Finding location for Indian Restaurant

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Introduction

There are many restaurants in Toronto.

A Client wants to open a new Indian restaurant

where it should be situated?

Approach

Data related to Location of Indian Restaurants is collected

Using K means Clustering data is clustered

By visualizing the clusters suitable location for new restaurant can be predicted

DATA COLLECTION

Foursquare API is used to collect data

By making calls to API we can get data related to **longitudes and latitudes** of the Indian restaurants in the area the latitudes and longitudes will be enough to make clusters of the restaurants

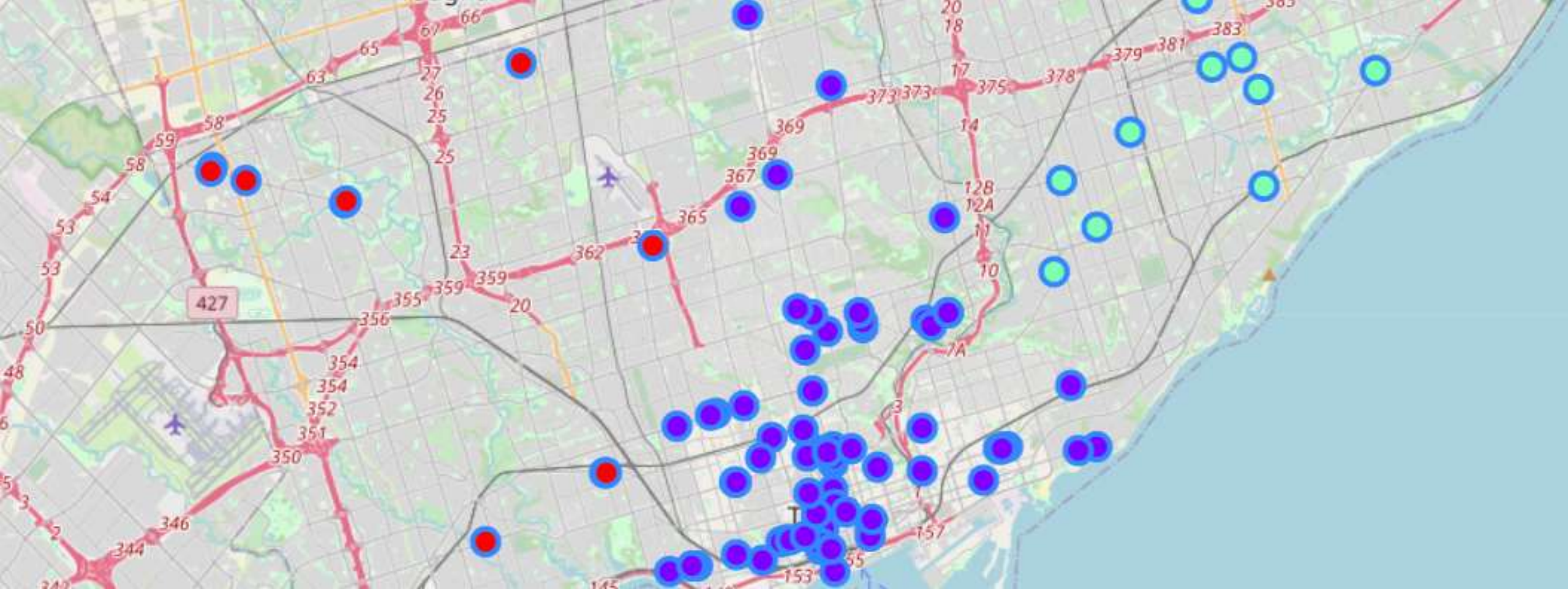|	Name	Address	Latitude	Longitude
0	Pukka Restaurant	778 St Clair Ave West	43.681055	-79.429187
1	Banjara Indian Cuisine	796 Bloor St W	43.662916	-79.421911
2	Udupi Palace	1460 Gerrard St E	43.672480	-79.321275
3	Curry Twist	3034 Dundas St. West	43.665581	-79.470541
4	Marigold Indian Bistro	552 Mount Pleasant Rd.	43.702881	-79.388008

Data Visualization

Map of Toronto plotted with the top 100 Indian restaurants

Cleaning Data

Data is preprocessed only
latitude and longitude
are used for clustering

	Latitude	Longitude
0	43.681055	-79.429187
1	43.662916	-79.421911
2	43.672480	-79.321275
3	43.665581	-79.470541
4	43.702881	-79.388008
5	43.667872	-79.385659
6	43.650319	-79.388998
7	43.703991	-79.374597
8	43.672214	-79.385843
9	43.674618	-79.408249
10	43.667072	-79.369184
11	43.647405	-79.403074
12	43.718823	-79.304350
13	43.671154	-79.390802
14	43.646463	-79.389644
15	43.640718	-79.436259

Clustering Data

Using K-means clustering algorithm the region is clustered into 3 clusters according to the density of restaurant in that region

	Cluster Labels	Name	Address	Latitude	Longitude
0	1	Pukka Restaurant	778 St Clair Ave West	43.681055	-79.429187
1	1	Banjara Indian Cuisine	796 Bloor St W	43.662916	-79.421911
2	1	Udupi Palace	1460 Gerrard St E	43.672480	-79.321275
3	0	Curry Twist	3034 Dundas St. West	43.665581	-79.470541
4	1	Marigold Indian Bistro	552 Mount Pleasant Rd.	43.702881	-79.388008

Plotting Clusters on Map

The clusters are plotted on the map for visualization

Conclusion

The Cluster 1 is the most suitable area for opening new restaurant in Toronto

Using K means clustering we got the best area for opening new restaurant