PROGRAM FOR PHOTOGRAPHERS EVENT

INTRODUCTION

- ABC is a company based in Toronto for organizing events, currently it works on a project to organize an event for 7 days for a group of photographers from all over the world. The company has to determine a good program, including a hotel of residence, a hall for meetings, places of landscape to visit, places of shopping, restaurants and cafes. The company has to make a list of places of landscape in Toronto, including the nearest restaurants, cafes, and shopping stores for each place. And it has to provide a map in case the photographer can't use his/her mobile application for any reason.

- ABC company has to perform following task after requiring data to achieve the above tasks

- Search for Hotels

- Search for Parks

- Search for Restaurants

- Search for Cafeteria

- Search Shopping Centers

- Generating map

DATA DESCRIPTION

- The data used in this project is provided by Foursquare location data. The data are grouped by landscape area, and each area included the information about this area and all information about restaurants, cafes, and stores which in this area. The data will be in json file therefore we need json package to download data and then convert it into dataframe.

DATA CLEANING

- As the data have large number of columns, therefore we need to perform data cleaning, Removing all columns that we don't need and only keeping those columns that include venue name, and anything that is associated with location. Let's consider first part of project ''Search for hotels''. I will show here data cleaning for this portion only.

BEFORE CLEANING


```
dataframe.head()
```

	id	name	categories	referralId	hasPerk	location.address	location.crossStreet	location.lat	location.lng	location.labeledLatLngs	location.distance
0	4ab2d511f964a5209b6c20e3	Sheraton Centre Toronto Hotel	[{'id': '4bf58dd8d48988d1fa931735', 'name': 'H...	v-1574475889	False	123 Queen Street West	at York St.	43.651144	-79.384329	[{'label': 'display', 'lat': 43.6511441, 'lng'...	390
1	4b68aed1f964a520de862be3	The Rex Hotel Jazz & Blues Bar	[{'id': '4bf58dd8d48988d1e7931735', 'name': 'J...	v-1574475889	False	194 Queen St W	Queen & St. Patrick	43.650505	-79.388577	[{'label': 'display', 'lat': 43.65050475544005...	400
2	52ce14b0498e50457ce11780	DoubleTree by Hilton Hotel Toronto Downtown	[{'id': '4bf58dd8d48988d1fa931735', 'name': 'H...	v-1574475889	False	108 Chestnut Street	Dundas St W	43.654608	-79.385942	[{'label': 'display', 'lat': 43.6546083, 'lng'...	124
3	4f343a31e4b0230a3b337a90	VFM Test Hotel	[{'id': '4bf58dd8d48988d1fa931735', 'name': 'H...	v-1574475889	False	123 Test Drive	at somewhere St	43.658434	-79.387894	[{'label': 'display', 'lat': 43.658434, 'lng':...	500
4	5545d07e498e2facac03f666	Sheraton Centre Toronto Hotel - Grand Ballroom	[{'id': '56aa371be4b08b9a8d5734cf', 'name': 'B...	v-1574475889	False	123 Queen Street West	at Bay Street	43.651200	-79.384520	[{'label': 'display', 'lat': 43.65119976208405...	376

AFTER CLEANING

	name	categories	address	crossStreet	lat	lng	labeledLatLngs	distance	postalCode	cc	city	state	country	formattedAddress	neighborhood	
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	at York St.	43.651144	-79.384329	[{'label': 'display', 'lat': 43.6511441, 'lng'...	390	M5H 2M9	CA	Toronto	ON	Canada	[123 Queen Street West (at York St.), Toronto ...	NaN	4ab2d511f964a5209b
1	The Rex Hotel Jazz & Blues Bar	Jazz Club	194 Queen St W	Queen & St. Patrick	43.650505	-79.388577	[{'label': 'display', 'lat': 43.65050475544005...	400	M5V 1Z1	CA	Toronto	ON	Canada	[194 Queen St W (Queen & St. Patrick), Toronto...	NaN	4b68aed1f964a520de
2	DoubleTree by Hilton Hotel Toronto Downtown	Hotel	108 Chestnut Street	Dundas St W	43.654608	-79.385942	[{'label': 'display', 'lat': 43.6546083, 'lng'...	124	M5G 1R3	CA	Toronto	ON	Canada	[108 Chestnut Street (Dundas St W), Toronto ON ...	NaN	52ce14b0498e50457c
3	VFM Test Hotel	Hotel	123 Test Drive	at somewhere St	43.658434	-79.387894	[{'label': 'display', 'lat': 43.658434, 'lng':...	500	M2M 2M2	CA	Toronto	ON	Canada	[123 Test Drive (at somewhere St), Toronto ON ...	NaN	4f343a31e4b0230a3b
4	Sheraton Centre Toronto Hotel - Grand Ballroom	Ballroom	123 Queen Street West	at Bay Street	43.651200	-79.384520	[{'label': 'display', 'lat': 43.65119976208405...	376	NaN	CA	Toronto	ON	Canada	[123 Queen Street West (at Bay Street), Toront...	Financial District	5545d07e498e2faca

AFRER REMOVING UNNECESSORY COLUMNS

	name	categories	address	lat	lng	postalCode	state
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	43.651144	-79.384329	M5H 2M9	ON
1	The Rex Hotel Jazz & Blues Bar	Jazz Club	194 Queen St W	43.650505	-79.388577	M5V 1Z1	ON
2	DoubleTree by Hilton Hotel Toronto Downtown	Hotel	108 Chestnut Street	43.654608	-79.385942	M5G 1R3	ON
3	VFM Test Hotel	Hotel	123 Test Drive	43.658434	-79.387894	M2M 2M2	ON
4	Sheraton Centre Toronto Hotel - Grand Ballroom	Ballroom	123 Queen Street West	43.651200	-79.384520	NaN	ON
5	Stathcona Hotel	Hotel	NaN	43.654947	-79.386359	NaN	ON
6	hilton hotel, richmondstreet E, 145, toronto	Hotel Pool	Richmondstreet E, 145	43.650625	-79.385488	NaN	ON
7	Sheraton Centre Hotel Club Lounge	Lounge	NaN	43.651063	-79.384527	M5H 2M9	ON
8	650 Hotel	Hotel	650 Bay Street	43.657046	-79.384411	NaN	ON
9	Be SixFifty Hotel	Hotel	650 Bay Street	43.657120	-79.384560	NaN	ON
10	Shangri-La Toronto	Hotel	188 University Ave.	43.649129	-79.386557	M5H 0A3	ON
11	Marriott Downtown at CF Toronto Eaton Centre	Hotel	525 Bay Street	43.654728	-79.382422	M5G 2L2	ON
12	Hilton Toronto	Hotel	145 Richmond St W	43.649946	-79.385479	M5H 2L2	ON
13	89 Chestnut Residence	College Residence Hall	89 Chestnut St.	43.654160	-79.385291	M5G 1R1	ON
14	Op mijn hotelkamer In Toronto	Hotel	NaN	43.654235	-79.386208	NaN	ON

DELETING ROWS WITH NONE VALUE

clean_dataframe5

[10]:

	name	categories	address	lat	lng	postalCode	state
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	43.651144	-79.384329	M5H 2M9	ON
1	The Rex Hotel Jazz & Blues Bar	Jazz Club	194 Queen St W	43.650505	-79.388577	M5V 1Z1	ON
2	DoubleTree by Hilton Hotel Toronto Downtown	Hotel	108 Chestnut Street	43.654608	-79.385942	M5G 1R3	ON
3	VFM Test Hotel	Hotel	123 Test Drive	43.658434	-79.387894	M2M 2M2	ON
10	Shangri-La Toronto	Hotel	188 University Ave.	43.649129	-79.386557	M5H 0A3	ON
11	Marriott Downtown at CF Toronto Eaton Centre	Hotel	525 Bay Street	43.654728	-79.382422	M5G 2L2	ON
12	Hilton Toronto	Hotel	145 Richmond St W	43.649946	-79.385479	M5H 2L2	ON
13	89 Chestnut Residence	College Residence Hall	89 Chestnut St.	43.654160	-79.385291	M5G 1R1	ON
15	Lobby Lounge at the Shangri-La Toronto	Lounge	188 University Ave.	43.649155	-79.386546	M5H 0A3	ON
16	Fitness Centre	Gym	525 Bay St.	43.654690	-79.381739	M5G 2L2	ON
17	Grand Ballroom	Event Space	123 Queen St. W	43.651217	-79.383771	M5H 2M9	ON
19	Kumar For Men	Men's Store	Sheraton Centre	43.651044	-79.383302	M5H 2M9	ON
20	Bistro on Two	Breakfast Spot	123 Queen St. W	43.651011	-79.383658	M5H 2M9	ON
21	Fitness Centre	Gym	Sheraton Centre	43.650985	-79.384002	M5H 2M9	ON

DELETING ROWS WHOSE CATEGORY IS NOT HOTEL OR EVENT SPACE

[11]:

	name	categories	address	lat	lng	postalCode	state
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	43.651144	-79.384329	M5H 2M9	ON
2	DoubleTree by Hilton Hotel Toronto Downtown	Hotel	108 Chestnut Street	43.654608	-79.385942	M5G 1R3	ON
3	VFM Test Hotel	Hotel	123 Test Drive	43.658434	-79.387894	M2M 2M2	ON
10	Shangri-La Toronto	Hotel	188 University Ave.	43.649129	-79.386557	M5H 0A3	ON
11	Marriott Downtown at CF Toronto Eaton Centre	Hotel	525 Bay Street	43.654728	-79.382422	M5G 2L2	ON
12	Hilton Toronto	Hotel	145 Richmond St W	43.649946	-79.385479	M5H 2L2	ON

DELETING ROWS WHICH HAS DUPLICATE HOTEL'S NAME

[12]:

	name	categories	address	lat	lng	postalCode	state
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	43.651144	-79.384329	M5H 2M9	ON
2	DoubleTree by Hilton Hotel Toronto Downtown	Hotel	108 Chestnut Street	43.654608	-79.385942	M5G 1R3	ON
3	VFM Test Hotel	Hotel	123 Test Drive	43.658434	-79.387894	M2M 2M2	ON
10	Shangri-La Toronto	Hotel	188 University Ave.	43.649129	-79.386557	M5H 0A3	ON
11	Marriott Downtown at CF Toronto Eaton Centre	Hotel	525 Bay Street	43.654728	-79.382422	M5G 2L2	ON
12	Hilton Toronto	Hotel	145 Richmond St W	43.649946	-79.385479	M5H 2L2	ON
17		Event	123 Q... St W	43.651317	-79.393771	M5H 2M9	ON

CHOOSING HOTEL WHICH HAVE SAME POSTAL CODE AS EVENT SPACE

[13]:

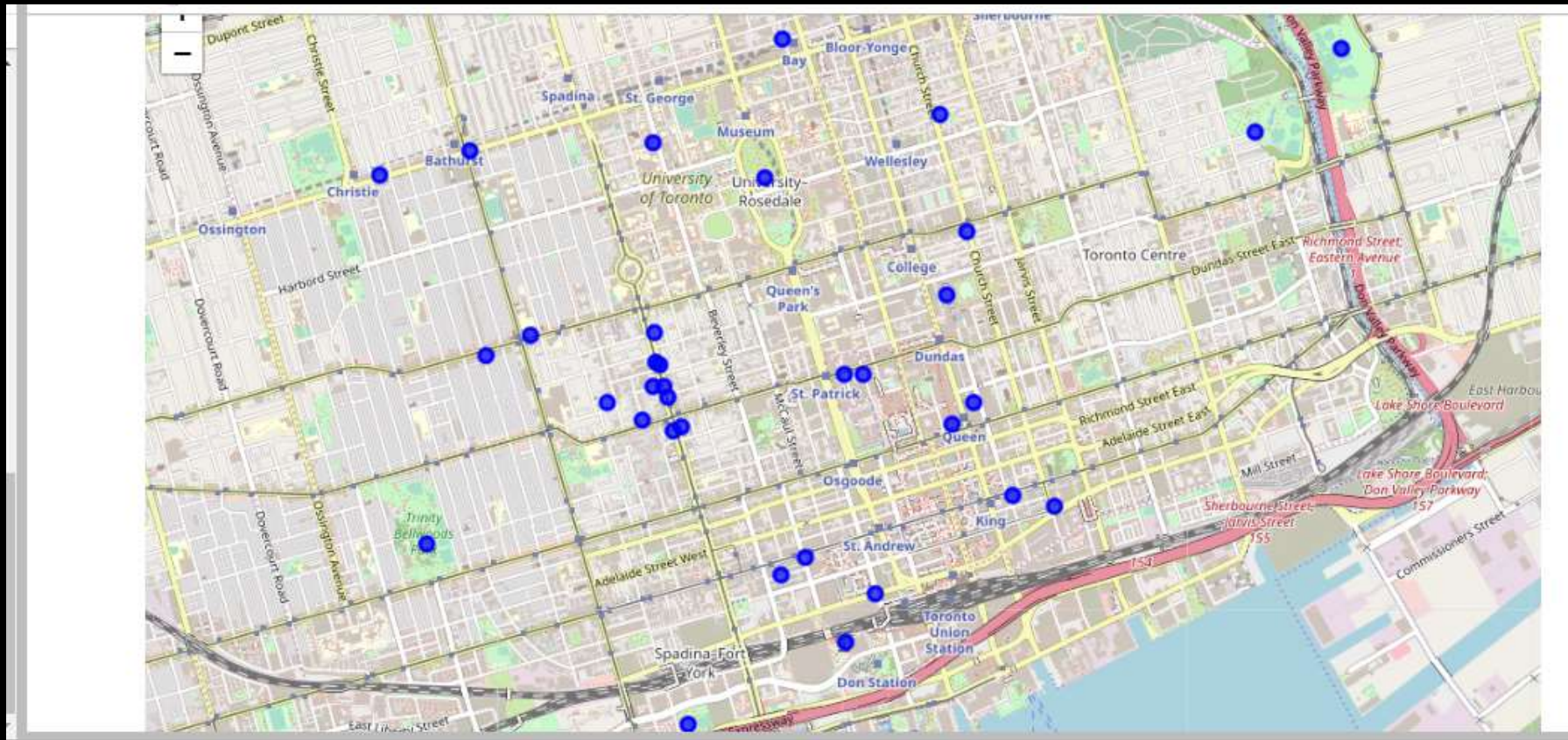|	name	categories	address	lat	lng	postalCode	state
0	Sheraton Centre Toronto Hotel	Hotel	123 Queen Street West	43.651144	-79.384329	M5H 2M9	ON
17	Grand Ballroom	Event Space	123 Queen St. W	43.651217	-79.383771	M5H 2M9	ON

RESULTS

- Now the dataframe is in proper format and the final step is to visualize all these data and cluster them so that it may be useful for the photographers. For visualization we have used Python Library named as Folium, which is very powerful library. We have also divided the visualization process into two steps.

VISUALIZATION OF HOTELS, SHOPPING STORES AND CAFETERIAS

VISUALIZATION OF PARKS, RESTAURANTS, AND CAFETERIAS

CONCLSUION

- The above visualization proves more helpful for photographers' event even if they can't contact any hotel by contact number.