

# **RESTAURANTS AND CAFÉ'S IN CHICAGO: - OPTION OF NEW BUSINESS.....**

## **Introduction**

In Illinois, the city of Chicago has well branded restaurants and know for its quality.

In this project, we look at the restaurants available in the city of Chicago. Here, we are going to explore, segment and cluster the restaurants in the city of Chicago. The data is analysed to see the different restaurants available in the particular place and where we would recommend one to open a restaurant if they are trying to start their own business of opening a restaurant.

## **Description of Data – used to Solve the Problem and Source of the Data**

We will need data to identify the locations and its near by restaurants.

1. The data with the DBA Name , AKA Name and its location is available for our usage in this project
2. Foursquare API to explore venue types surrounding each location. For this project, we are going to explore 3 locations, Chicago, Naperville, Gundy.
3. We will be querying the names of the restaurants in each location and identify the location in the map.

## **Methodology**

- Foursquare API to locate the restaurants in different location of Chicago.

- Classify the restaurant in each location, atleast for one location, say Chicago.
- Analyse the total number of restaurant in each location.
- Decide the places for new business.

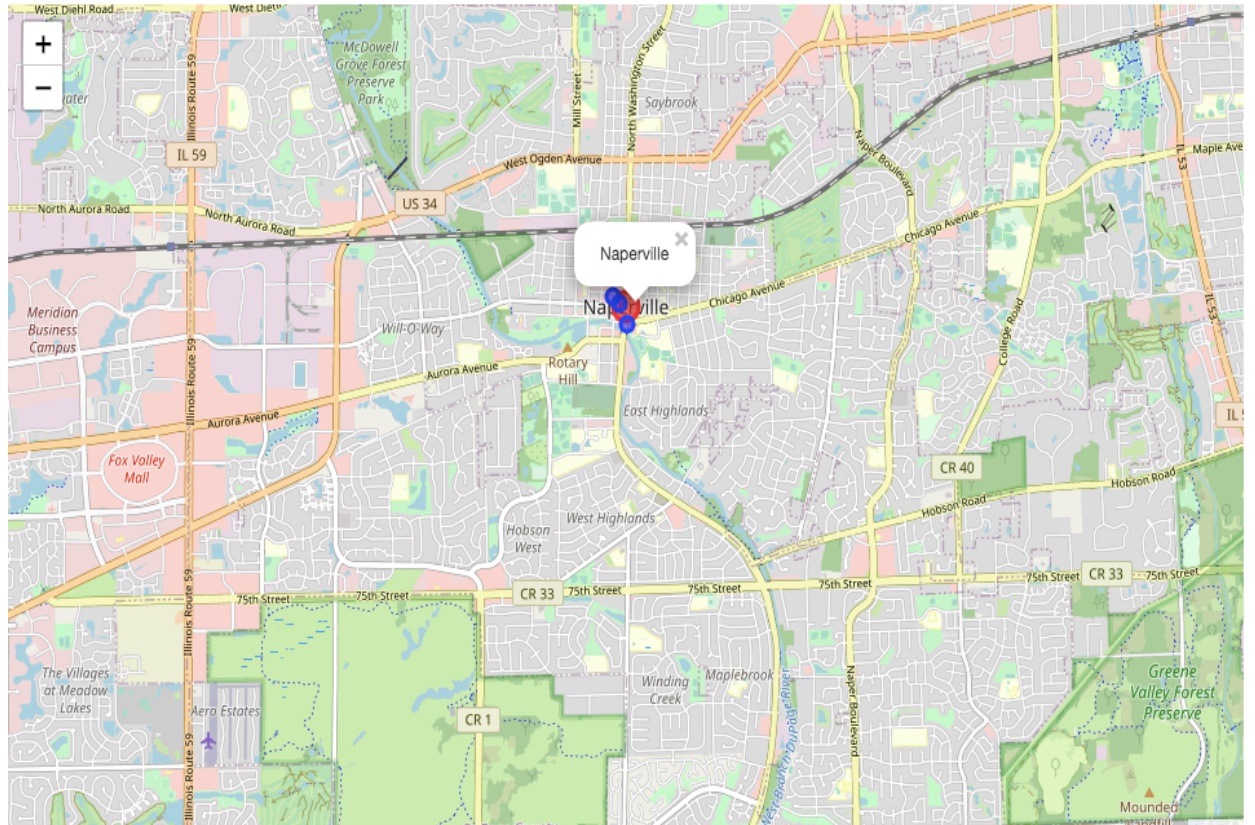
## Results

*i. Foursquare API to locate the restaurants in different location of Chicago:* Here, the restaurants in Chicago are found using the Foursquare API Search Function. So, the dataframe `df_chicago_filtered` gives the details of restaurants in Chicago. The names are listed below:

```
0      Chicago Curry House Indian Restaurant
1      Gazebo Restaurant at Grant Park
2      Lord Gore Restaurant
3      Exchequer Restaurant & Pub
4      Opus Restaurant & Café
5      Luna Cafe Restaurant
6      Plymouth Restaurant & Bar
7      The Alsdorf Galleries Of Indian, Southeast Asi...
8      Lockwood Restaurant and Bar
9      Himalayan Restaurant
10     The Berghoff Restaurant
11     Gino's East
12     Sofi Restaurant
13     McKinlock Court Restaurant
14     Amarit Thai Restaurant
15     Miller's Pub
16     Plymouth Street
17     G & G Restaurant
18     Rawabi Grill Mediterranean Restaurant
19     HALO' Restaurant – Chicago
20     Dearborn Dentistry
21     Subway
22     Middle Eastern Restaurants
23     S.R.O. – Standing Room Only
24     La Cocina Mexican Grill
Name: name, dtype: object
```

Similarly, the restaurants in the “Naperville” city are identified, the venues of those are identified in the map shown below.

	name	categories	address	crossStreet	lat	lng	labeledLatLngs	distance	postalCode	cc	neighborhood	city	st
0	Ikkai Japanese Restaurant	Japanese Restaurant	109 S Main St	W Van Buren Ave	41.773804	-88.149704	[{'label': 'display', 'lat': 41.773804, 'lng': '....	180	60540	US	Downtown Naperville	Naperville	
1	Francesca's Collections	Boutique	25 W Jefferson Ave	Between Main & Washington	41.773067	-88.148803	[{'label': 'display', 'lat': 41.773067, 'lng': '....	75	60540	US	NaN	Naperville	
2	Rosebud Italian Specialties & Pizzeria	Italian Restaurant	22 E Chicago Ave	at Washington St	41.771353	-88.147840	[{'label': 'display', 'lat': 41.771353, 'lng': '....	168	60540	US	NaN	Naperville	



## ii. Classify the restaurant in each location:

Analyse the total Number of Restaurant in Chicago Location as per the category /type of the restaurant.

	name	address	lat	lng	labeledLatLngs	distance	postalCode	cc	city	state	country	formattedAddress	crossStreet	neighborhood
categories														
American Restaurant	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Asian Restaurant	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Bar	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Café	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dentist's Office	1	1	1	1	1	1	1	1	1	1	1	1	1	1
German Restaurant	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Indian Restaurant	2	2	2	2	2	2	2	2	2	2	2	2	2	1
Italian Restaurant	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Mediterranean Restaurant	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Mexican Restaurant	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Middle Eastern Restaurant	1	1	1	1	1	1	1	1	1	1	1	1	1	0
New American Restaurant	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pizza Place	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pub	2	2	2	2	2	2	2	2	2	2	2	2	2	1

### iii. Analyse the total number of restaurant in each location:

Here, the restaurant in each location of Chicago is classified and the table showing data.

	name	categories	address	lat	lng	labeledLatLngs	distance	cc	city	state	country	formattedAddress	crossStreet	neighborhood
postalCode														
60603	8	8	8	8	8	8	8	8	8	8	8	8	5	2
60604	4	4	4	4	4	4	4	4	4	4	4	4	2	0
60605	10	10	10	10	10	10	10	10	10	10	10	10	7	0
60611	1	1	1	1	1	1	1	1	1	1	1	1	0	0

```
print('There details of restaurant in {} locations.'.format(len(df_chicago_filtered['postalCode'].unique())))
```

There details of restaurant in 5 locations.

## Discussion

With the help of the available data, this problem identifies different types of data. This is been interpreted and analysed to shows that the restaurants available in various postal codes of Chicago are given in the result. With that, the postal code , 60611 has 1 category of restaurant. So, this is the best place to start a new business of opening a restaurant with my research using available data.

## Conclusion

To conclude, the restaurants available in Chicago area are identified with its venue location using API foursquare and the data has been interpreted and analysed for

various categories of restaurants and number of restaurants in with its postal code. In future, more research on data collection will be done and the same will be classified using any classification algorithms.