

# CAPSTONE PROJECT – THE BATTLE OF LONDON NEIGHBOURHOODS

## Introduction

## Background

I chose the location for Toronto, ON. Toronto is becoming most populated city in Canada, and becoming most popular multi-cultural city. For that reason, there are many kinds of restaurants exist such as Chinese, Korean, Japanese, French, and etc.

## Problem

In Toronto, there are already so many Japanese restaurants exist. Investors want to open a Japanese restaurant in Toronto. They would like to find a place which can avoid a place having several competitors near by. Also, the place should attract the crowd.

## Target Audience

They are people who want to invest or open Japanese restaurant in Toronto, but they also can be people who want to open any kind of restaurants.

## Methodology

- **Analyzing Problem**
- **Data Sourcing, Collecting data**

### Data

I used wikipedia postal codes of Canada

```
requests.get('https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M').text
```

- **Foursquare Data**

```
address = 'Toronto, ON'

geolocator = Nominatim(user_agent="foursquare_agent")
```

0	Kyoto House Japanese Restaurant	Sushi Restaurant	143 Dundas St. West	CA	Toronto	Canada	NAN	221	143 Dundas St. West, Toronto ON, Canada	["label": "Wellesley", "lat": 43.655381, "lon": -79.385270]	NAN	ON
1	Uncle Tetsu's Japanese Angel Cafe	Cafe	191 Dundas St. West	CA	Toronto	Canada	At Centre Ave.	118	191 Dundas St. West (At Centre Ave.), Toronto...	["label": "Wellesley", "lat": 43.655001, "lon": -79.386899]	NAN	ON
2	Fune Japanese Restaurant	Japanese Restaurant	100 Dundas St.	CA	Toronto	Canada	at Pearl St.	609	100 Dundas St. (at Pearl St.), Toronto ON, Ca...	["label": "Wellesley", "lat": 43.648514, "lon": -79.384457]	NAN	ON
3	Spring Rolls Japanese Restaurant in Toronto	Themed Restaurant	40 Dundas St. W Box 36,	CA	Toronto	Canada		382	40 Dundas St W Box 36, Toronto ON M5G 2C2, C...	["label": "Wellesley", "lat": 43.65105, "lon": -79.383485]	M5G 2C2	ON
4	Mt. Fuji Japanese Restaurant	Japanese Restaurant	NAN	CA	Toronto	Canada		641	[Toronto ON, Canada]	["label": "Wellesley", "lat": 43.658555, "lon": -79.384992]	NAN	ON
5	Masahiro Japanese Restaurant & Bar	Japanese Restaurant	220 Yonge St.	CA	Toronto	Canada	in Toronto Eaton Centre Urban Eatery	581	220 Yonge St. in Toronto Eaton Centre Urban...	["label": "Wellesley", "lat": 43.655965, "lon": -79.380541]	NAN	ON
6	KAKA Japanese Restaurant	Japanese Restaurant	655 Bay Street	CA	Toronto	Canada	( Bay st & Elm st)	458	655 Bay Street ( Bay st & Elm st), Toronto...	["label": "Wellesley", "lat": 43.657457, "lon": -79.384192]	M5G 1G4	ON
7	Kenzo Ramen	Ramen Restaurant	138 Dundas St. W	CA	Toronto	Canada	at Elizabeth St.	257	138 Dundas St. W (at Elizabeth St.), Toronto...	["label": "Wellesley", "lat": 43.655540, "lon": -79.384866]	M5G 1C3	ON
8	Uncle Tetsu's Chesapeake (Uncle Tetsu's Japanese...	Dessert Shop	998 Bay St	CA	Toronto	Canada	at Dundas St	356	998 Bay St (at Dundas St), Toronto ON M5G 1M5	["label": "Wellesley", "lat": 43.656063, "lon": -79.383695]	M5G 1M5	ON

■ Data Analysis

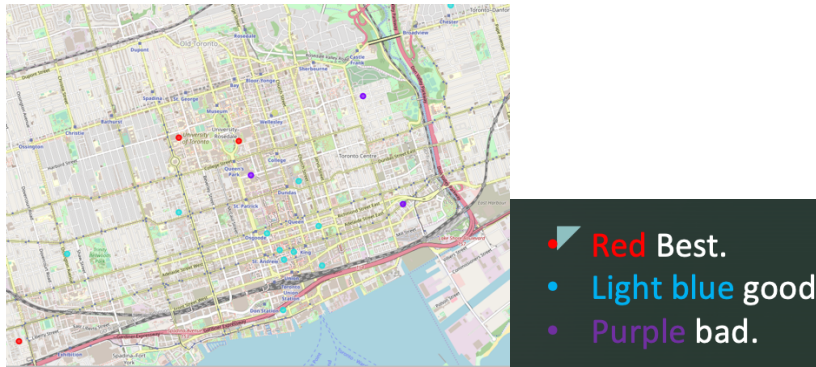
each neighborhood a Scores which helps to know if it will be suitable to open a Japanese restaurant with their neighborhood. This score represents is percentage of Japanese restaurants and general restaurants in the neighborhood.

	Neighborhood	Japanese Venues	Venues	score
0	Adelaide,King,Richmond	3	96	3.125000
3	Bedford Park,Lawrence Manor East	1	21	4.761905
5	Brockton,Exhibition Place,Parkdale Village	1	16	6.250000
6	Cabbagetown,St. James Town	1	28	3.571429
7	Central Bay Street	3	69	4.347826
8	Chinatown,Grange Park,Kensington Market	1	61	1.639344
9	Church and Wellesley	6	62	9.677419
10	Commerce Court,Victoria Hotel	3	100	3.000000
11	Davisville	1	34	2.941176
12	Design Exchange,Toronto Dominion Centre	3	100	3.000000
14	Fairview,Henry Farm,Oriole	1	26	3.846154
15	First Canadian Place,Underground city	3	100	3.000000
18	Harbord,University of Toronto	2	31	6.451613
19	Harbourfront East,Toronto Islands,Union Station	2	68	2.941176
20	Harbourfront,Regent Park	1	24	4.166667

■ K-mean Clustering

	Postal Code	Borough	Neighborhood	Latitude	Longitude	Japanese Venues	Venues	pointer	Cluster Labels
2	M5A	Downtown Toronto	Harbourfront,Regent Park	43.654260	-79.360636	1	24	4.166667	1
4	M7A	Queen's Park	Not assigned	43.662301	-79.389494	2	29	6.896552	0
9	M5B	Downtown Toronto	Ryerson,Garden District	43.657162	-79.378937	3	96	3.125000	2
15	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418	2	84	2.380952	2
24	M5G	Downtown Toronto	Central Bay Street	43.657952	-79.387383	3	69	4.347826	1

## ▪ Data Visualization



## Observations.

*In Toronto, for Mid- downtown it can be good place to open but since there are already many Japanese restaurants exist in Mid downtown, and Old Downtown, it would not be good choice to open at there. West area of Toronto, there are already full of restaurants and East are is same.*

Mid-south downtown, its good area to open a restaurants, but there are some restaraunts with Japanese type, so its not the best choice to open Japanese restaurant. For mid North Downtown such as College and St.George street, there are crowded with people, but there is not many restaurants exist, also no Japanese restaurants. So there are 2 red outliers exists which will be the best place for new Japanese restaurant.

## Conclusion

This projects gives good information to guide on where to open Japanese restaurant in Toronto. Our projects says obviously the best place to open Japanese restaurant is at college and baystreet near University of Toronto. But since that area does not give many choices, Mid south area of Toronto can be considered as well.