

Capstone Project - The Battle of Neighbourhoods

June 27, 2020

1 Capstone Project— The Battle of Neighbourhoods

1.0.1 Introduction

New Delhi is the capital city of India. It is a part of the city of Delhi's 11 districts. The city itself has a population of 257,803. However, the much larger metro area has a population that exceeds 26 million.

New Delhi are used interchangeably to refer to the National Capital Territory of Delhi (NCT), these are two distinct entities, with New Delhi forming a small part of Delhi. The National Capital Region is a much larger entity comprising the entire NCT along with adjoining districts in neighboring states.

The official language of New Delhi and the one that is most widely spoken is Hindi. However, Over last decades it is continuously grow because of the city's important role in government and With it's diverse culture , comes diverse food items. There are many restaurants in New Delhi City, each belonging to different categories like Chinese , Italian , French etc. So as part of this project , we will list and visualise all major parts of New Delhi City .

Questions that can be asked using the above mentioned datasets –

- What is best location in New Delhi City for Chinese Cuisine ?
- Which areas have large number of Chinese Restaurant Market ?
- Which all areas have less number of restaurant ?
- Which is the best place to stay if I prefer Chinese Cuisine ?
- What places are have best restaurant in New Delhi?

1.0.2 Data

For this project we need the following data :

New Delhi Restaurants data that contains list Locality, Restaurant name, Rating along with their latitude and longitude.

Data source : Zomato kaggle dataset : "<https://www.kaggle.com/shrutimehta/zomato-restaurants-data>"

Description : This data set contains the required information. And we will use this data set to explore various locality of new delhi city.

Nearby places in each locality of new delhi city.

Data source : Fousquare API : "<https://developer.foursquare.com/>"

Description : By using this api we will get all the venues in each neighborhood.

1.0.3 Approach

- Collect the new delhi city data from Zomato kaggle dataset
- Using FourSquare API we will find all venues for each neighborhood.
- Filter out all venues that are nearby by locality.
- Using aggregative rating for each restaurant to find the best places.
- Visualize the Ranking of neighborhoods using folium library(python).

```
In [1]:
import pandas as pd
import numpy as np
import requests
from pandas.io.json import json_normalize
import matplotlib.cm as cm
import matplotlib.colors as colors
from sklearn.cluster import KMeans
```

```
!pip install folium
import folium
! pip install geocoder
import geocoder
```

```
print('Libraries imported successfully')
```

```
Requirement already satisfied: folium in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (0.5.0)
Requirement already satisfied: requests in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from folium) (2.23.0)
Requirement already satisfied: six in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from folium) (1.15.0)
Requirement already satisfied: branca in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from folium) (0.4.1)
Requirement already satisfied: Jinja2 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from folium) (2.11.2)
Requirement already satisfied: chardet<4,>=3.0.2 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->folium) (3.0.4)
Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->folium) (1.25.9)
Requirement already satisfied: certifi>=2017.4.17 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->folium) (2020.4.5.2)
Requirement already satisfied: idna<3,>=2.5 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->folium) (2.9)
```

Requirement already satisfied: MarkupSafe>=0.23 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from jinja2->folium) (1.1.1)

Requirement already satisfied: geocoder in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (1.38.1)

Requirement already satisfied: click in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from geocoder) (7.1.2)

Requirement already satisfied: requests in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from geocoder) (2.23.0)

Requirement already satisfied: ratelim in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from geocoder) (0.1.6)

Requirement already satisfied: future in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from geocoder) (0.18.2)

Requirement already satisfied: six in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from geocoder) (1.15.0)

Requirement already satisfied: chardet<4,>=3.0.2 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->geocoder) (3.0.4)

Requirement already satisfied: certifi>=2017.4.17 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->geocoder) (2020.4.5.2)

Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->geocoder) (1.25.9)

Requirement already satisfied: idna<3,>=2.5 in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from requests->geocoder) (2.9)

Requirement already satisfied: decorator in /home/jupyterlab/conda/envs/python/lib/python3.6/site-packages (from ratelim->geocoder) (4.4.2)

Libraries imported successfully

In [3]:

```
df = pd.read_csv('https://raw.githubusercontent.com/abhanshu97/Battle-of-Capstone/master/zomato.csv',encoding='ISO-8859-1')
df.head()
```

Resta urant ID	Resta urant Nam e	Cou ntr y Cod e	C it y	Addre ss	Loca lity	Locali ty Verbo se	Longi tude	Latit ude	Cuis ines	...	Cur renc y	Has Tab le boo king	Has Onl ine deli ver y	Is deli verin g now	Sw itc h to or der men u	Pr ice ra ng e	Aggr egat e ratin g	Ra tin g col or	Ra tin g tex t	Vot es	
0	6317637	Le Peti t Sou ffle	162	Makati City	Third Floor, Century City Mall, Kala yaan Aven...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.027535	14.565443	French, Japanese, Deserts	...	Botswana Pula (P)	Yes	No	No	No	3	4.8	Dark Green	Excellent	314
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277	Little Tokyo, Legas	Little Tokyo, Legas	121.014101	14.553708	Japanese	...	Botswana Pula	Yes	No	No	No	3	4.5	Dark Green	Excellent	591

Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines	...	Currency	Has Table booking	Has Online delivery	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color	Rating text	Votes
2	6300002	India	Mandayong	Mandayong City	Chino Roces Avenue, Legaspi...	Chip Village, Makati City	121.056831	14.581404	Seafood, Asian, Filipino, Indian	...	Botswana Pula (P)	Yes	No	No	No	4	4.4	Green	Very Good	270
					Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	121.056475	14.585318	Japanese, Sushi	...	Botswana Pula (P)	No	No	No	No	4	4.9	Dark Green	Excellent	365
					Third Floor, Mega Fashion Hall, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	121.057508	14.584450	Japanese, Korean	...	Botswana Pula (P)	Yes	No	No	No	4	4.8	Dark Green	Excellent	229

5 rows × 21 columns

[4]:

```
df_india = df[df['Country Code'] == 1]
df_NDLS = df_india[df_india['City'] == 'New Delhi']
df_NDLS.reset_index(drop=True, inplace=True)
df_NDLS.head()
```

[4]:

Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines	...	Currency	Has Table booking	Has Online delivery	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color	Rating text	Votes
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	Resta urant ID	Resta urant Name	Cou ntry Cod e	Ci ty	Addr ess	Loc ality	Loc ality Ver bose	Long itude	Latit ude	Cuisi nes	.	Curren cy	Has Tab le boo king	Has Onli ne deli very	Is deliv ering now	Swi tch to ord er men u	Pri ce ran ge	Aggr egate ratin g	Rati ng col or	Rati ng tex t	Vo tes
0	18287358	Food Cloud	1	New Delhi	Aaya Nagar, New Delhi	Aaya Nagar	Aaya Nagar, New Delhi	0.000000	0.000000	Cuisine Varies	.	Indian Rupees (Rs.)	No	No	No	No	2	0.0	White	Not rated	2
1	18216944	Burger.in	1	New Delhi	84, Near Honda Showroom, Adchini, New Delhi	Adchini	Adchini, New Delhi	77.196923	28.535382	Fast Food	.	Indian Rupees (Rs.)	No	Yes	No	No	1	3.2	Orange	Average	46
2	313333	Days of the Raj	1	New Delhi	81/3, 1st Floor, Qutub Residency, Adchini, New...	Adchini	Adchini, New Delhi	77.197475	28.535493	North Indian, Seafood, Continental	.	Indian Rupees (Rs.)	Yes	Yes	No	No	3	3.4	Orange	Average	45
3	18384127	Dilli Ka Dhaba	1	New Delhi	66 A, Ground Floor, Sri Aurobindo Marg, Adchini...	Adchini	Adchini, New Delhi	77.198033	28.537547	South Indian, North Indian	.	Indian Rupees (Rs.)	No	No	No	No	2	2.6	Orange	Average	11
4	582	Govaradhan	1	New Delhi	84, Adjacent Hero Motor Bike Showroom, Main Me...	Adchini	Adchini, New Delhi	77.196924	28.535523	South Indian, North Indian, Chinese	.	Indian Rupees (Rs.)	No	Yes	No	No	2	3.4	Orange	Average	238

5 rows × 21 columns

Resta rant ID	Resta rant Nam e	Cou ntr y Cod e	C it y	Adde ss	Loca lity	Locali ty Verbo se	Longi tude	Latit ude	Cuis ines	...	Cur renc y	Has Tab le boo king	Has Onl ine deli ver y	Is deliv erin g now	Swi tch to or der men u	Pr ice ran ge	Aggr egate ratin g	Rati ng col or	Rati ng tex t	Vot es	
0	6317 637	Le Peti t Sou ffle	1 6 2	Makat i City	Thir d Floor , Cent ury	Centur y City Mall, Poblac ion, Makat	Centur y City Mall, Poblac ion, Makat	121.0 2753 5	14.5 6544 3	Fren ch, Japa nese , Des	...	Bots wan a Pula (P)	Yes	No	No	No	3	4.8	Da rk Gr een	Exc elle nt	3 1 4

Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines	...	Currency	Has Table booking	Has Online delivery	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color	Rating text	Votes	
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					Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	121.014101	14.553708	Japanese	...	Botswana Pula (P)	Yes	No	No	No	3	4.5	Dark Green	Excellent	591
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3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Manda...	121.056475	14.585318	Japanese, Sushi	...	Botswana Pula (P)	No	No	No	No	4	4.9	Dark Green	Excellent	365
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```

df_NDLS.head()

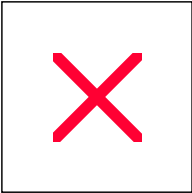
[4]:

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5 rows × 21 columns

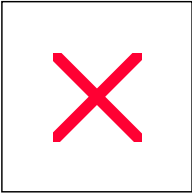
Data Cleaning

[8]:



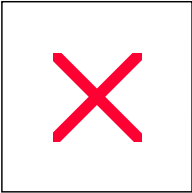
Res= df_NDLS[df_NDLS.Longitude !=0.000000][['Restaurant Name','Locality','Longitude','Latitude','Cuisines','Aggregate rating','Rating text','Votes']]

[9]:



Res = Res[Res['Aggregate rating'] !=0.0]

[10]:

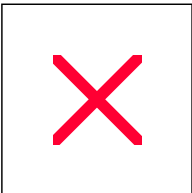


Res.head()

[10]:

	Restaurant Name	Locality	Longitude	Latitude	Cuisines	Aggregate rating	Rating text	Votes
1	Burger.in	Adchini	77.196923	28.535382	Fast Food	3.2	Average	46
2	Days of the Raj	Adchini	77.197475	28.535493	North Indian, Seafood, Continental	3.4	Average	45
3	Dilli Ka Dhaba	Adchini	77.198033	28.537547	South Indian, North Indian	2.6	Average	11
4	Govardhan	Adchini	77.196924	28.535523	South Indian, North Indian, Chinese	3.4	Average	238
5	Mezbaan Grills	Adchini	77.198122	28.538134	Mughlai	3.1	Average	8

Creating Map



New_Delhi_Rest = folium.Map(location=[28.52, 77.25], zoom_start=12)

X = Res['Latitude']
Y = Res['Longitude']
Z = np.stack((X, Y), axis=1)

kmeans = KMeans(n_clusters=5, random_state=0).fit(Z)

clusters = kmeans.labels_
colors = ['red', 'green', 'blue', 'yellow','orange']
Res ['Cluster'] = clusters

for latitude, longitude, Locality, cluster in zip(Res['Latitude'], Res['Longitude'], Res['Locality'], Res['Cluster']):
label = folium.Popup(Locality, parse_html=True)
folium.CircleMarker(
[latitude, longitude],
radius=5,

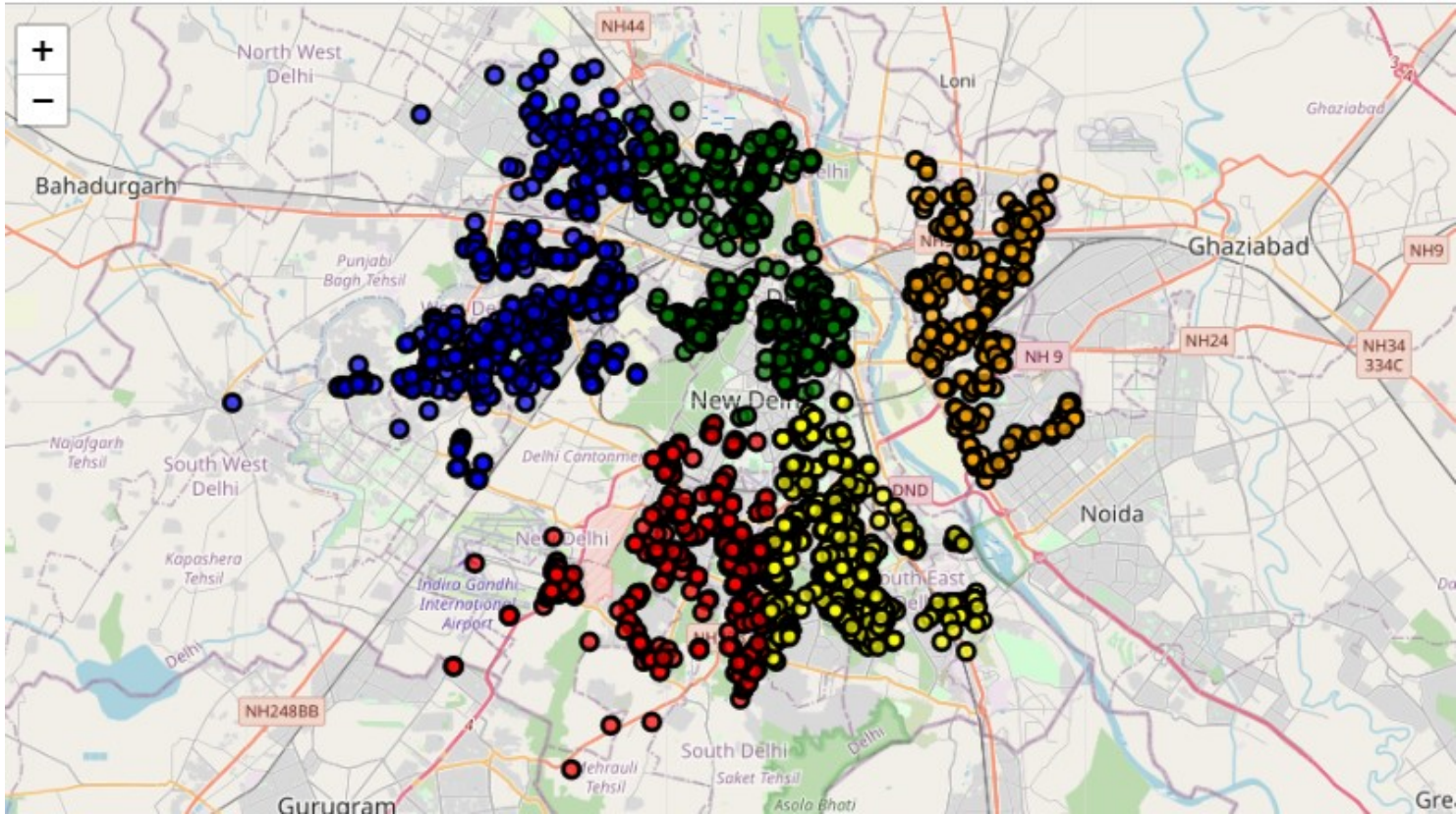
[11]:


```
popup=label,
color='black',
fill=True,
fill_color=colors[cluster],
fill_opacity=0.7).add_to(New_Delhi_Rest)
```

New_Delhi_Rest

[11]:

Make this Notebook Trusted to load map: File -> Trust Notebook



[12]:

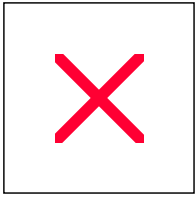
Res.head()

[12]:

	Restaurant Name	Locality	Longitude	Latitude	Cuisines	Aggregate rating	Rating text	Votes	Cluster
1	Burger.in	Adchini	77.196923	28.535382	Fast Food	3.2	Average	46	0
2	Days of the Raj	Adchini	77.197475	28.535493	North Indian, Seafood, Continental	3.4	Average	45	0
3	Dilli Ka Dhaba	Adchini	77.198033	28.537547	South Indian, North Indian	2.6	Average	11	0
4	Govardhan	Adchini	77.196924	28.535523	South Indian, North Indian, Chinese	3.4	Average	238	0
5	Mezbaan Grills	Adchini	77.198122	28.538134	Mughlai	3.1	Average	8	0

What places are have best restaurant in New Delhi?

[13]:



```
import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The highest rated resturant in top 10 locality of New Delhi')
#On x-axis

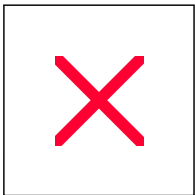
#giving a bar plot
Res.groupby('Locality')['Aggregate rating'].mean().nlargest(10).plot(kind='bar')

plt.xlabel('Resturant Locality in New Delhi')
#On y-axis
plt.ylabel('Aggregate Rating')
#displays the plot
plt.show()
```

The best restaurants are available in Kesbah, Greater Kailash area.

what places are have worst restaurants in New Delhi?

[14]:



```
import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The Worst rated resturant in top 10 locality of New Delhi')
#On x-axis

#giving a bar plot

Res.groupby('Locality')['Aggregate rating'].mean().nsmallest(10).plot(kind='bar')

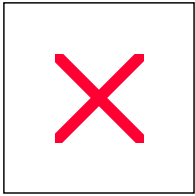
plt.xlabel('Resturant Locality in New Delhi')
#On y-axis
plt.ylabel('Aggregate Rating')

#displays the plot
plt.show()
```

The worst restaurants are available in Piccadily Hotel, Janakpuri.

Which place are suitable for edible person in New Delhi city?

[15]:



```
import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The highest number of Restaurant available in Locality of New Delhi')
#On x-axis

#giving a bar plot
Res.groupby('Locality')['Restaurant Name'].count().nlargest(10).plot(kind='bar')

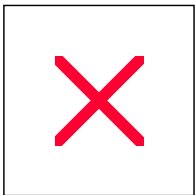
plt.xlabel('Resturant Locality in New Delhi')
#On y-axis
plt.ylabel('Number of Restaurant')

#displays the plot
plt.show()
```

Connaught Place is the best places for edible person to stay there.

Which place are not suitable for edible person in New Delhi city?

[16]:



```
import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The lowest number of Restaurant available in Locality of New Delhi')
#On x-axis

#giving a bar plot
Res.groupby('Locality')['Restaurant Name'].count().nsmallest(10).plot(kind='bar')

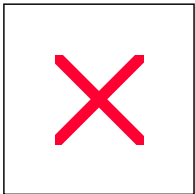
plt.xlabel('Resturant Locality in New Delhi')
#On y-axis
```

```
plt.ylabel('Number of Restaurant')
```

```
#displays the plot  
plt.show()
```

What are the best places for chinese restaurant in New Delhi city

[19]:

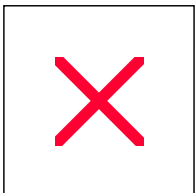


```
import matplotlib.pyplot as plt  
plt.figure(figsize=(9,5), dpi = 100)  
# title  
plt.title('The best Locality for chinese restaurant in New Delhi city')  
#On x-axis  
  
#giving a bar plot  
Res[Res['Cuisines'].str.startswith('Chinese')].groupby('Locality')['Restaurant Name'].count().nlargest(5).plot(kind='bar')  
  
plt.xlabel('Resturant Locality in New Delhi')  
#On y-axis  
plt.ylabel('Number of Chinese Restaurant')  
  
#displays the plot  
plt.show()
```

Chanakyapuri is the best place for Chinese restaurant.

which places are the best chinese resturants in New Delhi?

[20]:



```
import matplotlib.pyplot as plt  
plt.figure(figsize=(9,5), dpi = 100)  
# title  
plt.title('The best places for Chinese restaurant in New Delhi city')  
#On x-axis
```

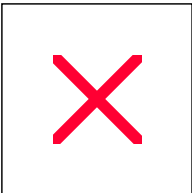
```
#giving a bar plot
Res[Res['Cuisines'].str.startswith('Chinese')].groupby('Locality')['Aggregate rating'].mean().nlargest(5).plot(kind='bar')

plt.xlabel('Resturant Locality in New Delhi')
#On y-axis
plt.ylabel('Rating of restraurants')

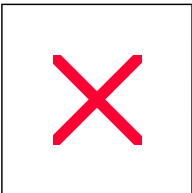
#displays the plot
plt.show()
```

Panchsheel park is best Chinese restrurants.

Data Transformation



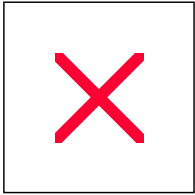
```
Res_Loc = Res.groupby('Locality').count()['Restaurant Name'].to_frame()
Res_rating= Res.groupby('Locality')['Aggregate rating'].mean().to_frame()
d_Cuisines = Res.groupby(['Locality'])['Cuisines'].agg(' ', '.join').reset_index()
d_R = Res.groupby(['Locality'])['Rating text'].unique().agg(' ', '.join').reset_index()
d_V = Res.groupby(['Locality'])['Votes'].sum().to_frame()
d_Lat = Res.groupby('Locality').mean()['Latitude'].to_frame()
d_Lng = Res.groupby('Locality').mean()['Longitude'].to_frame()
df_final = pd.merge(d_Lat,d_Lng,on='Locality').merge(Res_Loc, on='Locality').merge(d_Cuisines,
on='Locality').merge(Res_rating,on ='Locality').merge(d_R, on ='Locality').merge(d_V, on ='Locality')
```



```
df_final = df_final[df_final['Aggregate rating'] != 0.000000]
df_final.columns =['Locality','Lat','Lng', 'No_of_Restaurant','Cusines', 'Agg_Rating','Comments', 'No_of_Votes']
df_final.head()
```

	Locality	Lat	Lng	No_of_Restaurant	Cusines	Agg_Rating	Comments	No_of_Votes
0	ARSS Mall, Paschim Vihar	28.668945	77.101544	1	North Indian, South Indian, Chinese, Mithai, F...	3.100000	Average	117
1	Adchini	28.537063	77.197808	13	Fast Food, North Indian, Seafood, Continental,...	3.292308	Average, Good, Poor, Very Good	1560
2	Aditya Mega Mall, Karkardooma	28.656131	77.301266	4	Finger Food, North Indian, Mughlai, Pizza, Fas...	3.275000	Average, Good	434
3	Aerocity	28.553077	77.104270	2	Fast Food, Italian, Pizza, North Indian, Conti...	3.200000	Average	59
4	Aggarwal City Mall, Pitampura	28.690020	77.134650	3	North Indian, Chinese, Street Food, Mithai, No...	3.033333	Average	126

[23]:



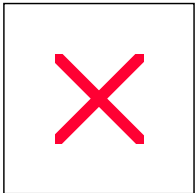
df_final.shape

(240, 8)

[23]:

Define Foursquare Credentials and Version

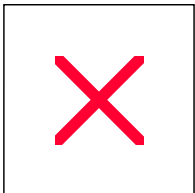
[24]:



```
CLIENT_ID = 'IV1SGC3E3FNLS51P2EOFFHDTRQCPY22ADT4NXFRFI2ABMG4T' # Foursquare ID
CLIENT_SECRET = 'R3BM52ZYKIHLAYY344JLAYN5RKRHARNUEG301IBGDG2RGV22' # Foursquare Secret
VERSION = '20180605' # Foursquare API version
```

```
print('Your credentials:')
print('CLIENT_ID: ' + CLIENT_ID)
print('CLIENT_SECRET:' + CLIENT_SECRET)
Your credentials:
CLIENT_ID: IV1SGC3E3FNLS51P2EOFFHDTRQCPY22ADT4NXFRFI2ABMG4T
CLIENT_SECRET:R3BM52ZYKIHLAYY344JLAYN5RKRHARNUEG301IBGDG2RGV22
```

[25]:



create a function to repeat the same process to all the Locality in New Delhi

def getNearbyVenues(names, latitudes, longitudes, radius=500,LIMIT = 100):

```
    venues_list=[]
    for name, lat, lng in zip(names, latitudes, longitudes):
        print(name)

        # create the API request URL
        url =
'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&ll={},{}&radius={}&limit={}'.format(
            CLIENT_ID,
            CLIENT_SECRET,
            VERSION,
            lat,
            lng,
            radius,
            LIMIT)

        # make the GET request
```

```

results = requests.get(url).json()["response"]["groups"][0]["items"]

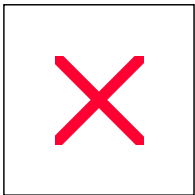
# return only relevant information for each nearby venue
venues_list.append([
    name,
    lat,
    lng,
    v['venue']['name'],
    v['venue']['location']['lat'],
    v['venue']['location']['lng'],
    v['venue']['categories'][0]['name']) for v in results])

nearby_venues = pd.DataFrame([item for venue_list in venues_list for item in venue_list])
nearby_venues.columns = ['Locality',
    'Locality Latitude',
    'Locality Longitude',
    'Venue',
    'Venue Latitude',
    'Venue Longitude',
    'Venue Category']

return(nearby_venues)

```

[26]:



```

# find the venues in all New Delhi Locality
new_Delhi_venues = getNearbyVenues(names=df_final['Locality'],
    latitudes=df_final['Lat'],
    longitudes=df_final['Lng']
)

```

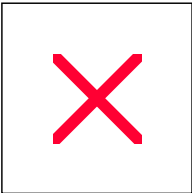
ARSS Mall, Paschim Vihar
 Adchini
 Aditya Mega Mall, Karkardooma
 Aerocity
 Aggarwal City Mall, Pitampura
 Aggarwal City Plaza, Rohini
 Alaknanda
 Ambience Mall, Vasant Kunj
 Anand Lok
 Anand Vihar
 Andaz Delhi, Aerocity
 Ansal Plaza Mall, Khel Gaon Marg
 Asaf Ali Road
 Ashok Vihar Phase 1
 Ashok Vihar Phase 2
 Ashok Vihar Phase 3
 Barakhamba Road
 Basant Lok Market, Vasant Vihar
 Bellagio, Ashok Vihar Phase 2
 Best Western Taurus Hotel, Mahipalpur
 Bhikaji Cama Place
 Chanakyapuri
 Chander Nagar
 Chandni Chowk

Chawri Bazar
Chhatarpur
Chittaranjan Park
City Centre Mall, Rohini
City Square Mall, Rajouri Garden
Civil Lines
Community Centre, New Friends Colony
Connaught Place
Crescent Square Mall, Rohini
Cross River Mall, Karkardooma
Crowne Plaza Hotel, Rohini
Crowne Plaza, Mayur Vihar Phase 1
D Mall, Netaji Subhash Place
DDA Market, Kalu Sarai, Hauz Khas
DLF City Centre Mall, Shalimar Bagh
DLF Emporio Mall, Vasant Kunj
DLF Place Mall, Saket
DLF Promenade Mall, Vasant Kunj
DLF South Square, Sarojini Nagar
Daryaganj
Defence Colony
Delhi University-GTB Nagar
Dilli Haat, INA
Dilshad Garden
District Centre, Janakpuri
Dr. Zakir Hussain Marg
East Patel Nagar
East of Kailash
Epicuria Food Mall, Nehru Place
Eros Hotel, Nehru Place
Essex Farms
Feroze Shah Road
Friends Colony
GTB Nagar
Garden of Five Senses, Saket
Geeta Colony
Ginger Hotel, Vivek Vihar
Gourmet Hub, Pashim Vihar
Greater Kailash (GK) 1
Greater Kailash (GK) 2
Greater Kailash (GK) 3
Green Park
Gujranwala Town
Hauz Khas
Hauz Khas Village
Holiday Inn, Aerocity
Holiday Inn, Mayur Vihar
Hotel Broadway, Daryaganj
Hotel City Park, Pitampura
Hotel Regent Grand, Karol Bagh
Hotel The Royal Plaza, Janpath
Hyatt Regency, Bhikaji Cama Place
INA
IP Extension
ITC Maurya, Chanakyapuri
ITO
India Gate
JMD Kohinoor Mall, Greater Kailash

JNU
JW Marriott New Delhi
Jail Road
Jama Masjid
Janakpuri
Jangpura
Janpath
Jasola
Jaypee Siddharth, Rajendra Place
Jaypee Vasant Continental, Vasant Vihar
Jor Bagh
Kailash Colony
Kalkaji
Kamla Nagar
Kapashera
Karampura
Karkardooma
Karol Bagh
Kasbah, Greater Kailash (GK) 1
Kashmiri Gate
Khan Market
Kirti Nagar
Krishna Nagar
Lado Sarai
Lajpat Nagar 1
Lajpat Nagar 2
Lajpat Nagar 4
Lawrence Road
Laxmi Nagar
Le Meridien, Janpath
Lemon Tree Premier, Aerocity
Living Style Mall, Jasola
Lodhi Colony
Lodhi Road
MG Road
MGF Metropolitan Mall, Saket
MGM Club, Daryaganj
Mahipalpur
Maidens Hotel, Civil Lines
Majnu ka Tila
Malviya Nagar
Mandi House
Mathura Road
Mayapuri Phase 2
Mayur Vihar Phase 1
Mayur Vihar Phase 2
Mayur Vihar Phase 3
Mehrauli
Metro Walk Mall, Rohini
Model Town 1
Model Town 2
Model Town 3
Moments Mall, Kirti Nagar
Moti Bagh
Moti Nagar
Mukherjee Nagar
Munirka
Najafgarh

Naraina
Nehru Place
Netaji Subhash Place
New Friends Colony
Nizamuddin
Okhla Phase 1
Okhla Phase 2
PVR Anupam Complex
Pacific Mall, Tagore Garden
Paharganj
Palam
Palate of Delhi, Chanakyapuri
Panchsheel Park
Pandara Road Market
Pandav Nagar
Paschim Vihar
Patparganj
Piccadily Hotel, Janakpuri
Pitampura
Pragati Maidan
Prashant Vihar
Preet Vihar
Premier Inn, Shalimar Bagh
Pride Plaza Hotel, Aerocity
Punjabi Bagh
Qutab Institutional Area
R K Puram
Race Course
Radisson Blu Plaza Delhi, Mahipalpur
Radisson Blu, Paschim Vihar
Rajendra Place
Rajinder Nagar
Rajouri Garden
Rohini
Roseate House, Aerocity
SDA
Safdarjung
Sainik Farms
Saket
Sangam Courtyard, RK Puram
Sarita Vihar
Sarojini Nagar
Satyaniketan
Sector 15, Dwarka
Select Citywalk Mall, Saket
Shahdara
Shahpur Jat
Shakarpur
Shalimar Bagh
Shangri La's - Eros hotel, Janpath
Shanti Niketan Marg
Sheikh Sarai
Sheraton New Delhi Hotel, Saket
South Extension 1
South Extension 2
Southern Park Mall, Saket
Spark Mall, Kamla Nagar
Star City Mall, Mayur Vihar Phase 1

Subhash Nagar
Sunder Nagar
T3 Domestic Arrival, Aerocity
TDI Mall, Rajouri Garden
Tagore Garden
Taj Vivanta, Khan Market
The Ashok, Chanakyapuri
The Claridges, Aurangzeb Road
The Grand New Delhi, Vasant Kunj
The Imperial, Janpath
The India Mall, New Friends Colony
The Lalit New Delhi, Barakhamba Road
The Leela Ambience Convention Hotel
The Leela Palace, Chanakyapuri
The Lodhi, Lodhi Road
The Park, Connaught Place
The Suryaa New Delhi, New Friends Colony
The Taj Mahal Hotel, Mansingh Road
The Taj Palace Hotel, Chanakyapuri
The Uppal, Aerocity
The Village Restaurant Complex, Khel Gaon Marg
Tilak Nagar
Tughlakabad Institutional Area
Uday Park
Unity One Mall, Janakpuri
Uttam Nagar
V3S Mall, Laxmi Nagar
Vasant Kunj
Vasant Square Mall, Vasant Kunj
Vasant Vihar
Vasundhara Enclave
Vijay Nagar
Vikas Marg
Vikaspuri
Vivek Vihar
Wazirpur
West End Mall, Janak Puri
West Gate Mall, Rajouri Garden
West Patel Nagar
Worldmark 1, Aerocity
Yusuf Sarai
ibis New Delhi, Aerocity



new_Delhi_venues.head()

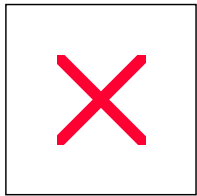
[27]:

	Locality	Locality Latitude	Locality Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	ARSS Mall, Paschim Vihar	28.668945	77.101544	Subway	28.669999	77.102546	Sandwich Place
1	ARSS Mall, Paschim Vihar	28.668945	77.101544	Baljeet's Amritsari Koolcha	28.665768	77.100481	Indian Restaurant
2	ARSS Mall, Paschim Vihar	28.668945	77.101544	Pizza Hut	28.670321	77.103853	Pizza Place

[27]:

	Locality	Locality Latitude	Locality Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
3	ARSS Mall, Paschim Vihar	28.668945	77.101544	Café Coffee Day	28.670009	77.102480	Coffee Shop
4	ARSS Mall, Paschim Vihar	28.668945	77.101544	Little Chef	28.670000	77.101459	Chinese Restaurant

[28]:



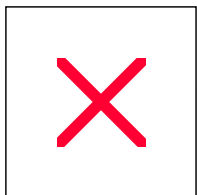
```
new_Delhi_venues.groupby('Locality').count()
```

[28]:

	Locality Latitude	Locality Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Locality						
ARSS Mall, Paschim Vihar	10	10	10	10	10	10
Adchini	6	6	6	6	6	6
Aditya Mega Mall, Karkardooma	10	10	10	10	10	10
Aerocity	7	7	7	7	7	7
Aggarwal City Mall, Pitampura	5	5	5	5	5	5
...
West Gate Mall, Rajouri Garden	17	17	17	17	17	17
West Patel Nagar	4	4	4	4	4	4
Worldmark 1, Aerocity	30	30	30	30	30	30
Yusuf Sarai	11	11	11	11	11	11
ibis New Delhi, Aerocity	28	28	28	28	28	28

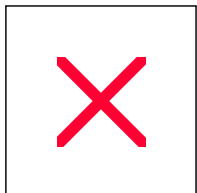
240 rows × 6 columns

[29]:



```
print('There are {} uniques categories.'.format(len(new_Delhi_venues['Venue Category'].unique())))
There are 214 uniques categories.
```

[30]:



```
# one hot encoding
new_Delhi_onehot = pd.get_dummies(new_Delhi_venues[['Venue Category']], prefix="", prefix_sep="")
```

```
# add Locality column back to dataframe
new_Delhi_onehot['Locality'] = new_Delhi_venues['Locality']
```

```
# move Locality column to the first column
column_list = new_Delhi_onehot.columns.tolist()
column_number = int(column_list.index('Locality'))
column_list = [column_list[column_number]] + column_list[:column_number] + column_list[column_number+1:]
new_Delhi_onehot = new_Delhi_onehot[column_list]
```

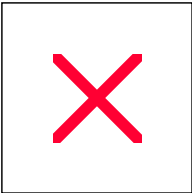
```
new_Delhi_onehot.head()
```

[30]:

	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Food Court	Airport Lounge	Airport Service	Airport Terminal	.	Trail	Train Station	Turkish Restaurant	Udupi Restaurant	Vegetarian / Vegan Restaurant	Vietnamese Restaurant	Whisky Bar	Wine Bar	Wings Joint	Women's Store
0	ARSS Mall, Paschim Viহার	0	0	0	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0
1	ARSS Mall, Paschim Viহার	0	0	0	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0
2	ARSS Mall, Paschim Viহার	0	0	0	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0
3	ARSS Mall, Paschim Viহার	0	0	0	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0
4	ARSS Mall, Paschim Viহার	0	0	0	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	0	0

5 rows × 215 columns

[31]:



```
New_Delhi_grouped = new_Delhi_onehot.groupby('Locality').mean().reset_index()
New_Delhi_grouped
```

[31]:

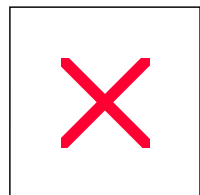
	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Food Court	Airport Lounge	Airport Service	Airport Terminal	.	Trail	Train Station	Turkish Restaurant	Udupi Restaurant	Vegetarian / Vegan Restaurant	Vietnamese Restaurant	Whisky Bar	Wine Bar	Wings Joint	Women's Store
0	ARSS Mall, Paschim Vihar	0.1	0.100000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Adchini	0.0	0.000000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Aditya Mega Mall, Karkardooma	0.0	0.000000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Aerocity	0.0	0.000000	0.0	0.0	0.0	0.0	0.142857	0.0	0.142857	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Aggarwal City Mall, Pitampura	0.0	0.000000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
...
235	West Gate Mall, Rajouri Garden	0.0	0.000000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
236	West Patel Nagar	0.0	0.000000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
237	Worldmark 1, Aerocity	0.0	0.033333	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.033333	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
238	Yusuf Sarai	0.0	0.000000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
239	ibis New Delhi,	0.0	0.000000	0.0	0.0	0.0	0.0	0.000000	0.0	0.000000	.	0.0	0.035714	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Food Court	Airport Lounge	Airport Service	Airport Terminal	.	Trail	Train Station	Turkish Restaurant	Udupi Restaurant	Vegetarian / Vegan Restaurant	Vietnamese Restaurant	Whisky Bar	Wine Bar	Wings Joint	Women's Store
----------	-----	-------------------	-------------------	--------------------	---------	--------------------	----------------	-----------------	------------------	---	-------	---------------	--------------------	------------------	-------------------------------	-----------------------	------------	----------	-------------	---------------

Aerocity

240 rows × 215 columns

[32]:

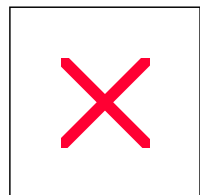


New_Delhi_grouped.shape

[32]:

(240, 215)

[33]:



print each Locality along with the top 5 most common venues

num_top_venues = 5

```
for hood in New_Delhi_grouped['Locality']:
    print("----"+hood+"----")
    temp = New_Delhi_grouped[New_Delhi_grouped['Locality'] == hood].T.reset_index()
    temp.columns = ['venue','freq']
    temp = temp.iloc[1:]
    temp['freq'] = temp['freq'].astype(float)
    temp = temp.round({'freq': 2})
    print(temp.sort_values('freq', ascending=False).reset_index(drop=True).head(num_top_venues))
    print('\n')
```

```
----ARSS Mall, Paschim Vihar----
      venue freq
0  Indian Restaurant  0.2
1         ATM      0.1
2  Chinese Restaurant  0.1
3   Coffee Shop    0.1
4        Market    0.1

----Adchini----
      venue freq
0  Indian Restaurant  0.33
1         Caf       0.33
2         Pub      0.17
3  Parsi Restaurant  0.17
4         ATM      0.00
```

----Aditya Mega Mall, Karkardooma----

	venue	freq
0	Multiplex	0.2
1	Indian Restaurant	0.2
2	Shopping Mall	0.2
3	Pizza Place	0.2
4	Café	0.1

----Aerocity----

	venue	freq
0	Hotel	0.29
1	Airport Terminal	0.14
2	Coffee Shop	0.14
3	Airport Lounge	0.14
4	Rental Car Location	0.14

----Aggarwal City Mall, Pitampura----

	venue	freq
0	Donut Shop	0.2
1	Department Store	0.2
2	Pizza Place	0.2
3	Indian Restaurant	0.2
4	Food	0.2

----Aggarwal City Plaza, Rohini----

	venue	freq
0	Multiplex	0.12
1	Gym / Fitness Center	0.12
2	Electronics Store	0.12
3	Fast Food Restaurant	0.12
4	Restaurant	0.12

----Alaknanda----

	venue	freq
0	Steakhouse	0.25
1	New American Restaurant	0.25
2	Coffee Shop	0.25
3	Market	0.25
4	ATM	0.00

----Ambience Mall, Vasant Kunj----

	venue	freq
0	Coffee Shop	0.09
1	Clothing Store	0.07
2	Italian Restaurant	0.07
3	Shopping Mall	0.07
4	Café	0.07

----Anand Lok----

	venue	freq
0	Stadium	0.18
1	Café	0.18

2 Dessert Shop 0.09
3 Metro Station 0.09
4 Other Great Outdoors 0.09

----Anand Vihar----

	venue	freq
0	Caf�	0.4
1	Dessert Shop	0.2
2	Burger Joint	0.2
3	Burrito Place	0.2
4	Portuguese Restaurant	0.0

----Andaz Delhi, Aerocity----

	venue	freq
0	Hotel	0.39
1	Coffee Shop	0.09
2	Indian Restaurant	0.04
3	Shopping Mall	0.04
4	Buffet	0.04

----Ansal Plaza Mall, Khel Gaon Marg----

	venue	freq
0	Snack Place	0.2
1	Sporting Goods Shop	0.2
2	Performing Arts Venue	0.2
3	Gym / Fitness Center	0.2
4	Fast Food Restaurant	0.2

----Asaf Ali Road----

	venue	freq
0	Hotel	0.33
1	Movie Theater	0.17
2	Indian Restaurant	0.17
3	Campground	0.17
4	Hostel	0.17

----Ashok Vihar Phase 1----

	venue	freq
0	Dessert Shop	0.14
1	Snack Place	0.14
2	Pizza Place	0.14
3	Smoke Shop	0.14
4	Indian Restaurant	0.14

----Ashok Vihar Phase 2----

	venue	freq
0	South Indian Restaurant	0.17
1	Indian Restaurant	0.17
2	Sandwich Place	0.17
3	Coffee Shop	0.17
4	Asian Restaurant	0.17

----Ashok Vihar Phase 3----

	venue	freq
0	Pizza Place	0.25
1	Shopping Mall	0.25
2	BBQ Joint	0.25
3	South Indian Restaurant	0.25
4	ATM	0.00

----Barakhamba Road----

	venue	freq
0	Theater	0.14
1	Bakery	0.14
2	Indian Restaurant	0.14
3	Café	0.14
4	Nightclub	0.07

----Basant Lok Market, Vasant Vihar----

	venue	freq
0	Café	0.12
1	Restaurant	0.08
2	Chinese Restaurant	0.08
3	Fast Food Restaurant	0.08
4	Pizza Place	0.08

----Bellagio, Ashok Vihar Phase 2----

	venue	freq
0	South Indian Restaurant	0.17
1	Indian Restaurant	0.17
2	Sandwich Place	0.17
3	Coffee Shop	0.17
4	Asian Restaurant	0.17

----Best Western Taurus Hotel, Mahipalpur----

	venue	freq
0	Hotel	0.42
1	Hotel Bar	0.08
2	Indian Restaurant	0.08
3	Accessories Store	0.08
4	Buffet	0.08

----Bhikaji Cama Place----

	venue	freq
0	Lounge	0.18
1	Hotel	0.09
2	Chinese Restaurant	0.09
3	Breakfast Spot	0.09
4	Gym / Fitness Center	0.09

----Chanakyapuri----

	venue	freq
0	Park	0.2

1	African Restaurant	0.2
2	Concert Hall	0.2
3	Trail	0.2
4	Café	0.2

----Chander Nagar----

	venue	freq
0	Pizza Place	0.5
1	Fast Food Restaurant	0.5
2	ATM	0.0
3	Other Great Outdoors	0.0
4	Music Store	0.0

----Chandni Chowk----

	venue	freq
0	Indian Restaurant	0.33
1	Snack Place	0.22
2	Dessert Shop	0.11
3	Market	0.11
4	Train Station	0.06

----Chawri Bazar----

	venue	freq
0	Snack Place	0.17
1	Light Rail Station	0.17
2	Hardware Store	0.17
3	Indian Restaurant	0.17
4	Fast Food Restaurant	0.17

----Chhatarpur----

	venue	freq
0	Donut Shop	0.17
1	Indian Restaurant	0.17
2	Hotel	0.17
3	Japanese Restaurant	0.17
4	Light Rail Station	0.17

----Chittaranjan Park----

	venue	freq
0	Market	0.50
1	Beer Garden	0.25
2	Hookah Bar	0.25
3	ATM	0.00
4	Office	0.00

----City Centre Mall, Rohini----

	venue	freq
0	Department Store	0.25
1	Shopping Mall	0.25
2	Multiplex	0.12
3	Fast Food Restaurant	0.12
4	Indian Restaurant	0.12

----City Square Mall, Rajouri Garden----

	venue	freq
0	Fast Food Restaurant	0.17
1	Café	0.13
2	Pizza Place	0.09
3	Indian Restaurant	0.09
4	Restaurant	0.09

----Civil Lines----

	venue	freq
0	Smoke Shop	0.2
1	Burger Joint	0.2
2	Light Rail Station	0.2
3	Coffee Shop	0.2
4	Chinese Restaurant	0.2

----Community Centre, New Friends Colony----

	venue	freq
0	Café	0.14
1	Indian Restaurant	0.10
2	Fast Food Restaurant	0.10
3	Diner	0.05
4	Nightclub	0.05

----Connaught Place----

	venue	freq
0	Indian Restaurant	0.15
1	Café	0.09
2	Bar	0.09
3	Chinese Restaurant	0.08
4	Coffee Shop	0.05

----Crescent Square Mall, Rohini----

	venue	freq
0	ATM	0.2
1	Pharmacy	0.2
2	American Restaurant	0.2
3	Clothing Store	0.2
4	Athletics & Sports	0.2

----Cross River Mall, Karkardooma----

	venue	freq
0	Indian Restaurant	0.50
1	Hotel	0.25
2	Pizza Place	0.25
3	Other Great Outdoors	0.00
4	Museum	0.00

----Crowne Plaza Hotel, Rohini----

	venue	freq
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0 Theme Park 0.14
1 Light Rail Station 0.14
2 Asian Restaurant 0.14
3 Hotel 0.14
4 Fast Food Restaurant 0.14

----Crowne Plaza, Mayur Vihar Phase 1----
venue freq

0 Hotel 0.38
1 Department Store 0.08
2 Asian Restaurant 0.08
3 Indian Restaurant 0.08
4 Restaurant 0.08

----D Mall, Netaji Subhash Place----
venue freq

0 Fast Food Restaurant 0.16
1 Indian Restaurant 0.16
2 Coffee Shop 0.11
3 Shopping Mall 0.11
4 Diner 0.05

----DDA Market, Kalu Sarai, Hauz Khas----
venue freq

0 Nightclub 0.2
1 Event Space 0.2
2 Coffee Shop 0.2
3 Metro Station 0.2
4 Chinese Restaurant 0.2

----DLF City Centre Mall, Shalimar Bagh----
venue freq

0 Shopping Mall 0.33
1 Gym / Fitness Center 0.17
2 Vegetarian / Vegan Restaurant 0.17
3 Convenience Store 0.17
4 Multiplex 0.17

----DLF Emporio Mall, Vasant Kunj----
venue freq

0 Coffee Shop 0.09
1 Clothing Store 0.07
2 Italian Restaurant 0.07
3 Shopping Mall 0.07
4 Café 0.07

----DLF Place Mall, Saket----
venue freq

0 Indian Restaurant 0.12
1 Clothing Store 0.07
2 Lounge 0.07
3 Bar 0.07

4 Café 0.07

----DLF Promenade Mall, Vasant Kunj----
venue freq

0 Coffee Shop 0.09
1 Clothing Store 0.07
2 Italian Restaurant 0.07
3 Shopping Mall 0.07
4 Café 0.07

----DLF South Square, Sarojini Nagar----
venue freq

0 Indian Restaurant 0.31
1 Fast Food Restaurant 0.15
2 Women's Store 0.08
3 Shopping Mall 0.08
4 Market 0.08

----Daryaganj----

venue freq
0 Indian Restaurant 0.33
1 Hotel 0.17
2 Hostel 0.17
3 Restaurant 0.17
4 Movie Theater 0.08

----Defence Colony----

venue freq
0 Indian Restaurant 0.21
1 Italian Restaurant 0.16
2 Bakery 0.11
3 Burger Joint 0.05
4 Bar 0.05

----Delhi University-GTB Nagar----

venue freq
0 Café 0.18
1 Coffee Shop 0.09
2 Chinese Restaurant 0.09
3 Snack Place 0.09
4 North Indian Restaurant 0.09

----Dilli Haat, INA----

venue freq
0 Indian Restaurant 0.25
1 Train Station 0.25
2 Restaurant 0.25
3 Market 0.25
4 ATM 0.00

----Dilshad Garden----

	venue	freq
0	Health & Beauty Service	0.25
1	Indian Restaurant	0.25
2	Market	0.25
3	Clothing Store	0.25
4	ATM	0.00

----District Centre, Janakpuri----

	venue	freq
0	Sandwich Place	0.14
1	Indian Restaurant	0.14
2	Restaurant	0.07
3	BBQ Joint	0.07
4	Hotel	0.07

----Dr. Zakir Hussain Marg----

	venue	freq
0	Indian Restaurant	0.25
1	Golf Course	0.17
2	Italian Restaurant	0.17
3	Snack Place	0.08
4	Convenience Store	0.08

----East Patel Nagar----

	venue	freq
0	Pizza Place	0.20
1	Donut Shop	0.07
2	Convenience Store	0.07
3	Café	0.07
4	Chinese Restaurant	0.07

----East of Kailash----

	venue	freq
0	Indie Movie Theater	0.14
1	Vegetarian / Vegan Restaurant	0.14
2	Hotel	0.14
3	Coffee Shop	0.14
4	Temple	0.14

----Epicuria Food Mall, Nehru Place----

	venue	freq
0	Lounge	0.07
1	Fast Food Restaurant	0.07
2	Coffee Shop	0.07
3	Bar	0.04
4	Bengali Restaurant	0.04

----Eros Hotel, Nehru Place----

	venue	freq
0	Fast Food Restaurant	0.11
1	Lounge	0.07
2	Coffee Shop	0.07

3 Bar 0.04
4 Bengali Restaurant 0.04

----Essex Farms----

	venue	freq
0	Event Space	0.25
1	Nightclub	0.25
2	Coffee Shop	0.25
3	Metro Station	0.25
4	ATM	0.00

----Feroze Shah Road----

	venue	freq
0	Indian Restaurant	1.0
1	ATM	0.0
2	Other Great Outdoors	0.0
3	Museum	0.0
4	Music Store	0.0

----Friends Colony----

	venue	freq
0	Hotel	0.33
1	Gym	0.17
2	Neighborhood	0.17
3	Café	0.17
4	Sculpture Garden	0.17

----GTB Nagar----

	venue	freq
0	Pizza Place	0.5
1	Food Truck	0.5
2	ATM	0.0
3	Office	0.0
4	Music Store	0.0

----Garden of Five Senses, Saket----

	venue	freq
0	Pub	0.14
1	Mediterranean Restaurant	0.14
2	Garden	0.14
3	Café	0.14
4	Coffee Shop	0.14

----Geeta Colony----

	venue	freq
0	Burger Joint	0.5
1	Indian Restaurant	0.5
2	ATM	0.0
3	Other Great Outdoors	0.0
4	Music Store	0.0

----Ginger Hotel, Vivek Vihar----

	venue	freq
0	Hotel	0.33
1	Café	0.17
2	Indian Restaurant	0.17
3	Asian Restaurant	0.17
4	BBQ Joint	0.17

----Gourmet Hub, Pashim Vihar----

	venue	freq
0	Food & Drink Shop	0.2
1	Pizza Place	0.2
2	Indian Restaurant	0.2
3	Ice Cream Shop	0.2
4	Bakery	0.2

----Greater Kailash (GK) 1----

	venue	freq
0	Café	0.11
1	Market	0.11
2	Indian Restaurant	0.11
3	Donut Shop	0.05
4	Salad Place	0.05

----Greater Kailash (GK) 2----

	venue	freq
0	Indian Restaurant	0.11
1	Restaurant	0.08
2	Italian Restaurant	0.08
3	Asian Restaurant	0.08
4	Pizza Place	0.05

----Greater Kailash (GK) 3----

	venue	freq
0	Café	0.14
1	Restaurant	0.14
2	Ice Cream Shop	0.07
3	Bakery	0.07
4	BBQ Joint	0.07

----Green Park----

	venue	freq
0	Indian Restaurant	0.21
1	Coffee Shop	0.14
2	Chinese Restaurant	0.10
3	Fast Food Restaurant	0.07
4	Pizza Place	0.07

----Gujranwala Town----

	venue	freq
0	Indian Restaurant	0.4
1	Snack Place	0.2

2	Gym	0.2
3	Food & Drink Shop	0.2
4	ATM	0.0

----Hauz Khas----

	venue	freq
0	Coffee Shop	0.11
1	Chinese Restaurant	0.11
2	Fast Food Restaurant	0.07
3	Indian Restaurant	0.07
4	Dessert Shop	0.07

----Hauz Khas Village----

	venue	freq
0	Café	0.12
1	Restaurant	0.10
2	Indian Restaurant	0.10
3	Bar	0.08
4	Lounge	0.06

----Holiday Inn, Aerocity----

	venue	freq
0	Hotel	0.32
1	Buffet	0.06
2	Coffee Shop	0.06
3	Bed & Breakfast	0.06
4	Light Rail Station	0.03

----Holiday Inn, Mayur Vihar----

	venue	freq
0	Hotel	0.29
1	Restaurant	0.12
2	Department Store	0.06
3	Light Rail Station	0.06
4	Liquor Store	0.06

----Hotel Broadway, Daryaganj----

	venue	freq
0	Hotel	0.25
1	Indian Restaurant	0.25
2	Hostel	0.12
3	Soccer Stadium	0.12
4	Movie Theater	0.12

----Hotel City Park, Pitampura----

	venue	freq
0	Multiplex	0.2
1	Garden	0.2
2	Coffee Shop	0.2
3	Park	0.2
4	Hotel	0.2

----Hotel Regent Grand, Karol Bagh----

	venue	freq
0	Pizza Place	0.21
1	Donut Shop	0.07
2	Convenience Store	0.07
3	Café	0.07
4	Bed & Breakfast	0.07

----Hotel The Royal Plaza, Janpath----

	venue	freq
0	Hotel	0.19
1	Indian Restaurant	0.11
2	Spa	0.11
3	Chinese Restaurant	0.07
4	Restaurant	0.07

----Hyatt Regency, Bhikaji Cama Place----

	venue	freq
0	Lounge	0.18
1	Hotel	0.09
2	Chinese Restaurant	0.09
3	Breakfast Spot	0.09
4	Gym / Fitness Center	0.09

----INA----

	venue	freq
0	Light Rail Station	0.25
1	Indian Restaurant	0.25
2	Train Station	0.25
3	Market	0.25
4	ATM	0.00

----IP Extension----

	venue	freq
0	Indian Restaurant	0.2
1	Dessert Shop	0.1
2	Gift Shop	0.1
3	Pizza Place	0.1
4	Shopping Mall	0.1

----ITC Maurya, Chanakyapuri----

	venue	freq
0	Hotel	0.12
1	Indian Restaurant	0.12
2	Café	0.09
3	Chinese Restaurant	0.06
4	Lounge	0.03

----ITO----

	venue	freq
0	Plaza	0.12

1	Udupi Restaurant	0.12
2	Clothing Store	0.12
3	Café	0.12
4	Art Museum	0.12

----India Gate----

	venue	freq
0	ATM	0.25
1	Music Venue	0.25
2	National Park	0.25
3	Government Building	0.25
4	Korean Restaurant	0.00

----JMD Kohinoor Mall, Greater Kailash----

	venue	freq
0	Restaurant	0.15
1	Ice Cream Shop	0.10
2	Pizza Place	0.10
3	Café	0.10
4	Bakery	0.05

----JNU----

	venue	freq
0	Airport Food Court	0.2
1	Shopping Mall	0.2
2	Café	0.2
3	Indian Restaurant	0.2
4	Clothing Store	0.2

----JW Marriott New Delhi----

	venue	freq
0	Hotel	0.33
1	Buffet	0.07
2	Coffee Shop	0.07
3	Light Rail Station	0.04
4	Indian Restaurant	0.04

----Jail Road----

	venue	freq
0	Indian Restaurant	0.29
1	Food Court	0.14
2	Pizza Place	0.14
3	Indian Sweet Shop	0.14
4	Ice Cream Shop	0.14

----Jama Masjid----

	venue	freq
0	Indian Restaurant	0.43
1	Snack Place	0.14
2	Mosque	0.14
3	Flea Market	0.14
4	Metro Station	0.14

----Janakpuri----

	venue	freq
0	Café	0.4
1	Gym	0.2
2	Bakery	0.2
3	Park	0.2
4	ATM	0.0

----Jangpura----

	venue	freq
0	Sandwich Place	0.2
1	Chinese Restaurant	0.2
2	Fast Food Restaurant	0.2
3	Flea Market	0.2
4	BBQ Joint	0.2

----Janpath----

	venue	freq
0	Indian Restaurant	0.15
1	Café	0.08
2	Coffee Shop	0.08
3	Italian Restaurant	0.08
4	Fast Food Restaurant	0.05

----Jasola----

	venue	freq
0	Soccer Stadium	0.2
1	Café	0.2
2	Breakfast Spot	0.2
3	Soccer Field	0.2
4	Pizza Place	0.2

----Jaypee Siddharth, Rajendra Place----

	venue	freq
0	Pizza Place	0.17
1	Fast Food Restaurant	0.11
2	Donut Shop	0.06
3	Convenience Store	0.06
4	Bed & Breakfast	0.06

----Jaypee Vasant Continental, Vasant Vihar----

	venue	freq
0	Café	0.12
1	Restaurant	0.08
2	Chinese Restaurant	0.08
3	Fast Food Restaurant	0.08
4	Pizza Place	0.08

----Jor Bagh----

	venue	freq
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0	Record Shop	0.25
1	Indian Restaurant	0.25
2	Bakery	0.25
3	Metro Station	0.25
4	ATM	0.00

----Kailash Colony----

	venue	freq
0	Bar	0.13
1	Indian Restaurant	0.13
2	Italian Restaurant	0.07
3	Bakery	0.07
4	Hotel	0.07

----Kalkaji----

	venue	freq
0	Fast Food Restaurant	0.18
1	Market	0.18
2	Dessert Shop	0.09
3	Bank	0.09
4	Sandwich Place	0.09

----Kamla Nagar----

	venue	freq
0	Breakfast Spot	0.16
1	Fast Food Restaurant	0.16
2	Indian Restaurant	0.11
3	Chinese Restaurant	0.11
4	Coffee Shop	0.11

----Kapashera----

	venue	freq
0	Food Court	0.33
1	Convenience Store	0.33
2	Food Truck	0.33
3	ATM	0.00
4	Music Venue	0.00

----Karampura----

	venue	freq
0	Moving Target	0.25
1	Vegetarian / Vegan Restaurant	0.25
2	Indian Restaurant	0.25
3	Fried Chicken Joint	0.25
4	ATM	0.00

----Karkardooma----

	venue	freq
0	Food Truck	0.25
1	Pizza Place	0.25
2	Train Station	0.25
3	Indian Restaurant	0.25

4 ATM 0.00

----Karol Bagh----

	venue	freq
0	Indian Restaurant	0.29
1	Fast Food Restaurant	0.18
2	Snack Place	0.06
3	Restaurant	0.06
4	Hotel	0.06

----Kasbah, Greater Kailash (GK) 1----

	venue	freq
0	Café	0.18
1	Indian Restaurant	0.18
2	Women's Store	0.06
3	Mediterranean Restaurant	0.06
4	Clothing Store	0.06

----Kashmiri Gate----

	venue	freq
0	Pizza Place	0.17
1	Fast Food Restaurant	0.17
2	Bus Station	0.17
3	American Restaurant	0.17
4	Historic Site	0.17

----Khan Market----

	venue	freq
0	Café	0.18
1	Coffee Shop	0.09
2	Chinese Restaurant	0.07
3	Bar	0.07
4	Asian Restaurant	0.07

----Kirti Nagar----

	venue	freq
0	Pizza Place	0.4
1	Convenience Store	0.2
2	Fish & Chips Shop	0.2
3	Bakery	0.2
4	ATM	0.0

----Krishna Nagar----

	venue	freq
0	Pizza Place	0.50
1	Fast Food Restaurant	0.25
2	Park	0.25
3	ATM	0.00
4	Office	0.00

----Lado Sarai----

venue freq
0 Shopping Mall 0.33
1 Golf Course 0.17
2 Nightclub 0.17
3 Furniture / Home Store 0.17
4 BBQ Joint 0.17

----Lajpat Nagar 1----

venue freq
0 Music Store 0.1
1 Cosmetics Shop 0.1
2 Cocktail Bar 0.1
3 Coffee Shop 0.1
4 Asian Restaurant 0.1

----Lajpat Nagar 2----

venue freq
0 Pizza Place 0.14
1 Fast Food Restaurant 0.09
2 Donut Shop 0.09
3 Market 0.09
4 Café 0.09

----Lajpat Nagar 4----

venue freq
0 Café 0.22
1 Market 0.22
2 Indie Movie Theater 0.11
3 Indian Restaurant 0.11
4 Movie Theater 0.11

----Lawrence Road----

venue freq
0 Gastropub 0.14
1 Department Store 0.14
2 Light Rail Station 0.14
3 Shopping Mall 0.14
4 Moving Target 0.14

----Laxmi Nagar----

venue freq
0 Pizza Place 0.25
1 Snack Place 0.25
2 Arcade 0.25
3 Multiplex 0.25
4 ATM 0.00

----Le Meridien, Janpath----

venue freq
0 Hotel 0.26
1 Indian Restaurant 0.16
2 Chinese Restaurant 0.11

3	Restaurant	0.11
4	Nightclub	0.05

----Lemon Tree Premier, Aerocity----

	venue	freq
0	Hotel	0.33
1	Buffet	0.07
2	Coffee Shop	0.07
3	Light Rail Station	0.04
4	Indian Restaurant	0.04

----Living Style Mall, Jasola----

	venue	freq
0	Indian Restaurant	0.33
1	Pizza Place	0.17
2	Fast Food Restaurant	0.17
3	Bakery	0.17
4	Soccer Stadium	0.17

----Lodhi Colony----

	venue	freq
0	Indian Restaurant	0.21
1	English Restaurant	0.07
2	Flea Market	0.07
3	Sandwich Place	0.07
4	Asian Restaurant	0.07

----Lodhi Road----

	venue	freq
0	Shopping Mall	0.06
1	Pedestrian Plaza	0.06
2	History Museum	0.06
3	Temple	0.06
4	Café	0.06

----MG Road----

	venue	freq
0	Electronics Store	0.25
1	Furniture / Home Store	0.25
2	Indian Restaurant	0.25
3	Art Museum	0.25
4	ATM	0.00

----MGF Metropolitan Mall, Saket----

	venue	freq
0	Indian Restaurant	0.11
1	Clothing Store	0.07
2	Lounge	0.07
3	Bar	0.07
4	Café	0.05

----MGM Club, Daryaganj----

	venue	freq
0	Indian Restaurant	0.33
1	Restaurant	0.33
2	Hotel	0.17
3	Road	0.17
4	Other Great Outdoors	0.00

----Mahipalpur----

	venue	freq
0	Hotel	0.31
1	Plaza	0.08
2	American Restaurant	0.08
3	Shoe Store	0.08
4	Spa	0.08

----Maidens Hotel, Civil Lines----

	venue	freq
0	Smoke Shop	0.14
1	Italian Restaurant	0.14
2	Chinese Restaurant	0.14
3	Indian Restaurant	0.14
4	Café	0.14

----Majnu ka Tila----

	venue	freq
0	Asian Restaurant	0.33
1	Tibetan Restaurant	0.11
2	Bus Station	0.11
3	Coffee Shop	0.11
4	Restaurant	0.11

----Malviya Nagar----

	venue	freq
0	Coffee Shop	0.22
1	Donut Shop	0.11
2	Indian Restaurant	0.11
3	Café	0.11
4	Sandwich Place	0.11

----Mandi House----

	venue	freq
0	Theater	0.20
1	Bakery	0.13
2	Art Gallery	0.13
3	Indian Restaurant	0.13
4	Café	0.13

----Mathura Road----

	venue	freq
0	Breakfast Spot	0.25
1	Light Rail Station	0.25

2 Indian Sweet Shop 0.25
3 Indian Restaurant 0.25
4 Other Great Outdoors 0.00

----Mayapuri Phase 2----

venue freq
0 Garden 0.33
1 Restaurant 0.33
2 Food Truck 0.33
3 ATM 0.00
4 Office 0.00

----Mayur Vihar Phase 1----

venue freq
0 Pizza Place 0.33
1 Gym / Fitness Center 0.33
2 Indian Restaurant 0.33
3 ATM 0.00
4 Office 0.00

----Mayur Vihar Phase 2----

venue freq
0 Wings Joint 0.2
1 Juice Bar 0.2
2 Café 0.2
3 Ice Cream Shop 0.2
4 Sandwich Place 0.2

----Mayur Vihar Phase 3----

venue freq
0 Hotel 1.0
1 Other Great Outdoors 0.0
2 Museum 0.0
3 Music Store 0.0
4 Music Venue 0.0

----Mehrauli----

venue freq
0 Thai Restaurant 0.33
1 Bar 0.22
2 Italian Restaurant 0.11
3 Lounge 0.11
4 Historic Site 0.11

----Metro Walk Mall, Rohini----

venue freq
0 Asian Restaurant 0.2
1 Theme Park 0.2
2 Pizza Place 0.2
3 Shopping Mall 0.2
4 Fast Food Restaurant 0.2

----Model Town 1----

	venue	freq
0	Pool Hall	0.25
1	Food Truck	0.25
2	Playground	0.25
3	Convenience Store	0.25
4	Music Store	0.00

----Model Town 2----

	venue	freq
0	Donut Shop	0.12
1	Chinese Restaurant	0.12
2	Pizza Place	0.12
3	Fast Food Restaurant	0.12
4	Track Stadium	0.12

----Model Town 3----

	venue	freq
0	Indian Restaurant	0.33
1	Park	0.33
2	Chinese Restaurant	0.33
3	ATM	0.00
4	Other Great Outdoors	0.00

----Moments Mall, Kirti Nagar----

	venue	freq
0	Donut Shop	0.1
1	Fast Food Restaurant	0.1
2	Café	0.1
3	Metro Station	0.1
4	Moving Target	0.1

----Moti Bagh----

	venue	freq
0	South Indian Restaurant	0.2
1	Department Store	0.2
2	Pizza Place	0.2
3	Arcade	0.2
4	Café	0.2

----Moti Nagar----

	venue	freq
0	Fast Food Restaurant	0.25
1	Fish & Chips Shop	0.25
2	BBQ Joint	0.25
3	Fried Chicken Joint	0.25
4	ATM	0.00

----Mukherjee Nagar----

	venue	freq
0	Music Venue	0.5

1	Bakery	0.5
2	ATM	0.0
3	Other Great Outdoors	0.0
4	Music Store	0.0

----Munirka----

	venue	freq
0	Grocery Store	0.11
1	Indian Restaurant	0.11
2	Pizza Place	0.11
3	Department Store	0.11
4	Sandwich Place	0.11

----Najafgarh----

	venue	freq
0	Food & Drink Shop	0.33
1	Electronics Store	0.33
2	Clothing Store	0.33
3	Other Nightlife	0.00
4	Music Venue	0.00

----Naraina----

	venue	freq
0	Indian Restaurant	0.4
1	Café	0.4
2	Snack Place	0.2
3	ATM	0.0
4	Office	0.0

----Nehru Place----

	venue	freq
0	Lounge	0.07
1	Coffee Shop	0.07
2	Food	0.07
3	Fast Food Restaurant	0.07
4	Bengali Restaurant	0.04

----Netaji Subhash Place----

	venue	freq
0	Fast Food Restaurant	0.16
1	Indian Restaurant	0.16
2	Coffee Shop	0.11
3	Shopping Mall	0.11
4	Diner	0.05

----New Friends Colony----

	venue	freq
0	Café	0.19
1	Fast Food Restaurant	0.12
2	Diner	0.06
3	Indian Restaurant	0.06
4	Pizza Place	0.06

----Nizamuddin----

	venue	freq
0	Indian Restaurant	0.22
1	Mughlai Restaurant	0.11
2	Pizza Place	0.11
3	Garden	0.11
4	Historic Site	0.11

----Okhla Phase 1----

	venue	freq
0	Electronics Store	0.33
1	Cosmetics Shop	0.33
2	Business Service	0.33
3	ATM	0.00
4	Other Nightlife	0.00

----Okhla Phase 2----

	venue	freq
0	Hotel	1.0
1	Other Great Outdoors	0.0
2	Museum	0.0
3	Music Store	0.0
4	Music Venue	0.0

----PVR Anupam Complex----

	venue	freq
0	Convenience Store	0.12
1	Electronics Store	0.12
2	Multiplex	0.12
3	Pizza Place	0.12
4	Tea Room	0.12

----Pacific Mall, Tagore Garden----

	venue	freq
0	Donut Shop	0.11
1	Multiplex	0.11
2	Coffee Shop	0.11
3	Restaurant	0.11
4	Fast Food Restaurant	0.11

----Paharganj----

	venue	freq
0	Hotel	0.38
1	Indian Restaurant	0.10
2	Restaurant	0.08
3	Café	0.05
4	Hostel	0.05

----Palam----

	venue	freq
--	-------	------

0	Bar	1.0
1	ATM	0.0
2	Other Great Outdoors	0.0
3	Music Store	0.0
4	Music Venue	0.0

----Palate of Delhi, Chanakyapuri----

	venue	freq
0	Golf Course	0.25
1	Bakery	0.25
2	Sake Bar	0.25
3	Campground	0.25
4	ATM	0.00

----Panchsheel Park----

	venue	freq
0	Pizza Place	0.25
1	Event Space	0.25
2	American Restaurant	0.25
3	Business Service	0.25
4	ATM	0.00

----Pandara Road Market----

	venue	freq
0	Indian Restaurant	0.32
1	Smoke Shop	0.11
2	Ice Cream Shop	0.11
3	Snack Place	0.05
4	Cafeteria	0.05

----Pandav Nagar----

	venue	freq
0	Dessert Shop	0.22
1	Convenience Store	0.11
2	Moving Target	0.11
3	Bus Station	0.11
4	Park	0.11

----Paschim Vihar----

	venue	freq
0	Sandwich Place	0.11
1	Accessories Store	0.11
2	Pizza Place	0.11
3	Coffee Shop	0.11
4	Multicuisine Indian Restaurant	0.11

----Patparganj----

	venue	freq
0	Indian Restaurant	0.25
1	Dessert Shop	0.12
2	Gift Shop	0.12
3	Pizza Place	0.12

4 Shopping Mall 0.12

----Piccadily Hotel, Janakpuri----

venue freq

0 Chinese Restaurant 0.14
1 Sandwich Place 0.14
2 Indian Restaurant 0.14
3 Fast Food Restaurant 0.14
4 BBQ Joint 0.07

----Pitampura----

venue freq

0 Snack Place 0.25
1 Light Rail Station 0.25
2 Indian Restaurant 0.25
3 Market 0.25
4 Other Great Outdoors 0.00

----Pragati Maidan----

venue freq

0 Pool 0.25
1 Historic Site 0.12
2 History Museum 0.12
3 Hockey Arena 0.12
4 Art Museum 0.12

----Prashant Vihar----

venue freq

0 Indian Restaurant 0.43
1 Pizza Place 0.29
2 Multiplex 0.14
3 Airport 0.14
4 Office 0.00

----Preet Vihar----

venue freq

0 Arcade 0.14
1 Chinese Restaurant 0.14
2 Ice Cream Shop 0.14
3 Pizza Place 0.14
4 Fast Food Restaurant 0.14

----Premier Inn, Shalimar Bagh----

venue freq

0 Hotel 0.33
1 Shipping Store 0.33
2 Café 0.33
3 Multiplex 0.00
4 Music Store 0.00

----Pride Plaza Hotel, Aerocity----

	venue	freq
0	Hotel	0.36
1	Buffet	0.08
2	Coffee Shop	0.08
3	Hotel Bar	0.04
4	Indian Restaurant	0.04

----Punjabi Bagh----

	venue	freq
0	Donut Shop	0.17
1	Garden Center	0.17
2	Fast Food Restaurant	0.17
3	Coffee Shop	0.17
4	Indian Restaurant	0.17

----Qutab Institutional Area----

	venue	freq
0	Restaurant	0.25
1	Indian Restaurant	0.25
2	Hotel	0.12
3	Moroccan Restaurant	0.12
4	Modern European Restaurant	0.12

----R K Puram----

	venue	freq
0	Electronics Store	0.12
1	Restaurant	0.12
2	Shopping Mall	0.12
3	Thai Restaurant	0.12
4	Park	0.12

----Race Course----

	venue	freq
0	Racetrack	0.25
1	Gym / Fitness Center	0.25
2	Business Service	0.25
3	History Museum	0.25
4	ATM	0.00

----Radisson Blu Plaza Delhi, Mahipalpur----

	venue	freq
0	Hotel	0.43
1	Spa	0.14
2	American Restaurant	0.14
3	Indian Restaurant	0.14
4	Thai Restaurant	0.14

----Radisson Blu, Paschim Vihar----

	venue	freq
0	Hotel	0.33
1	Fast Food Restaurant	0.17
2	Indian Restaurant	0.17

3	Coffee Shop	0.17
4	Food Truck	0.17

----Rajendra Place----

	venue	freq
0	Fast Food Restaurant	0.2
1	Pizza Place	0.2
2	Bakery	0.1
3	Bar	0.1
4	Coffee Shop	0.1

----Rajinder Nagar----

	venue	freq
0	Sandwich Place	0.11
1	Market	0.11
2	Sporting Goods Shop	0.11
3	Gym / Fitness Center	0.11
4	Café	0.11

----Rajouri Garden----

	venue	freq
0	Diner	0.1
1	Indian Restaurant	0.1
2	Dessert Shop	0.1
3	Fast Food Restaurant	0.1
4	Café	0.1

----Rohini----

	venue	freq
0	Department Store	0.2
1	Light Rail Station	0.2
2	Shopping Mall	0.2
3	Indian Restaurant	0.2
4	Fast Food Restaurant	0.2

----Roseate House, Aerocity----

	venue	freq
0	Hotel	0.33
1	Buffet	0.07
2	Coffee Shop	0.07
3	Light Rail Station	0.04
4	Indian Restaurant	0.04

----SDA----

	venue	freq
0	Café	0.27
1	Beer Garden	0.09
2	Market	0.09
3	Coffee Shop	0.09
4	Chinese Restaurant	0.09

----Safdarjung----

	venue	freq
0	Coffee Shop	0.15
1	Greek Restaurant	0.08
2	Sandwich Place	0.08
3	Park	0.08
4	Mexican Restaurant	0.08

----Sainik Farms----

	venue	freq
0	Asian Restaurant	0.25
1	Pub	0.25
2	Mediterranean Restaurant	0.25
3	Bakery	0.25
4	Other Great Outdoors	0.00

----Saket----

	venue	freq
0	Pizza Place	0.14
1	Indian Restaurant	0.14
2	Electronics Store	0.07
3	Fast Food Restaurant	0.07
4	Café	0.07

----Sangam Courtyard, RK Puram----

	venue	freq
0	Coffee Shop	0.15
1	Multiplex	0.15
2	Restaurant	0.08
3	Park	0.08
4	Asian Restaurant	0.08

----Sarita Vihar----

	venue	freq
0	Café	0.50
1	Deli / Bodega	0.25
2	Park	0.25
3	ATM	0.00
4	Other Great Outdoors	0.00

----Sarojini Nagar----

	venue	freq
0	Fast Food Restaurant	0.4
1	Pizza Place	0.2
2	Snack Place	0.2
3	Indian Restaurant	0.2
4	ATM	0.0

----Satyaniketan----

	venue	freq
0	Café	0.43
1	Bistro	0.14

2 Plaza 0.14
3 Snack Place 0.14
4 Deli / Bodega 0.14

----Sector 15, Dwarka----

venue freq
0 Light Rail Station 0.5
1 Train Station 0.5
2 ATM 0.0
3 Other Great Outdoors 0.0
4 Museum 0.0

----Select Citywalk Mall, Saket----

venue freq
0 Indian Restaurant 0.12
1 Clothing Store 0.07
2 Lounge 0.07
3 Bar 0.07
4 Café 0.07

----Shahdara----

venue freq
0 Park 0.33
1 Chocolate Shop 0.33
2 Mobile Phone Shop 0.33
3 ATM 0.00
4 Other Great Outdoors 0.00

----Shahpur Jat----

venue freq
0 Bar 0.22
1 Australian Restaurant 0.11
2 Furniture / Home Store 0.11
3 Chinese Restaurant 0.11
4 Stadium 0.11

----Shakarpur----

venue freq
0 Diner 0.2
1 Coffee Shop 0.2
2 Gym 0.2
3 Shopping Mall 0.2
4 Snack Place 0.2

----Shalimar Bagh----

venue freq
0 Pizza Place 0.17
1 Gym / Fitness Center 0.17
2 Convenience Store 0.17
3 Coffee Shop 0.17
4 Bakery 0.17

----Shangri La's - Eros hotel, Janpath----

	venue	freq
0	Hotel	0.21
1	Spa	0.12
2	Indian Restaurant	0.12
3	Restaurant	0.08
4	Chinese Restaurant	0.08

----Shanti Niketan Marg----

	venue	freq
0	Pizza Place	0.25
1	Convenience Store	0.25
2	Café	0.25
3	Gourmet Shop	0.25
4	ATM	0.00

----Sheikh Sarai----

	venue	freq
0	Thai Restaurant	0.38
1	Historic Site	0.12
2	Whisky Bar	0.12
3	Italian Restaurant	0.12
4	Café	0.12

----Sheraton New Delhi Hotel, Saket----

	venue	freq
0	Indian Restaurant	0.13
1	Clothing Store	0.08
2	Bar	0.06
3	American Restaurant	0.05
4	Donut Shop	0.05

----South Extension 1----

	venue	freq
0	Coffee Shop	0.25
1	Indian Restaurant	0.25
2	Pizza Place	0.17
3	Chinese Restaurant	0.08
4	Clothing Store	0.08

----South Extension 2----

	venue	freq
0	Coffee Shop	0.24
1	Indian Restaurant	0.18
2	Market	0.12
3	Pizza Place	0.12
4	Jewelry Store	0.06

----Southern Park Mall, Saket----

	venue	freq
0	Indian Restaurant	0.11

1	Lounge	0.07
2	Café	0.07
3	Bar	0.07
4	Clothing Store	0.07

----Spark Mall, Kamla Nagar----

	venue	freq
0	Fast Food Restaurant	0.12
1	Breakfast Spot	0.12
2	Donut Shop	0.08
3	Indian Restaurant	0.08
4	Pizza Place	0.08

----Star City Mall, Mayur Vihar Phase 1----

	venue	freq
0	Hotel	0.29
1	Department Store	0.12
2	Restaurant	0.12
3	Asian Restaurant	0.06
4	Light Rail Station	0.06

----Subhash Nagar----

	venue	freq
0	Multiplex	0.25
1	Skating Rink	0.25
2	Park	0.25
3	Sculpture Garden	0.25
4	Northeast Indian Restaurant	0.00

----Sunder Nagar----

	venue	freq
0	Indian Restaurant	0.23
1	Hotel	0.15
2	Italian Restaurant	0.15
3	Gaming Cafe	0.08
4	Snack Place	0.08

----T3 Domestic Arrival, Aerocity----

	venue	freq
0	Coffee Shop	0.33
1	Pizza Place	0.11
2	Café	0.11
3	Airport Terminal	0.11
4	Airport Service	0.11

----TDI Mall, Rajouri Garden----

	venue	freq
0	Fast Food Restaurant	0.17
1	Café	0.13
2	Dessert Shop	0.09
3	Shopping Mall	0.09
4	Indian Restaurant	0.09

----Tagore Garden----

	venue	freq
0	Train Station	0.1
1	Market	0.1
2	BBQ Joint	0.1
3	Ice Cream Shop	0.1
4	Park	0.1

----Taj Vivanta, Khan Market----

	venue	freq
0	Café	0.17
1	Coffee Shop	0.09
2	Chinese Restaurant	0.06
3	Bar	0.06
4	Asian Restaurant	0.06

----The Ashok, Chanakyapuri----

	venue	freq
0	Nightclub	0.20
1	Indian Restaurant	0.20
2	Smoke Shop	0.07
3	Italian Restaurant	0.07
4	Chinese Restaurant	0.07

----The Claridges, Aurangzeb Road----

	venue	freq
0	Hotel	0.2
1	Hotel Bar	0.1
2	Mediterranean Restaurant	0.1
3	Smoke Shop	0.1
4	North Indian Restaurant	0.1

----The Grand New Delhi, Vasant Kunj----

	venue	freq
0	Coffee Shop	0.12
1	Fast Food Restaurant	0.08
2	Clothing Store	0.08
3	Asian Restaurant	0.04
4	Chinese Restaurant	0.04

----The Imperial, Janpath----

	venue	freq
0	Hotel	0.12
1	Indian Restaurant	0.12
2	Café	0.09
3	Italian Restaurant	0.09
4	Coffee Shop	0.06

----The India Mall, New Friends Colony----

	venue	freq
--	-------	------

0	Café	0.16
1	Fast Food Restaurant	0.11
2	Indian Restaurant	0.11
3	Diner	0.05
4	Middle Eastern Restaurant	0.05

----The Lalit New Delhi, Barakhamba Road----

	venue	freq
--	-------	------

0	Indian Restaurant	0.33
1	Bakery	0.33
2	Asian Restaurant	0.17
3	Hotel Bar	0.17
4	Music Store	0.00

----The Leela Ambience Convention Hotel----

	venue	freq
--	-------	------

0	Hotel	0.25
1	Indian Restaurant	0.25
2	Park	0.25
3	Café	0.25
4	Other Great Outdoors	0.00

----The Leela Palace, Chanakyapuri----

	venue	freq
--	-------	------

0	Indian Restaurant	0.18
1	Pool	0.09
2	Spa	0.09
3	Seafood Restaurant	0.09
4	Northeast Indian Restaurant	0.09

----The Lodhi, Lodhi Road----

	venue	freq
--	-------	------

0	Hotel	0.12
1	Chinese Restaurant	0.12
2	Indian Restaurant	0.12
3	Hotel Bar	0.06
4	Spa	0.06

----The Park, Connaught Place----

	venue	freq
--	-------	------

0	Hotel	0.20
1	Spa	0.08
2	Mediterranean Restaurant	0.08
3	Italian Restaurant	0.08
4	Chinese Restaurant	0.04

----The Suryaa New Delhi, New Friends Colony----

	venue	freq
--	-------	------

0	Café	0.14
1	Indian Restaurant	0.10
2	Fast Food Restaurant	0.10
3	Diner	0.05

4 Nightclub 0.05

----The Taj Mahal Hotel, Mansingh Road----

	venue	freq
--	-------	------

0	Jewelry Store	0.14
1	Lounge	0.14
2	Chinese Restaurant	0.14
3	Restaurant	0.14
4	Indian Restaurant	0.14

----The Taj Palace Hotel, Chanakyapuri----

	venue	freq
--	-------	------

0	Hotel	0.12
1	Indian Restaurant	0.12
2	Café	0.09
3	Chinese Restaurant	0.06
4	Lounge	0.03

----The Uppal, Aerocity----

	venue	freq
--	-------	------

0	Hotel	0.75
1	Indian Restaurant	0.25
2	Other Great Outdoors	0.00
3	Museum	0.00
4	Music Store	0.00

----The Village Restaurant Complex, Khel Gaon Marg----

	venue	freq
--	-------	------

0	Bar	0.14
1	Australian Restaurant	0.07
2	Hotel	0.07
3	Coffee Shop	0.07
4	Theater	0.07

----Tilak Nagar----

	venue	freq
--	-------	------

0	Fast Food Restaurant	0.6
1	Restaurant	0.2
2	Café	0.2
3	ATM	0.0
4	Other Great Outdoors	0.0

----Tughlakabad Institutional Area----

	venue	freq
--	-------	------

0	Hotel	0.2
1	Chinese Restaurant	0.2
2	Steakhouse	0.2
3	Restaurant	0.2
4	Market	0.2

----Uday Park----

venue freq
0 Music Venue 0.17
1 Pizza Place 0.17
2 Market 0.17
3 Metro Station 0.17
4 Park 0.17

----Unity One Mall, Janakpuri----

venue freq
0 Sandwich Place 0.22
1 Coffee Shop 0.11
2 Light Rail Station 0.11
3 Metro Station 0.11
4 Indian Restaurant 0.11

----Uttam Nagar----

venue freq
0 Indian Restaurant 1.0
1 ATM 0.0
2 Other Great Outdoors 0.0
3 Museum 0.0
4 Music Store 0.0

----V3S Mall, Laxmi Nagar----

venue freq
0 Food & Drink Shop 0.08
1 Pizza Place 0.08
2 Gift Shop 0.08
3 Liquor Store 0.08
4 Gym 0.08

----Vasant Kunj----

venue freq
0 Chinese Restaurant 0.14
1 Bar 0.14
2 Pizza Place 0.14
3 Spa 0.14
4 Sandwich Place 0.14

----Vasant Square Mall, Vasant Kunj----

venue freq
0 Sandwich Place 0.11
1 Vegetarian / Vegan Restaurant 0.11
2 Bank 0.11
3 Bar 0.11
4 Café 0.11

----Vasant Vihar----

venue freq
0 Café 0.15
1 Restaurant 0.07
2 Fast Food Restaurant 0.07

3 Chinese Restaurant 0.07
4 Coffee Shop 0.07

----Vasundhara Enclave----

	venue	freq
0	Bakery	1.0
1	ATM	0.0
2	Other Great Outdoors	0.0
3	Music Store	0.0
4	Music Venue	0.0

----Vijay Nagar----

	venue	freq
0	Café	0.17
1	Bakery	0.08
2	Cheese Shop	0.08
3	Snack Place	0.08
4	Coffee Shop	0.08

----Vikas Marg----

	venue	freq
0	Dessert Shop	0.25
1	Burger Joint	0.25
2	Burrito Place	0.25
3	Café	0.25
4	Portuguese Restaurant	0.00

----Vikaspuri----

	venue	freq
0	Pizza Place	0.25
1	Beer Garden	0.25
2	Fast Food Restaurant	0.25
3	Ice Cream Shop	0.25
4	ATM	0.00

----Vivek Vihar----

	venue	freq
0	Juice Bar	0.4
1	Athletics & Sports	0.2
2	Smoke Shop	0.2
3	Bed & Breakfast	0.2
4	ATM	0.0

----Wazirpur----

	venue	freq
0	Mobile Phone Shop	1.0
1	ATM	0.0
2	Office	0.0
3	Museum	0.0
4	Music Store	0.0

----West End Mall, Janak Puri----

	venue	freq
0	Sandwich Place	0.13
1	Fast Food Restaurant	0.13
2	Chinese Restaurant	0.13
3	Indian Restaurant	0.13
4	Coffee Shop	0.07

----West Gate Mall, Rajouri Garden----

	venue	freq
0	Fast Food Restaurant	0.18
1	Café	0.12
2	Shopping Mall	0.12
3	American Restaurant	0.06
4	Pizza Place	0.06

----West Patel Nagar----

	venue	freq
0	Pizza Place	0.25
1	Sporting Goods Shop	0.25
2	Fast Food Restaurant	0.25
3	Indian Restaurant	0.25
4	ATM	0.00

----Worldmark 1, Aerocity----

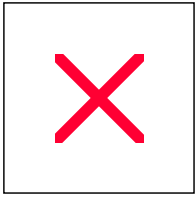
	venue	freq
0	Hotel	0.30
1	Buffet	0.07
2	Coffee Shop	0.07
3	Bed & Breakfast	0.07
4	Light Rail Station	0.03

----Yusuf Sarai----

	venue	freq
0	Coffee Shop	0.18
1	Indian Restaurant	0.18
2	Bar	0.09
3	Chinese Restaurant	0.09
4	Hotel	0.09

----ibis New Delhi, Aerocity----

	venue	freq
0	Hotel	0.36
1	Buffet	0.07
2	Coffee Shop	0.07
3	Light Rail Station	0.04
4	Indian Restaurant	0.04



##Cluster Locality

Run k-means to cluster the Locality into 5 clusters.

set number of clusters

kclusters = 5

New_Delhi_clustering = New_Delhi_grouped.drop('Locality', 1)

run k-means clustering

kmeans = KMeans(n_clusters=kclusters, random_state=0).fit(New_Delhi_clustering)

check cluster labels generated for each row in the dataframe

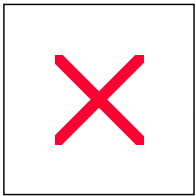
kmeans.labels_[0:10]

kmeans.labels_.shape

(240,)

[34]:

[36]:



add clustering labels

New_Delhi_merged = df_final.head(240)

New_Delhi_merged['Cluster Labels'] = kmeans.labels_

merge New_Delhi_grouped with df_Chinese to add latitude/longitude for each Locality

New_Delhi_merged = New_Delhi_merged.join(Locality_venues_sorted.set_index('Locality'), on='Locality')

New_Delhi_merged.head()

/home/jupyterlab/conda/envs/python/lib/python3.6/site-packages/ipykernel_launcher.py:3: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame.

Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy

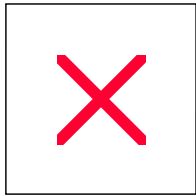
This is separate from the ipykernel package so we can avoid doing imports until

[36]:

	Locality	Lat	Lng	No_of_Restaurant	Cusines	Agg_Rating	Comments	No_of_Votes	Cluster Labels
0	ARSS Mall, Paschim Vihar	28.668945	77.101544	1	North Indian, South Indian, Chinese, Mithai, F...	3.100000	Average	117	4
1	Adchini	28.537063	77.197808	13	Fast Food, North Indian, Seafood, Continental,...	3.292308	Average, Good, Poor, Very Good	1560	4
2	Aditya Mega Mall, Karkardooma	28.656131	77.301266	4	Finger Food, North Indian, Mughlai, Pizza, Fas...	3.275000	Average, Good	434	4
3	Aerocity	28.553077	77.104270	2	Fast Food, Italian, Pizza, North Indian, Conti...	3.200000	Average	59	2

	Locality	Lat	Lng	No_of_Restaurant	Cusines	Agg_Rating	Comments	No_of_Votes	Cluster Labels
4	Aggarwal City Mall, Pitampura	28.690020	77.134650	3	North Indian, Chinese, Street Food, Mithai, No...	3.033333	Average	126	4

[37]:



```
# create final map
map_clusters = folium.Map(location=[latitude, longitude], zoom_start=10)

# set color scheme for the clusters
x = np.arange(kclusters)
ys = [i+x+(i*x)**2 for i in range(kclusters)]
#colors_array = cm.rainbow(np.linspace(0, 1, len(ys)))
#rainbow = [colors.rgb2hex(i) for i in colors_array]
colors = ['red', 'green', 'blue', 'yellow', 'orange']

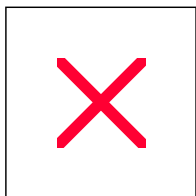
# add markers to the map
markers_colors = []
for lat, lon, poi, cluster in zip(New_Delhi_merged['Lat'], New_Delhi_merged['Lng'], New_Delhi_merged['Locality'],
New_Delhi_merged['Cluster Labels']):
    label = folium.Popup(str(poi) + ' Cluster ' + str(cluster), parse_html=True)
    folium.CircleMarker(
        [lat, lon],
        radius=5,
        popup=label,
        color='black',
        fill=True,
        fill_color=colors[cluster],
        fill_opacity=0.7).add_to(map_clusters)
```

map_clusters

[37]:

Make this Notebook Trusted to load map: File -> Trust Notebook

[38]:



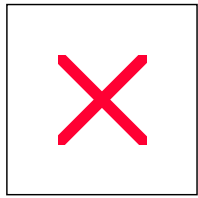
Examine Clusters

```
## Cluster 1
New_Delhi_merged.loc[New_Delhi_merged['Cluster Labels'] == 0, New_Delhi_merged.columns[[1] + list(range(5,
New_Delhi_merged.shape[1]))]]
```

[38]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
137	28.708865	3.008696	Average, Good	187	0
151	28.592153	3.200000	Average	14	0

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
177	28.511482	2.750000	Average, Poor	107	0
228	28.596073	3.052941	Average, Good	305	0



Examine Clusters

Cluster 2

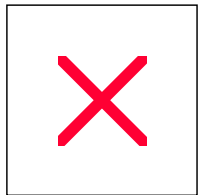
```
New_Delhi_merged.loc[New_Delhi_merged['Cluster Labels'] == 1, New_Delhi_merged.columns[[1] + list(range(5, New_Delhi_merged.shape[1]))]]
```

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
5	28.700516	3.040000	Average, Good, Poor	594	1
11	28.562580	3.750000	Average, Good, Very Good	875	1
15	28.691136	3.390909	Average, Good, Very Good	485	1
22	28.654105	3.085714	Average	80	1
28	28.650254	3.166667	Average, Good	1217	1
36	28.692546	3.480000	Average, Good	948	1
48	28.630149	2.950000	Average, Good, Poor	471	1
50	28.645084	3.235000	Average, Good, Poor, Very Good	2578	1
57	28.699837	3.376471	Average, Good, Very Good	2460	1
73	28.643036	3.000000	Average	7	1
87	28.582031	3.117143	Average, Good, Poor, Very Good	2140	1
90	28.642755	3.450000	Average, Good	322	1
94	28.538153	3.117143	Average, Good, Poor	3642	1
95	28.681154	3.453448	Average, Good, Very Good	5267	1
101	28.667644	3.300000	Average	132	1
103	28.652501	3.080000	Average, Good, Poor	2196	1
104	28.656263	3.097619	Average, Good	965	1
107	28.569394	3.252381	Average, Good	1525	1
110	28.635391	3.040385	Average, Good, Poor, Very Good	2442	1
130	28.724100	3.133333	Average	325	1
132	28.706295	3.256000	Average, Good, Very Good	1717	1
136	28.658244	3.240000	Average, Good	567	1

[39]:

[39]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
142	28.693270	3.519149	Average, Good, Very Good	7642	1
152	28.544464	3.525000	Average, Very Good	231	1
157	28.629505	2.600000	Average	67	1
161	28.639872	3.134483	Average, Good, Poor	1481	1
170	28.643757	3.575000	Average, Good	2879	1
181	28.571849	3.316667	Average, Good	472	1
196	28.680905	3.320000	Average, Good	286	1
219	28.638846	3.048148	Average, Good	290	1
222	28.628988	3.260000	Average, Good, Poor	239	1
225	28.524070	3.686364	Average, Good, Very Good	4001	1
226	28.525054	3.322222	Average, Good	1940	1
231	28.637492	3.062264	Average, Good, Poor	1253	1
234	28.630044	2.750000	Average, Poor	238	1
236	28.648177	3.675000	Average, Good, Very Good	876	1



Examine Clusters

Cluster 3

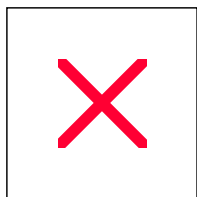
New_Delhi_merged.loc[New_Delhi_merged['Cluster Labels'] == 2, New_Delhi_merged.columns[[1] + list(range(5, New_Delhi_merged.shape[1]))]]

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
3	28.553077	3.200000	Average	59	2
10	28.554807	3.000000	Average	4	2
12	28.641698	3.050000	Average	17	2
19	28.548827	2.700000	Average	9	2
25	28.495624	2.700000	Average	23	2
35	28.590297	3.350000	Average, Good	127	2
56	28.570246	4.050000	Average, Excellent	1949	2
60	28.665829	4.000000	Very Good	756	2
69	28.550327	3.300000	Average	30	2
70	28.590654	3.550000	Average, Good	302	2

[40]:

[40]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
71	28.641003	3.650000	Average, Good	367	2
72	28.705700	3.350000	Average, Good	278	2
74	28.621267	3.416667	Average, Good	475	2
83	28.552895	3.300000	Average	15	2
111	28.618772	3.666667	Average, Good, Very Good	725	2
112	28.552036	3.500000	Good	26	2
119	28.545033	2.960000	Average, Good	259	2
128	28.608252	2.945000	Average, Good	406	2
146	28.535040	3.175000	Average, Good	60	2
149	28.642910	2.996552	Average, Good, Poor, Very Good	2850	2
162	28.725814	3.050000	Average	50	2
163	28.552711	3.100000	Average	7	2
168	28.543814	3.950000	Average, Excellent, Good, Very Good	1225	2
169	28.667261	3.200000	Average	76	2
174	28.550802	3.250000	Average, Good	34	2
189	28.620715	3.880000	Average, Good, Very Good	626	2
197	28.592724	2.985714	Average	560	2
205	28.600171	3.714286	Average, Good, Very Good	1733	2
210	28.661133	3.775000	Good, Very Good	460	2
213	28.623619	3.466667	Average, Good	1141	2
217	28.535183	3.066667	Average	37	2
220	28.523519	3.700000	Good	281	2
237	28.550257	3.220000	Average, Good	77	2
239	28.551398	3.100000	Average	9	2



Cluster 4

```
New_Delhi_merged.loc[New_Delhi_merged['Cluster Labels']==3 , New_Delhi_merged.columns[[1] + list(range(5,
New_Delhi_merged.shape[1]))]]
```

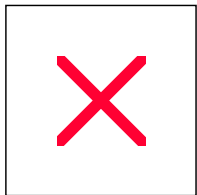
Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
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[41]:

[41]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
6	28.527088	3.117391	Average, Good, Poor	1012	3
7	28.541298	3.425000	Average, Good, Very Good	2460	3
8	28.555599	3.800000	Average, Very Good	2411	3
9	28.659870	3.281481	Average, Good	1309	3
16	28.630440	3.208333	Average, Good, Poor	1779	3
...
230	28.658041	3.400000	Average	19	3
232	28.667344	3.077273	Average, Good, Poor	939	3
233	28.695096	3.050000	Average	86	3
235	28.652978	3.500000	Good	178	3
238	28.559928	3.075000	Average, Good	923	3

115 rows × 5 columns



[42]:

Cluster 5

```
New_Delhi_merged.loc[New_Delhi_merged['Cluster Labels'] == 4, New_Delhi_merged.columns[[1] + list(range(5, New_Delhi_merged.shape[1]))]]
```

[42]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
0	28.668945	3.100000	Average	117	4
1	28.537063	3.292308	Average, Good, Poor, Very Good	1560	4
2	28.656131	3.275000	Average, Good	434	4
4	28.690020	3.033333	Average	126	4
13	28.690182	3.090000	Average, Good, Poor	971	4
14	28.693969	3.378571	Average, Good	2343	4
18	28.696302	3.300000	Average, Good	415	4
23	28.656414	3.358182	Average, Good, Very Good	6668	4
24	28.649658	3.800000	Average, Excellent, Good, Very Good	1410	4
33	28.657388	3.320000	Average, Good	636	4
42	28.576161	2.983333	Average, Good, Poor	542	4
43	28.643320	3.287500	Average, Good, Poor, Very Good	2570	4

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
44	28.574288	3.496154	Average, Good, Poor, Very Good	15579	4
46	28.573241	3.225000	Average, Good, Poor	1106	4
47	28.681582	3.046875	Average, Good, Poor	1224	4
49	28.602169	2.900000	Average	7	4
55	28.617102	4.200000	Very Good	3010	4
59	28.654883	3.053846	Average, Good	262	4
61	28.668181	3.400000	Average	33	4
65	28.556980	3.272414	Average, Good, Poor	5243	4
66	28.699373	3.252174	Average, Good	973	4
76	28.576785	3.200000	Average, Good	143	4
77	28.631728	3.060714	Average, Good, Poor, Very Good	1650	4
84	28.630942	3.122000	Average, Good, Poor, Very Good	1738	4
85	28.648885	3.561111	Average, Good, Very Good	7411	4
92	28.584294	3.100000	Average	35	4
97	28.662972	3.533333	Average, Very Good	293	4
98	28.651527	3.490909	Average, Good, Very Good	3222	4
99	28.648795	3.238028	Average, Good, Poor, Very Good	7282	4
113	28.541242	2.984615	Average	817	4
114	28.584615	3.303571	Average, Good, Poor, Very Good	6480	4
116	28.486576	2.950000	Average	8	4
118	28.646549	3.200000	Average	20	4
124	28.521760	4.200000	Very Good	278	4
126	28.602860	2.973214	Average, Good, Poor	1831	4
133	28.708185	3.344444	Average, Good, Very Good	568	4
140	28.627959	3.004167	Average	326	4
144	28.591092	3.200000	Average, Good, Poor	993	4
153	28.608055	3.860000	Average, Good, Very Good	7978	4
156	28.630734	3.185714	Average, Good	244	4
158	28.700027	3.157333	Average, Good, Poor	3974	4
160	28.712975	3.066667	Average	121	4
165	28.539464	2.900000	Average	14	4
173	28.714176	3.352083	Average, Good, Poor, Very Good	4514	4

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels
193	28.569983	3.133333	Average, Good, Poor	988	4
194	28.566717	3.303125	Average, Good, Very Good	2411	4
199	28.601779	3.700000	Average, Good, Very Good	964	4
204	28.597038	3.533333	Average, Good, Very Good	902	4
209	28.631362	3.537500	Average, Good	1666	4
211	28.579556	3.780000	Good	709	4
223	28.619954	2.905714	Average, Poor	242	4

Conclusion

Chanakyapuri, Pitampura, Safdarjung are some of the best neighborhoods for Chinese cuisine.

Pancsheel park, Nehru place have the best Chinese Resturant.

Cannaught place, Rajouri garden, Malviya nagar are the best places for edible person.

Greater kailash, Feroze shah road, Saket have best resturants in New Delhi.

Cluster 1: It is most recommended for Indian Restaurants.

Cluster 2: It is most recommended for Hotels and nightclub.

Cluster 3 and Cluster 5: It is most recommended for Fast food.

Cluster 4: It is most recommended for the cafe and pizza.