RESTAURANT FINDER AND RECOMMENDER

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 a cuisine that they want to try for the day and also find one near to them, find rating for that restaurant and happily dine in and enjoy the food rather than regretting for their decision. Hence this 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. Now all it takes to find a restaurant is enter the city that you are at ,enter the cuisine that you want to try that will give people a range of restaurants that are highly rated for the cuisine and a range of restaurants near to them along with their price range.

DATA:

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.It returns the places in json format as below:

```
{'id': '5b9e10ae1ffe97002cc752a7',
 'name': 'Starbucks',
 'location': {'address': 'Gopathi Narayanaswami Chetty Road, T Nagar',
  'crossStreet': 'Gronud Floor, PMG Complex',
  'lat': 13.041685,
  'lng': 80.23458,
  'labeledLatLngs': [{'label': 'display',
    'lat': 13.041685,
    'lng': 80.23458}],
  'distance': 6965,
  'postalCode': '600017',
  'cc': 'IN',
  'neighborhood': 'Thyagaraya Nagar',
  'city': 'Chennai',
  'state': 'Tamil Nadu',
  'country': 'India',
```

'formattedAddress': ['Gopathi Narayanaswami Chetty Road, T Nagar (Gronu d Floor, PMG Complex)',
    'Chennai 600017',
    'Tamil Nadu',
    'India']},
  'categories': [{'id': '4bf58dd8d48988d1e0931735',
    'name': 'Coffee Shop',
    'pluralName': 'Coffee Shops',
    'shortName': 'Coffee Shop',
    'icon': {'prefix': 'https://ss3.4sqi.net/img/categories_v2/food/coffeeshop_',
     'suffix': '.png'},
    'primary': True}],
  'referralId': 'v-1570190757',
  'hasPerk': False}

The list of restaurants for the give cuisine can be filtered and their venueid is filtered and used to extract further details about the place such as their ratings,price range and number of likes and users who liked them .Filtering out details such as ratings and price tier is used to solve the problem.

METHODOLOGY:

Inorder to solve the problem , we get a number of inputs from the user such as the city they are in and the distance within which they want to search for the restaurant and their choice of cuisine. The following steps are done :
1.Filter out all the restaurants in their city which are within the given distance range specified by the user
2.Find out the cuisine that the user wants to try from the list of cuisines that are available within the city.
3.Find out all restaurants within the distance range which have cuisine specified by the user
4.Find out the ratings, price tier,distance of those restaurants filtered out in step 3 by using venueid
5.Recommend the places to the user according to their rating and their distance .

RESULTS:

The final result is to decide and find out a restaurant of their choice within the given distance from an entire range of restaurants in the city.

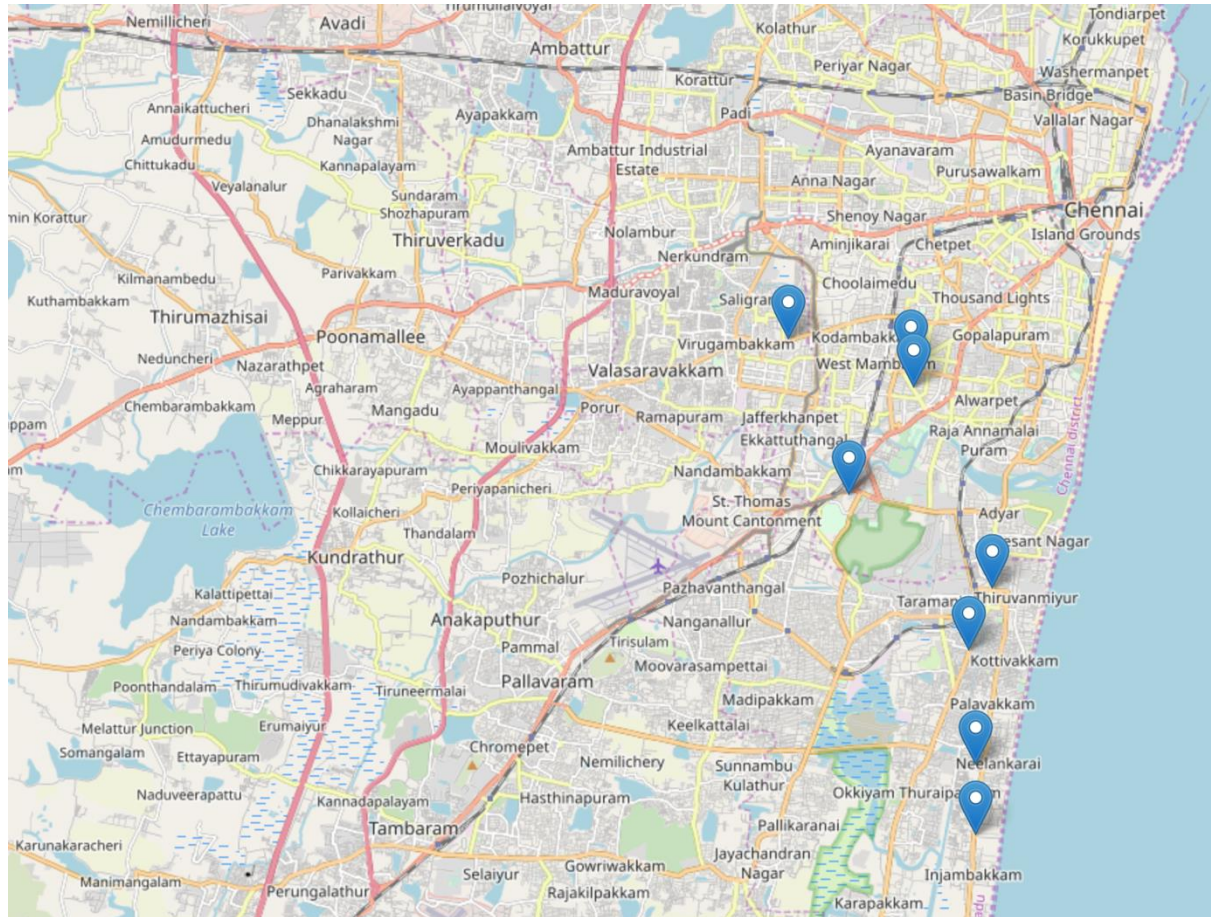## Restaurants for the selected cuisine sorted by customer ratings

```
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

DISCUSSION:

Different distance measures yields different number of restaurants and hence it is better to widen the distance to explore maximum restaurants available in the city.

CONCLUSION:

This project finally delivers a list of restaurants according to people choice of cuisine and within the given distance range along with their price tier and 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.