RESTAURANT FINDER AND RECOMMENDER

Applied DataScience Capstone Project

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INTRODUCTION

- People in cities face difficulty in finding a restaurant of their choice within their locality due to very high number of restaurants in the city.

- Using this restaurant finder people can find a restaurant according to
  - Cuisine that they want to try for the day
  - Find one near to them
  - Find rating for that restaurant

- Will be of immense use to food lovers who take lot of pain in roaming around the city to find a restaurant of their choice of food and taste.

DATA USED TO SOLVE THE PROBLEM

- The Foursquare API is the primary source of data for this project.
- Foursquare API is used to find the list of locations within a radius range along with their lalitude,longitude,category and also filter data according to their category in this case, namely food.
- Example:

{'id': '5b9e10ae1ffe97002cc752a7',

'name': 'Starbucks',

'location': {'address': 'Gopathi Narayanaswami Chetty Road, T Nagar',

'crossStreet': 'Gronud Floor, PMG Complex',

'labeledLatLngs': [{'label': 'display',

'lat': 13.041685,

'lng': 80.23458}],

'distance': 6965…

METHODOLOGY

- Filter out all the restaurants in their city which are within the given distance range specified by the user

- Find out the cuisine that the user wants to try from the list of cuisines that are available within the city.

- Find out all restaurants within the distance range which have cuisine specified by the user

- Find out the ratings, price tier,distance of those restaurants filtered out in the previous step by using venueid

- Recommend the places to the user according to their rating and their distance .

RESULTS

User enters their location

Enter the location:Velachery
The geograpical coordinate of the City of Velachery are 12.98016545, 80.2228505622558.

User enters the distance range and Foursquare API is used to get the places within the distance range

```
radius=input('Enter the distance within which you prefer to find a restaurant in metres')
LIMIT=100
url = 'https://api.foursquare.com/v2/venues/search?categoryId=4d4b7105d754a06374d81259&client_id={}&client_secret={}&v={}&ll={},{}&radius={}&limit={}'.format(
    CLIENT_ID,
    CLIENT_SECRET,
    VERSION,
    latitude,
    longitude,
    radius,
    LIMIT
)
```

Foursquare API returns response in JSON format containing list of restaurants within the required distance

Enter the distance within which you prefer to find a restaurant in metres7000

{'meta': {'code': 200, 'requestId': '5d98330dbcbf7a00395932ff'},
 'response': {'venues': [{'id': '531f0ea9498e4d4369274e16',
    'name': 'Haagen Dazs, Phoenix Market City',
    'location': {'address': 'Ground Floor, Phoenix Market City',
     'crossStreet': 'Velacherry Main Road',
     'lat': 12.992135690803618,

	name	id	categories	distance	lat	lng
0	Haagen Dazs, Phoenix Market City	531f0ea9498e4d4369274e16	Ice Cream Shop	1474	12.992136	80.217034
1	Adyar Ananda Bhavan	5d91e896d47a7c000885ef75	Restaurant	3351	13.008609	80.212720
2	Starbucks	5b9e10ae1ffe97002cc752a7	Coffee Shop	6965	13.041685	80.234580
3	Starbucks	55f99e33498e4ddd66a2210e	Coffee Shop	6135	13.029225	80.248628
4	Hotel Saravana Bhavan	4c6ba1d669b4ef3b01ec454e	South Indian Restaurant	7922	13.050776	80.213741
5	Paradise	5783684a498ee3d0fefe4701	Indian Restaurant	3059	12.972837	80.250035

Cuisines/categories of restaurants present within the distance range

```
The categories of restaurants present in the area are listed below
Asian Restaurant
BBQ Joint
Bakery
Café
Chettinad Restaurant
Coffee Shop
Dessert Shop
Donut Shop
Hotel
Ice Cream Shop
Indian Restaurant
Japanese Restaurant
Juice Bar
Modern European Restaurant
Office
Pet Café
Restaurant
Seafood Restaurant
Snack Place
South Indian Restaurant
Vegetarian / Vegan Restaurant
```

Enter the cuisine/category of restaurant that you prefer to goIndian Restaurant

Restaurants according to user's choice are listed depending upon the ratings and distance which is obtained through another Foursquare API call

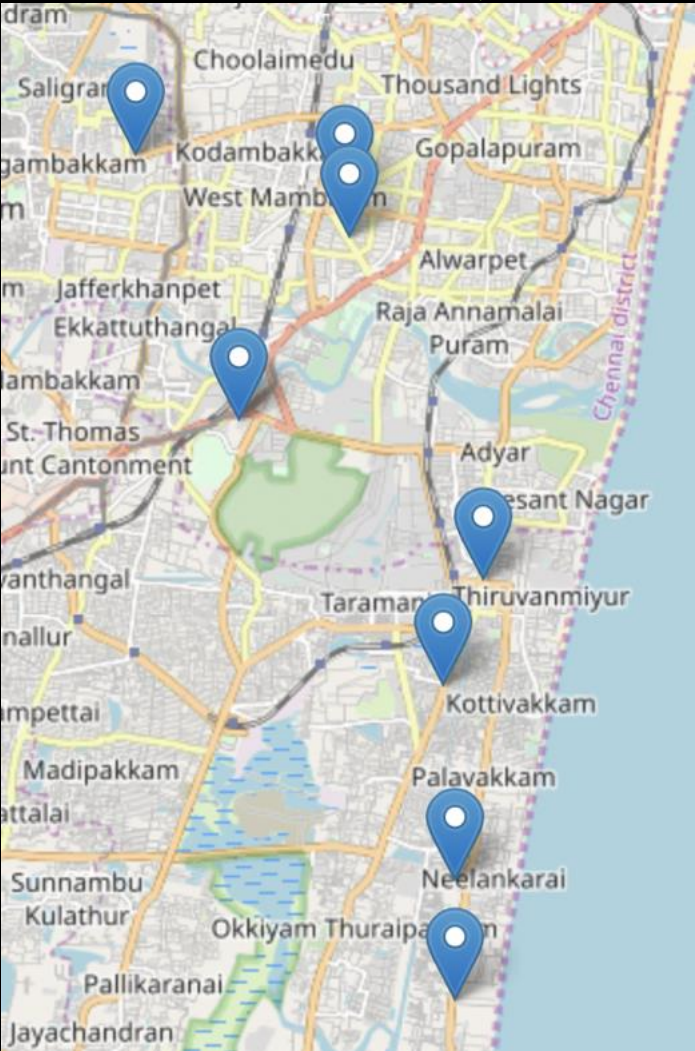## Restaurants for the selected cuisine sorted by customer ratings

restaurant_info.sort_values('Rating',ascending=False)

	Name	Category	Price_Tier	Rating	Distance	Latitude	Longitude
1	Peshawri	Indian Restaurant	2	8.7	3392	13.0105	80.2203
3	Murugan Idli Shop	Indian Restaurant	2	8	7071	13.0425	80.2355
0	Paradise	Indian Restaurant	2	7.9	3059	12.9728	80.25
5	Food village	Indian Restaurant	2	7.7	6617	12.9279	80.2518
7	Murugan Idli Shop	Indian Restaurant	2	7.5	7831	13.0483	80.205
2	Saravana Bhavan	Indian Restaurant	2	7.4	6436	13.0365	80.2362
4	Namma Veedu Vasantha Bhavan	Indian Restaurant	2	5.3	5008	12.945	80.2517
6	Hotel City Gate	Indian Restaurant	2	5.1	3662	12.9879	80.2557

Restaurants for the selected cuisine sorted by Distance

restaurant_info.sort_values('Distance')

	Name	Category	Price_Tier	Rating	Distance	Latitude	Longitude
0	Paradise	Indian Restaurant	2	7.9	3059	12.9728	80.25
1	Peshawri	Indian Restaurant	2	8.7	3392	13.0105	80.2203
6	Hotel City Gate	Indian Restaurant	2	5.1	3662	12.9879	80.2557
4	Namma Veedu Vasantha Bhavan	Indian Restaurant	2	5.3	5008	12.945	80.2517
2	Saravana Bhavan	Indian Restaurant	2	7.4	6436	13.0365	80.2362
5	Food village	Indian Restaurant	2	7.7	6617	12.9279	80.2518
3	Murugan Idli Shop	Indian Restaurant	2	8	7071	13.0425	80.2355
7	Murugan Idli Shop	Indian Restaurant	2	7.5	7831	13.0483	80.205

Listed places shown on map

CONCLUSION

- The project finally delivers a list of restaurants according to
  - People choice of cuisine
  - Within the given distance range
  - Price tier
  - Rating

  which makes the entire process of dine out simple and easy with minimizing time and efforts to search for a restaurant and maximise the time spent with our loved ones.