North	5
30	Ryerson, Garden District	5
33	Studio District	5
34	The Annex, North Midtown, Yorkville	5
37	The Danforth West, Riverdale	5

# BEST NEIGHBORHOOD MAP





# CONCLUSION

- Best neighborhoods based on nearby services found on Foursquare
- Can be improved by adding other information like:  
Population, Subway, Transportation, Education
- Considered all the data getting from Foursquare
- Approximately the best solutions