

Applied Data Science Capstone

Capstone Project - The Battle of Neighborhoods
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1. Problem Statement

Explorerrz is a travel company which arranges travel plans around the world. Currently, it is working towards arranging a tourist visit in Toronto. For a successful travel plan it has to arrange suitable hotels and places to visit nearby.

The company has to prepare an itinerary and self-exploration map for passengers containing a list of hotels, restaurants, cafeterias, and shopping centers.

Target audience: -

Travel companies like Explorerrz

Stakeholders: -

1. Explorerrz
2. Travelers

2. Data Selection

Foursquare location data is used for this project. The data is further grouped by type of landscape such as hotels, restaurants, cafeterias, and shopping centers.

Data item:

Foursquare location data

Type of data:

JSON

Duration:

N/A

Description of data:

Foursquare location data is used to display the areas of interests, which is obtained by Foursquare API calls

Source:

<https://foursquare.com>

3. Methodology

The aim of the project is to find and display areas of interest such as hotels, restaurants, cafeterias, and shopping centers for tourists visiting Toronto.

The script developed in this project does the following:

- Sets the location to Toronto
- Searches hotel using a foursquare search query
- Then it creates a hotel dataframe
- The dataframe is then cleansed
- After this the unnecessary columns and rows are deleted
- Further the rows are deleted that whose category does not belong to hotel
- Finally, the rows are deleted that contains duplicate hotel data

- The same procedure is repeated with restaurants, cafeteria, and shopping centers
- A dataframe is then created consisting of hotels, restaurants, cafeterias, and shopping centers
- A map is generated to visualize hotel neighborhoods including restaurants, cafeterias, and shopping centers

4. Results

Upon running the analysis, the machine learning algorithm list the location of interest and thereby forms an itinerary for tourists visiting Toronto.

Hotel data

	name	categories	address	lat	lng	postalCode	state
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	43.651129	-79.383829	M5H 2M9	ON
3	DoubleTree by Hilton Hotel Toronto Downtown	Hotel	108 Chestnut Street	43.654608	-79.385942	M5G 1R3	ON
4	VFM Test Hotel	Hotel	123 Test Drive	43.658434	-79.387894	M2M 2M2	ON
7	Shangri-La Toronto	Hotel	188 University Ave.	43.649129	-79.386557	M5H 0A3	ON
8	Marriott Downtown at CF Toronto Eaton Centre	Hotel	525 Bay Street	43.654728	-79.382422	M5G 2L2	ON
13	Hilton Toronto	Hotel	145 Richmond St W	43.650143	-79.385488	M5H 2L2	ON

Restaurant data

	name	categories	address	lat	lng	postalCode	state
0	Hemispheres Restaurant & Bistro	American Restaurant	110 Chestnut Street	43.654884	-79.385931	M5G 1R3	ON
1	Azure Restaurant & Bar	Restaurant	225 Frnt St W	43.644749	-79.385113	M5V 2X3	ON
2	Rol San Restaurant 龍笙棧	Dim Sum Restaurant	323 Spadina Ave.	43.654318	-79.398650	M5T 2E9	ON
4	Swatow Restaurant 汕頭小食家	Chinese Restaurant	309 Spadina Ave.	43.653866	-79.398334	M5T 2E6	ON
5	360 Restaurant	Wine Bar	301 Front St W	43.642537	-79.387042	M5V 2T6	ON
6	Goldstone Noodle Restaurant 金石	Noodle House	266 Spadina Ave	43.652278	-79.398039	M5T 2E4	ON
7	Aroma Fine Indian Restaurant	Indian Restaurant	287 King St. W	43.646463	-79.389644	M5V 1J5	ON
8	Green Tea Restaurant Downtown	Chinese Restaurant	261 Spadina Avenue. Upper level	43.652488	-79.397501	M5T 2E3	ON
9	Hong Shing Chinese Restaurant	Chinese Restaurant	195 Dundas St W	43.654925	-79.387089	M5G 1C7	ON
10	New Sky Restaurant 小沙田食家	Chinese Restaurant	353 Spadina Ave.	43.655337	-79.398897	M5T 2G3	ON
11	Victor Restaurant & Bar	Bar	30 Mercer Street	43.645634	-79.391125	M5V 1H3	ON
12	Victoria's Restaurant	Restaurant	37 King Street East	43.649298	-79.376431	M5C 1E9	ON
13	Tasty's Caribbean Restaurant & Catering	Caribbean Restaurant	405 Spadina Ave	43.656794	-79.399251	M5T 2G6	ON
14	The Hot House Restaurant & Bar	American Restaurant	35 Church St	43.648824	-79.373702	M5E 1T3	ON
15	Sassafras Cafe Restaurant Private Events	Event Space	100 Cumberland Street	43.670342	-79.391041	M5R 1A6	ON
18	Richtree Natural Market Restaurants	Restaurant	14 Queen St W	43.652614	-79.380231	M5H 3X4	ON

19	The Lakeview Restaurant	Diner	1132 Dundas St. W	43.649435	-79.420390	M6J 1X2	ON
20	Ka Chi Korean Restaurant	Korean Restaurant	8 St Andrew St.	43.654307	-79.399277	M5T 1K6	ON
21	Matisse Restaurant And Bar	Restaurant	90 Bloor St.	43.670574	-79.384856	M4W 1A7	ON
22	Insomnia Restaurant and Lounge	Restaurant	563 Bloor St West	43.665180	-79.410966	M5S 1Y6	ON
23	Woodlot Restaurant & Bakery	New American Restaurant	293 Palmerston Ave.	43.655765	-79.409929	M6J 2J3	ON
24	Studio Restaurant	Breakfast Spot	389 Church St.	43.661500	-79.379319	M5B	ON
26	The Senator Restaurant	Diner	249 Victoria Street	43.655641	-79.379199	M5B 1T8	ON
27	Kensington Cornerstone Restaurant	Breakfast Spot	2A Kensington Ave.	43.652803	-79.399958	M5T 2J7	ON
28	Cottage Restaurant & Lounge	Thai Restaurant	338 Jarvis St.	43.662770	-79.376894	M4Y 2G6	ON
29	Tundra Restaurant	Restaurant	145 Richmond Street West	43.650010	-79.385608	M5H 2L2	ON

Cafeteria data

	name	categories	address	lat	lng	postalCode	state
1	Stay Cafeteria 慢走	Asian Restaurant	388 Spadina Ave	43.655454	-79.399163	M5T 2G5	ON
3	Cafeteria	Mexican Restaurant	974 College St	43.653419	-79.427678	M6H 1A5	ON
9	De La Salle College Cafeteria	College Cafeteria	131 Farnham Avenue	43.683003	-79.397815	M4V 1H7	ON
17	George Brown College St. James Campus	Community College	51 Dockside Dr	43.644163	-79.366375	M5A 0B6	ON
22	Marketeria	Restaurant	30 Bond St.	43.653585	-79.378843	M5B 1W8	ON
23	The Hub	College Cafeteria	350 Victoria St.	43.658585	-79.380622	M5B 2K3	ON
25	Innis College	Student Center	2 Sussex Ave	43.665556	-79.399298	M5S 1J5	ON
27	One Hour	Chinese Restaurant	435 Spadina Ave.	43.657399	-79.399649	M5T 2T6	ON

Shopping centers

	name	categories	address	lat	lng	postalCode	state
0	Dragon City Shopping Mall 龍城	Shopping Mall	280 Spadina Ave	43.652774	-79.398222	M5T 3A5	ON
1	CF Toronto Eaton Centre	Shopping Mall	220 Yonge St	43.653779	-79.380699	M5B 2H1	ON
2	TD Centre Shopping Concourse	Shopping Mall	66 Wellington St W	43.647184	-79.380932	M5K 1A1	ON

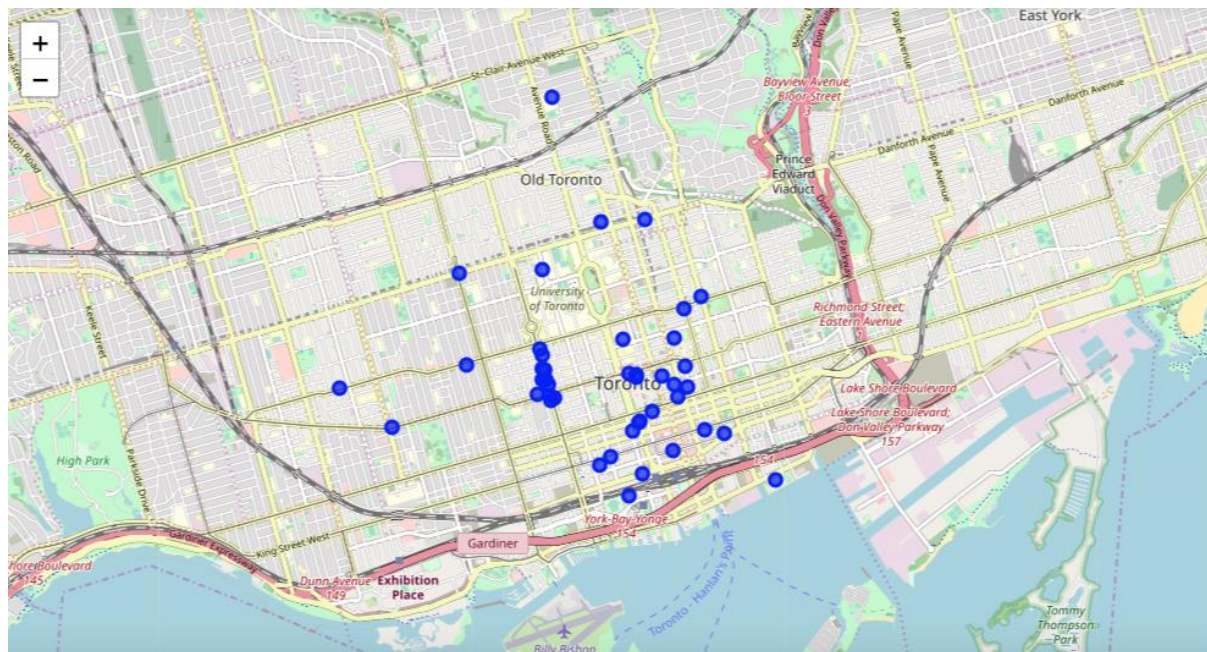
Dataframe consisting hotels, restaurants, cafeterias, and shopping centers

	name	categories	address	lat	lng	postalCode	state
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Map locating the places of interest such as hotels, restaurants, cafeterias, and shopping centers



5. Discussion

The results section enlists all the hotels, restaurants, cafeterias, and shopping centers near Toronto, which would help Explorertz to offer better tourism experience to their customers.

Some probable cases:

- Families travelling to Toronto would be interested in visiting nearby cafeterias, and shopping centers
- Bachelors would be more inclined to visit nearby pubs, and bars
- Tourists would like to explore the nearby restaurants to experience the local specials

6. Conclusion

The finds from the study summarized in the results and discussion section would help business like Explorertz to serve their customers efficiently.