

FINDING A LOCALITY TO SET-UP AN INDIAN RESTAURANT

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INTRODUCTION

- BarBeeQ is an Indian chain of restaurants operating in India
- Its restaurant is to be launched in Toronto, Canada
- Defining Parameters of the area:
 - Proximity to Toronto, Etobicoke
 - Low Indian restaurant density
- Stakeholder: Owners of the restaurant chain
- Interest: The solution will impact profits of the business

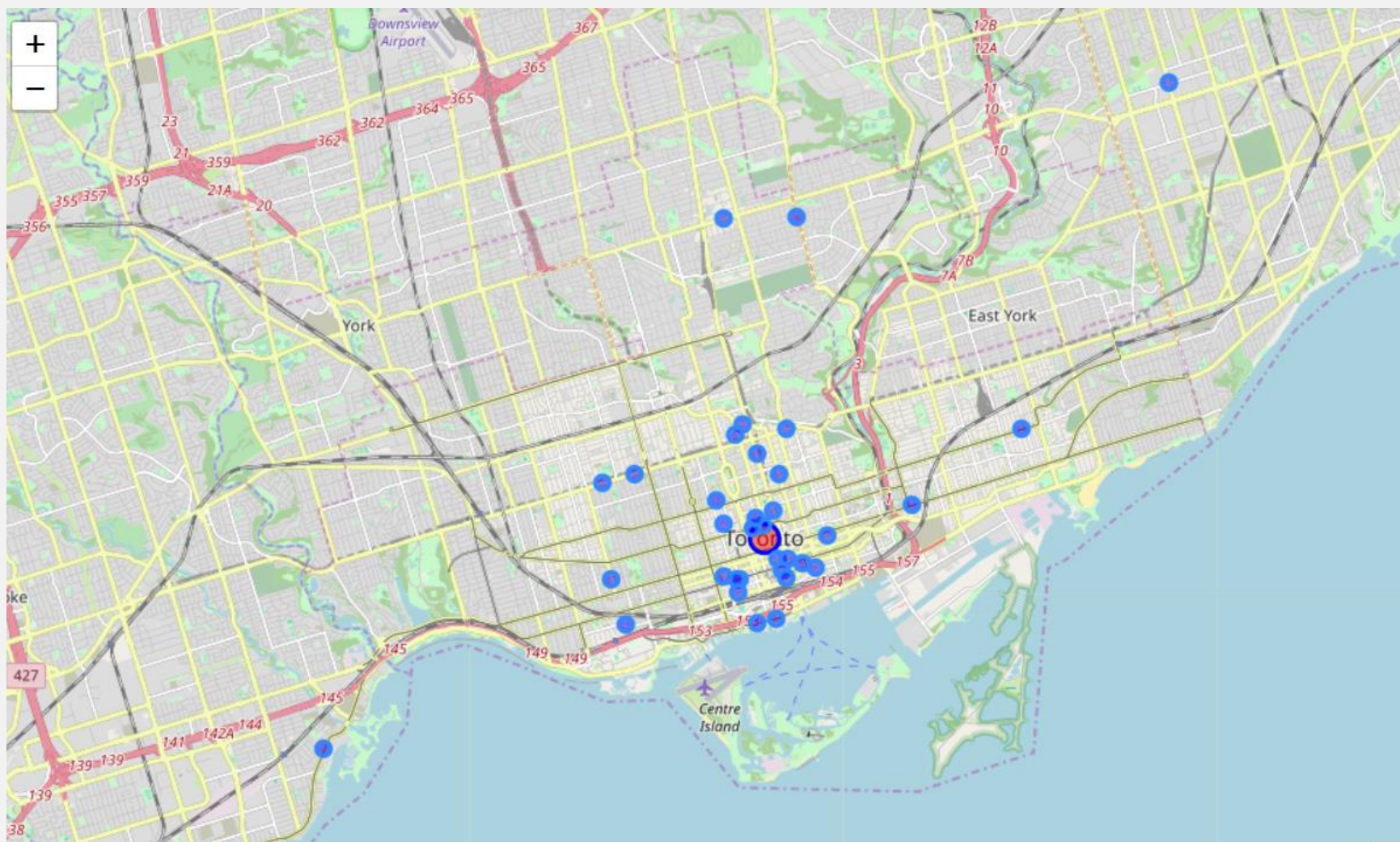
DATA ACQUISITION

- **Variables:**
 - Not more than two restaurants within 300 metre from the locality
 - Not more than one restaurant within 1 km from the locality
 - Distance from Toronto City to the locality < 9 km
 - Distance from Etobicoke to the locality < 9 km
- **Source:**
 - Foursquare API
 - Google Maps API geocoding
 - The data is cleaned to drop unrequired columns
 - The cleaned dataframe has 50 rows and 16 columns

DATA VISUALISATION

- The data is explored by visualising it using folium maps
- It can be seen that the density of Indian restaurants is high towards the North and South of the Toronto City centre
- Whereas, towards the West and East of the city centre it is comparatively lower
- Etobicoke and Brampton lie towards the West of the city centre
- Therefore, a locality towards the West of the city centre can be chosen

INDIAN RESTAURANTS AROUND TORONTO



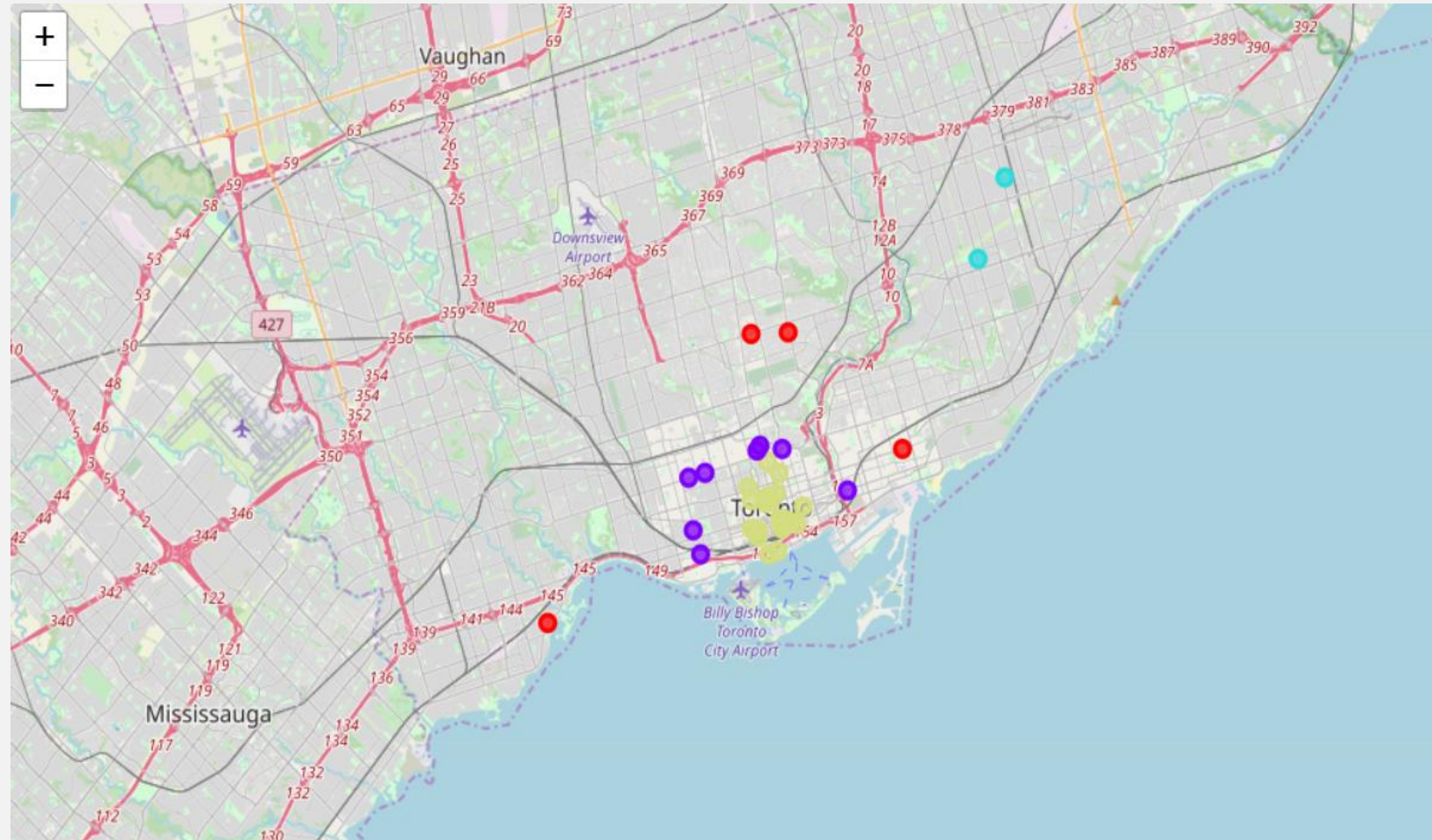
CLUSTERING THE INDIAN RESTAURANTS

- K-means clustering has been used to create clusters
- No of clusters: 4
- It helps to identify the clusters with lower restaurant density
- The dataframe has been modified and parameters with string data type has been replaced by dummies

	distance	lat	lng	Etobicoke	Toronto	0B7	1B5	1B8	1C7	1E2	...	M5E	M5G	M5H	M5J	M5L	M5R	M5S	M5V	M6G	M8V
0	906	43.646463	-79.389644	0	1	0	0	0	0	0	...	0	0	0	0	0	0	0	1	0	0
1	946	43.646394	-79.390418	0	1	0	0	0	0	0	...	0	0	0	0	0	0	0	1	0	0
2	241	43.655649	-79.384119	0	1	0	0	0	0	0	...	0	0	0	0	0	0	0	0	0	0
3	284	43.655120	-79.386645	0	1	0	0	0	1	0	...	0	1	0	0	0	0	0	0	0	0
4	464	43.650050	-79.380662	0	1	0	0	0	0	0	...	0	0	1	0	0	0	0	0	0	0

CLUSTERED INDIAN RESTAURANTS

- It can be seen that in the area between Brampton and Downsview Airport, there is not a single Indian restaurant
- Whereas, a lot of Indians live in Brampton and Etobicoke
- Therefore, a locality towards the North-West of Toronto City will be suitable



EXPLORING THE LOCALITY

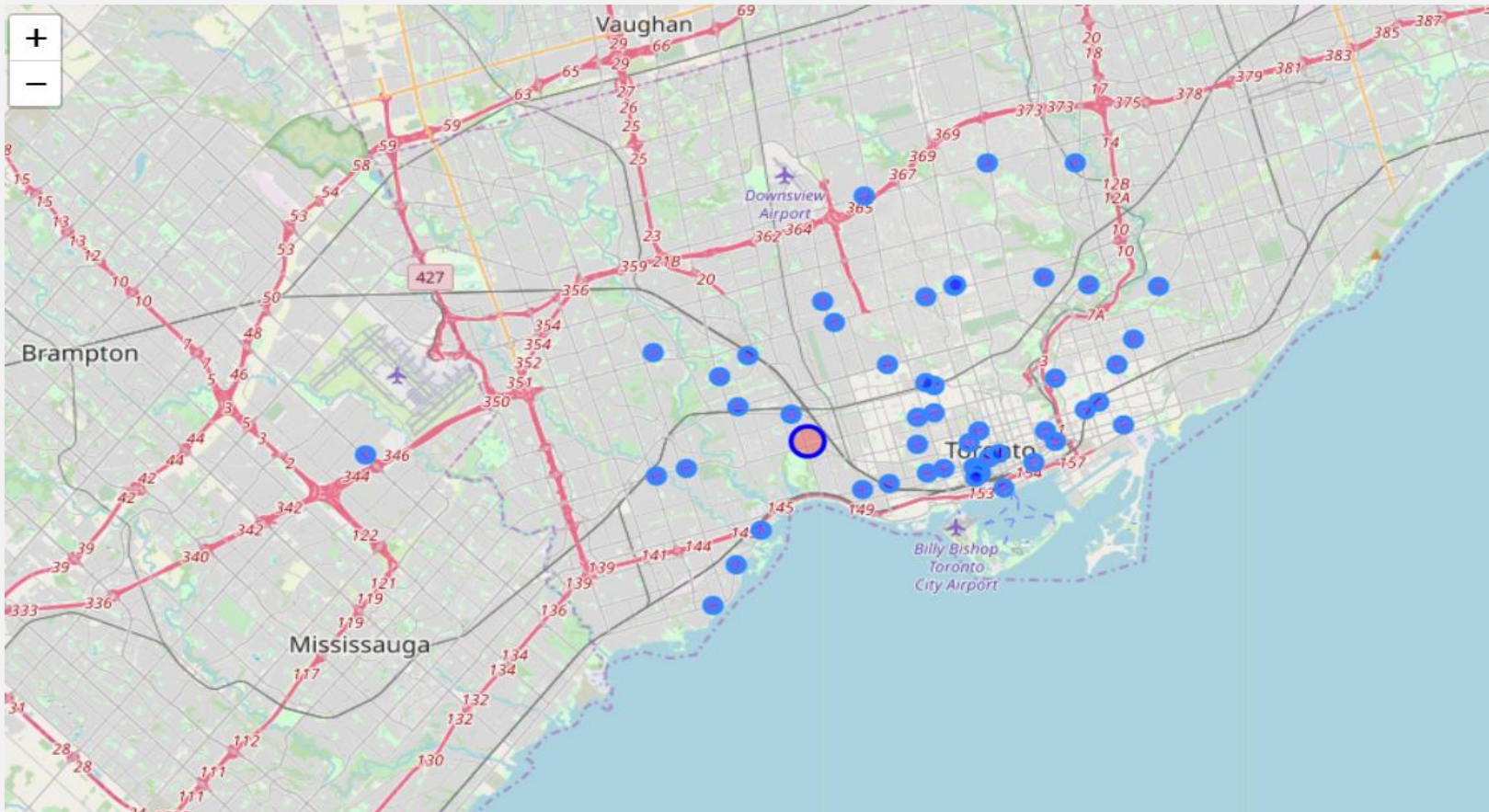
- Indian Grove, a locality towards the West of Toronto city centre, was selected due to the high Indian presence in the locality
- To explore the area its geographical coordinates are obtained using the geopy library
- Then a list of restaurants (all cuisines) within a 20 km radius is obtained from Foursquare API
- .The data is then cleaned and processed and it is plotted on a map

EXPLORING THE LOCALITY

- There are multiple restaurants around Indian Grove
- Therefore, we obtain the list of top 10 nearest restaurants from the locality
- Inferences:
 - There is only one restaurant within 300 metres of Indian Grove and no Indian restaurants within 1 km of it
 - The conditions mentioned above are satisfied

	name	categories	address	lat	lng	labeledLatLngs	distance
5	Subway	Sandwich Place	123 Queen Street West, Suite # C72	43.651194	-79.384234	[{'label': 'display', 'lat': 43.65119366354807...	255
0	Richtree Natural Market Restaurants	Restaurant	14 Queen St W	43.652614	-79.380231	[{'label': 'display', 'lat': 43.65261436174172...	313
2	Valens Restaurants	Restaurant	19 Baldwin Street	43.656096	-79.392839	[{'label': 'display', 'lat': 43.65609618431269...	773
6	Subway	Sandwich Place	101 College St	43.659875	-79.388606	[{'label': 'display', 'lat': 43.65987502486328...	805
1	Imago Restaurants	Restaurant	14 Duncan Street, Suite 203	43.647910	-79.390810	[{'label': 'display', 'lat': 43.64791, 'lng': ...	831
7	Subway	Sandwich Place	200 Wellington St West, Unit 340	43.645951	-79.387824	[{'label': 'display', 'lat': 43.64595052717185...	894
8	Subway	Sandwich Place	287 King St. W	43.646459	-79.389506	[{'label': 'display', 'lat': 43.64645929083939...	901
3	Marigold Indian Bistro Indian Restaurants in...	Fast Food Restaurant	552 Mt Pleasant	43.644302	-79.390002	[{'label': 'display', 'lat': 43.64430171166487...	1132

VISUALISING THE EXPLORED LOCALITY



- A map of Toronto indicating the restaurants around Indian Grove within 20 km radius

MEASURING THE DISTANCE

- Distance between Toronto City and Indian Grove:
 - The distance between Toronto City and Indian Grove is 6.07 km which is lower than 9 km
- The distance between Etobicoke and Indian Grove:
 - The distance comes out to be 8.03 km which is also below 9 km
- Therefore, all the conditions for selecting the locality are satisfied

Note: Distances have been calculated using the location coordinates of the locality

CONCLUSION AND FUTURE SCOPE

- After clustering the Indian restaurants, a location towards the West of Toronto had to be identified
- Various conditions mentioned above were taken into consideration
- It was ensured that they are satisfied
- Thus, the locality: Indian Grove was suggested
- Final decision on optimal restaurant location will be made by stakeholders
- This is not the most optimal locality
- A more optimal locality may exist

THANK YOU!