

Capstone Project – The Battle of Neighbourhoods

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, English is also spoken as a formal language within businesses and government agencies. Over last decades it is continuously grow because of the city's important role in government and commercial business.

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 , as well as traditional categories such as gujarathi,North-indian,South- indian,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 :

1.What is best location in New Delhi City for South Indian Cuisine ? 2.Which areas have large number of South Indian Resturant Market ? 3.Which all areas have less number of resturant ? 4.Which is the best place to stay if I prefer South Indian Cuisine ? 5.What places are have best restaurant in New Delhi?

Data: For this project we need the following data :

New Delhi Resturants data that contains list Locality, Resturant name,Rating along with their latitude and longitude. Data source : Zomato kaggle dataset 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 Description : By using this api we will get all the venues in each neighborhood.

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 resturant to find the best places. Visualize the Ranking of neighborhoods using folium library(python)

Installing and importing the required Libraries

In [1]:

```
import pandas as pd
import numpy as np
import requests # library to handle requests
from pandas.io.json import json_normalize # tranform JSON file into a pandas dataframe
# Matplotlib and associated plotting modules
import matplotlib.cm as cm
import matplotlib.colors as colors
# import k-means from clustering stage
from sklearn.cluster import KMeans

!conda install -c conda-forge folium=0.5.0 --yes # uncomment this line if you haven't completed the Foursquare API lab
import folium # map rendering library
! pip install geocoder
import geocoder
print('All required libraries are imported Successfully')
```

```
usage: conda-script.py [-h] [-V] command ...
conda-script.py: error: unrecognized arguments: # uncomment this line if you haven't completed the Foursquare API lab
```

Requirement already satisfied: geocoder in c:\programdata\anaconda3\lib\site-packages (1.38.1)
Requirement already satisfied: six in c:\programdata\anaconda3\lib\site-packages (from geocoder) (

```

1.12.0)
Requirement already satisfied: ratelim in c:\programdata\anaconda3\lib\site-packages (from
geocoder) (0.1.6)
Requirement already satisfied: future in c:\programdata\anaconda3\lib\site-packages (from
geocoder) (0.17.1)
Requirement already satisfied: click in c:\programdata\anaconda3\lib\site-packages (from geocoder)
(7.0)
Requirement already satisfied: requests in c:\programdata\anaconda3\lib\site-packages (from
geocoder) (2.21.0)
Requirement already satisfied: decorator in c:\programdata\anaconda3\lib\site-packages (from
ratelim->geocoder) (4.4.0)
Requirement already satisfied: chardet<3.1.0,>=3.0.2 in c:\programdata\anaconda3\lib\site-packages
(from requests->geocoder) (3.0.4)
Requirement already satisfied: certifi>=2017.4.17 in c:\programdata\anaconda3\lib\site-packages
(from requests->geocoder) (2019.3.9)
Requirement already satisfied: urllib3<1.25,>=1.21.1 in c:\programdata\anaconda3\lib\site-packages
(from requests->geocoder) (1.24.1)
Requirement already satisfied: idna<2.9,>=2.5 in c:\programdata\anaconda3\lib\site-packages (from
requests->geocoder) (2.8)
All required libraries are imported Successfully

```

Read the zomato resturant data from csv file

In [11]:

```

df =
pd.read_csv('https://raw.githubusercontent.com/rohandharap23/Capstone_Project_Battle_of_Neighborhoo
master/zomato.csv', encoding='ISO-8859-1')
df.head()

```

Out[11]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines	...	Currency
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.027535	14.565443	French, Japanese, Desserts	...	Botswana Pula(P
1	6304287	Izakaya Kikufuji	162	Makati City	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
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	121.056831	14.581404	Seafood, Asian, Filipino, Indian	...	Botswana Pula(P
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.056475	14.585318	Japanese, Sushi	...	Botswana Pula(P
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.057508	14.584450	Japanese, Korean	...	Botswana Pula(P

5 rows x 21 columns

In [12]:

```
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()
```

Out[12]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines	...	Currency	Has Table booking
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
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
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
3	18384127	Dilli Ka Dhaba	1	New Delhi	66 A, Ground Floor, Sri Aurobindo Marg, Adchin...	Adchini	Adchini, New Delhi	77.198033	28.537547	South Indian, North Indian	...	Indian Rupees(Rs.)	No
4	582	Govardhan	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

5 rows × 21 columns



Data Cleaning:

Remove the unwanted columns and rows from dataset

In [13]:

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

In [14]:

```
df_Res = df_Res[df_Res['Aggregate rating'] !=0.0]
```

In [15]:

```
df_Res.head()
```

Out[15]:

	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	3.0	Average	1

4	Govardhan	Adchini	77.196924	28.535523	South Indian, North Indian,	Aggregate rating	3.4	Average Rating text	238
	Restaurant Name	Locality	Longitude	Latitude	Chinese Cuisines	Aggregate rating	3.4	Average Rating text	Votes
5	Mezbaan Grills	Adchini	77.198122	28.538134	Mughlai	3.1	Average	8	

Created map to show the restaurant cluters

In [16]:

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

X = df_Res['Latitude']
Y = df_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']
df_Res['Cluster'] = clusters

for latitude, longitude, Locality, cluster in zip(df_Res['Latitude'], df_Res['Longitude'], df_Res['Locality'], df_Res['Cluster']):
    label = folium.Popup(Locality, parse_html=True)
    folium.CircleMarker(
        [latitude, longitude],
        radius=5,
        popup=label,
        color='black',
        fill=True,
        fill_color=colors[cluster],
        fill_opacity=0.7).add_to(New_Delhi_Rest)

New_Delhi_Rest
```

Out[16]:

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

The image may not be visible on Github .I have added in file section named as ndls_restaurant.jpg



In [17]:

```
df_Res.head()
```

```
Out[17]:
```

	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?

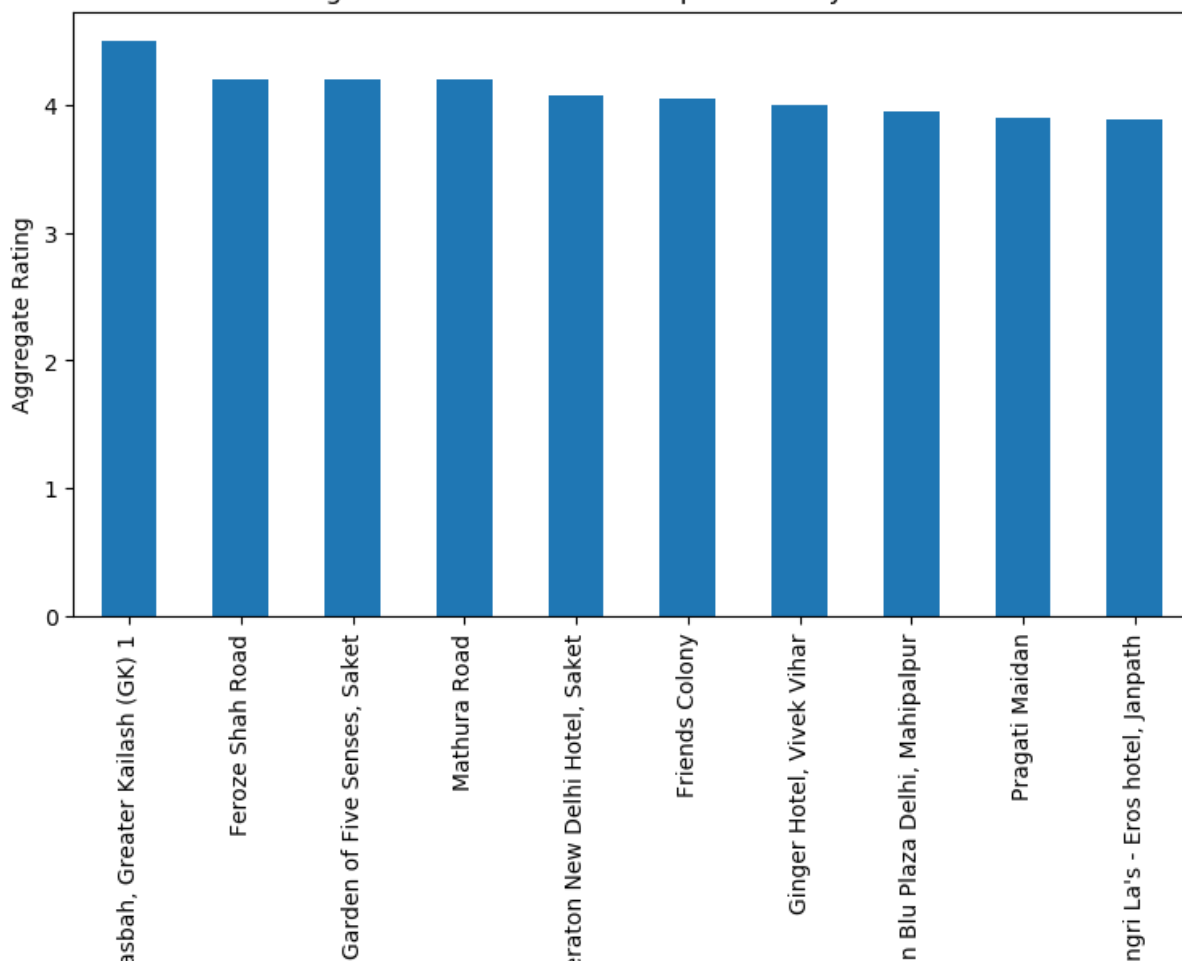
```
In [19]:
```

```
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
df_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 highest rated resturant in top 10 locality of New Delhi



Resturant Locality in New Delhi

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

What places are have worst restaurants in New Delhi?

In [20]:

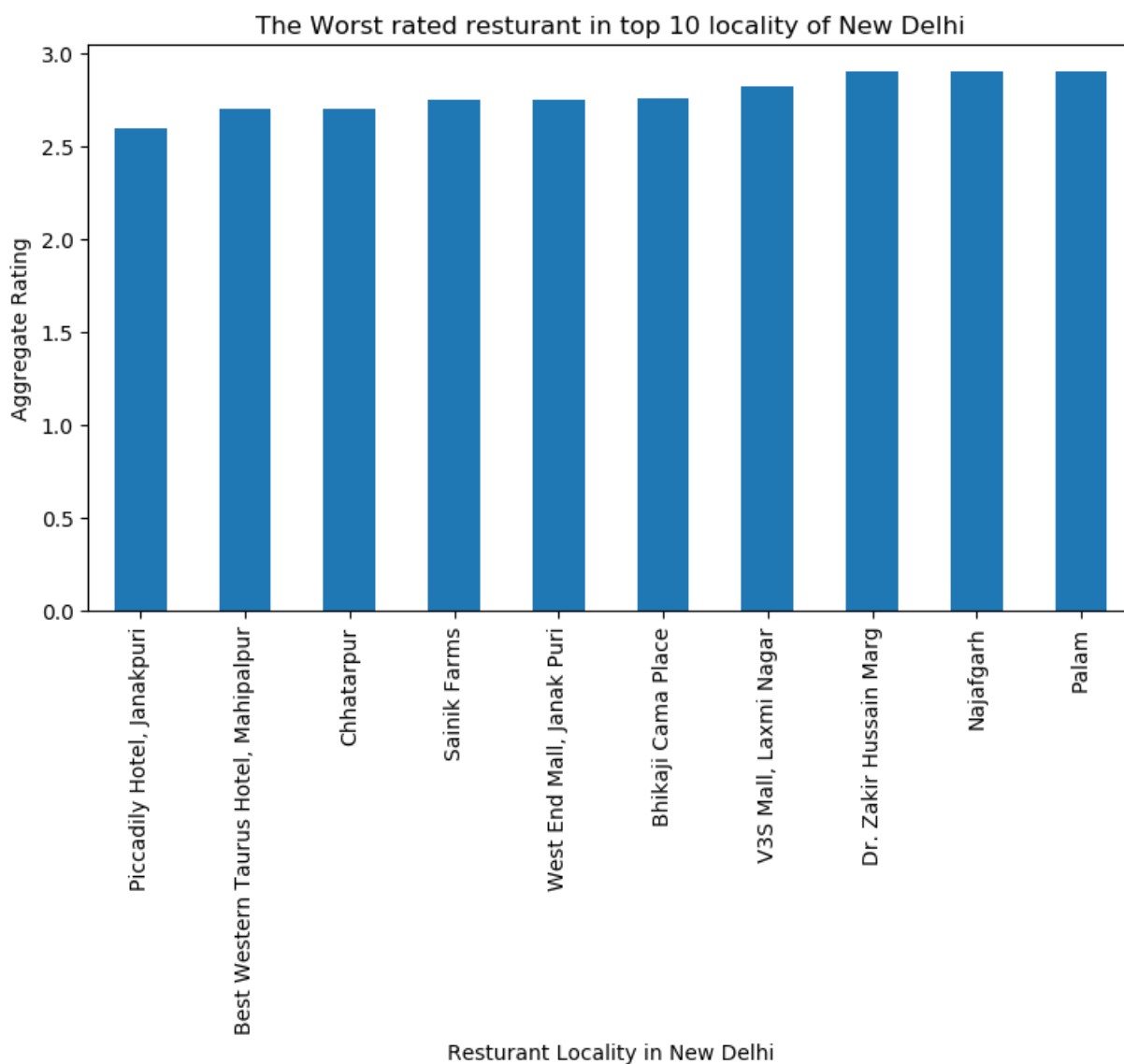
```
import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The Worst rated resturant in top 10 locality of New Delhi')
#On x-axis

#giving a bar plot

df_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 restarants are available in Piccadily Hotel, Janakpuri.

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

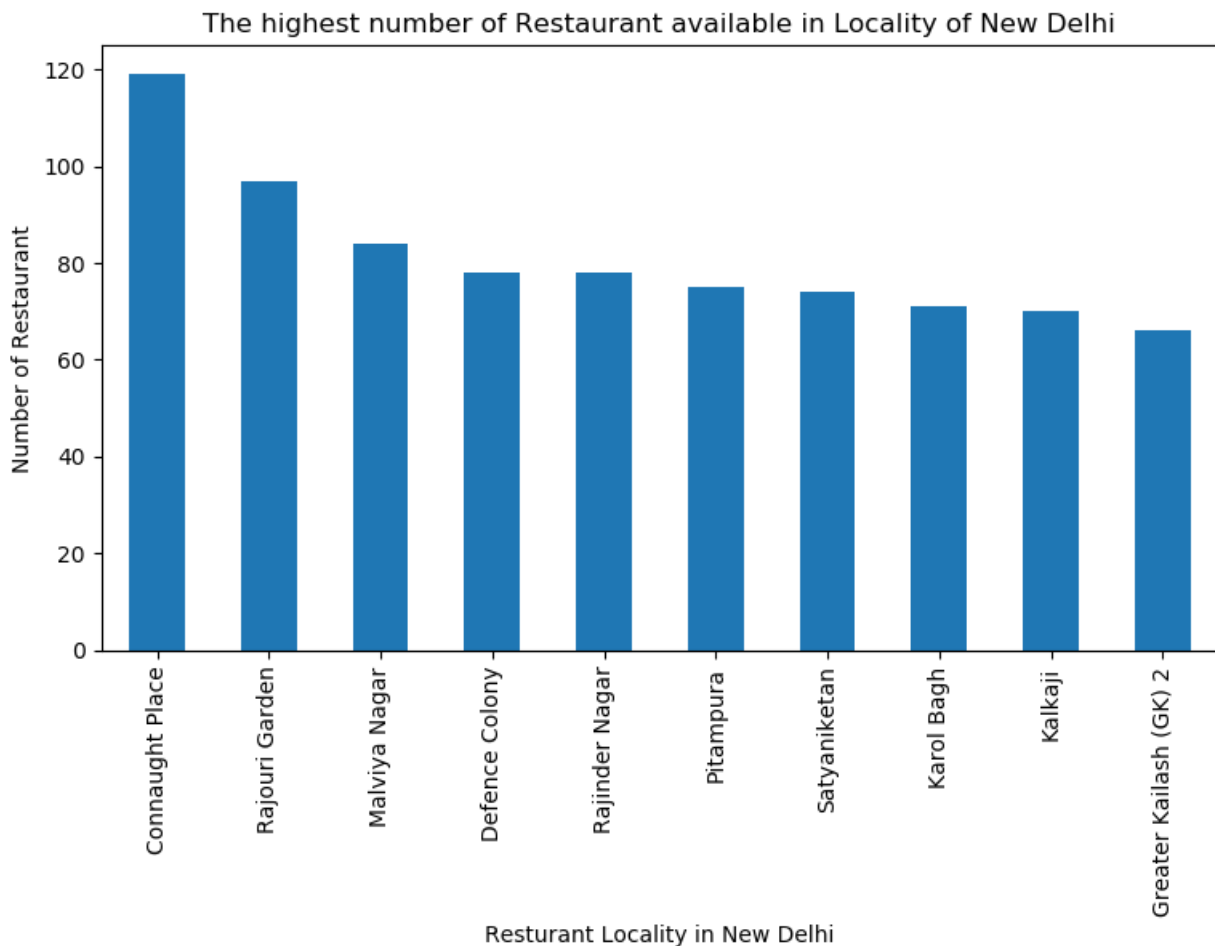
In [21]:

```
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
df_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?

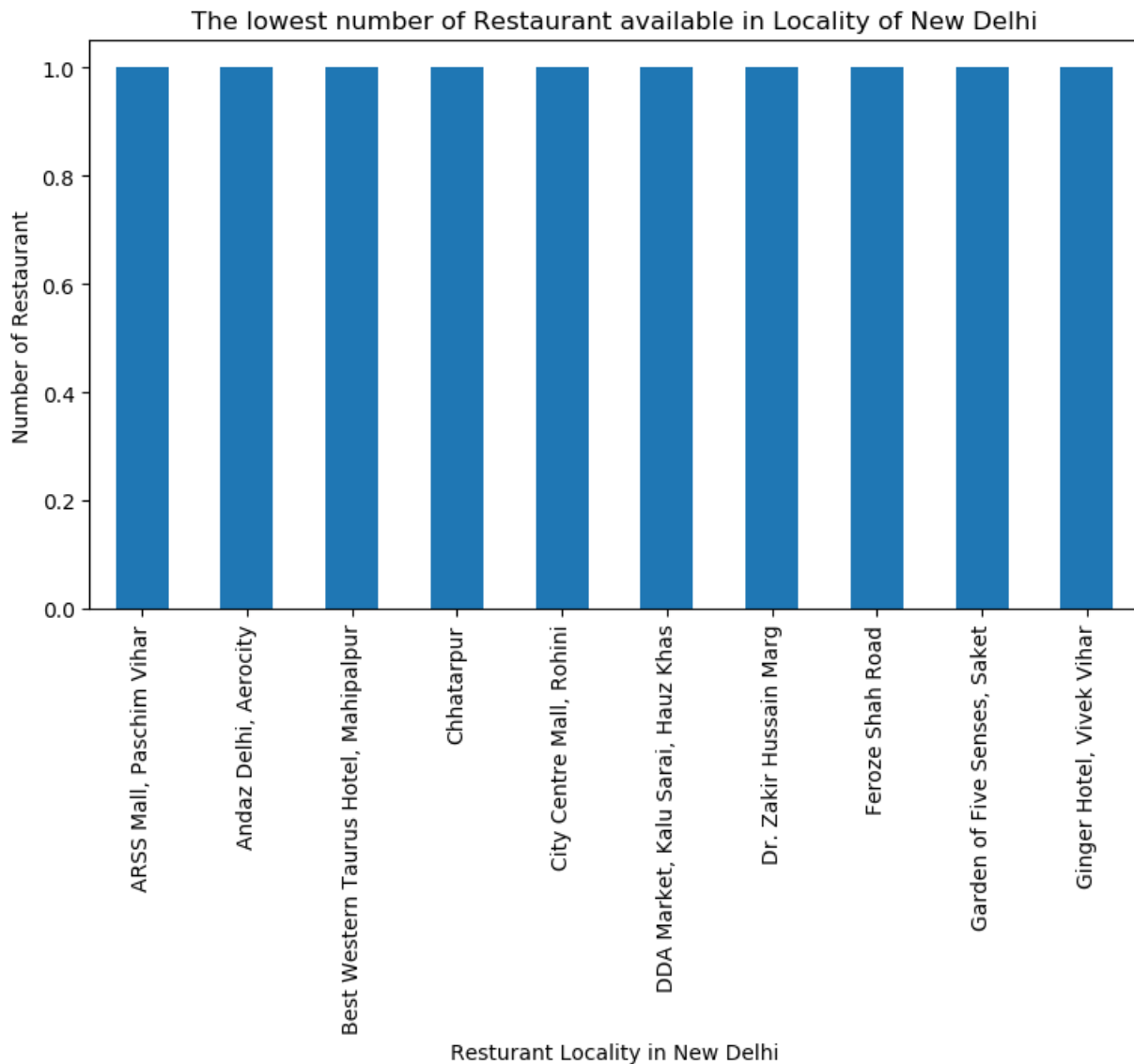
In [22]:

```
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
df_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 South Indian restaurant in New Delhi city

In [23]:

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

#giving a bar plot
df_Res[df_Res['Cuisines'].str.startswith('South Indian')].groupby('Locality')['Restaurant Name'].count().nlargest(5).plot(kind='bar')
```



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

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



Karol Bagh is the best locality for south indian restaurant

Which places are the best South Indian resturants in New Delhi?

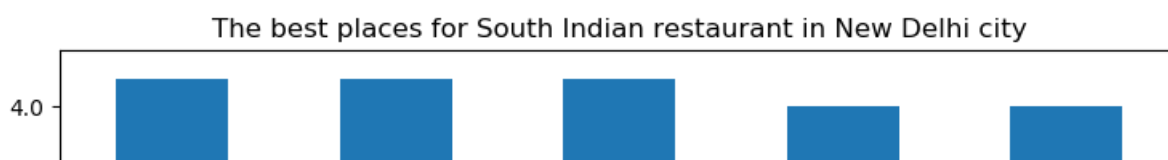
In [24]:

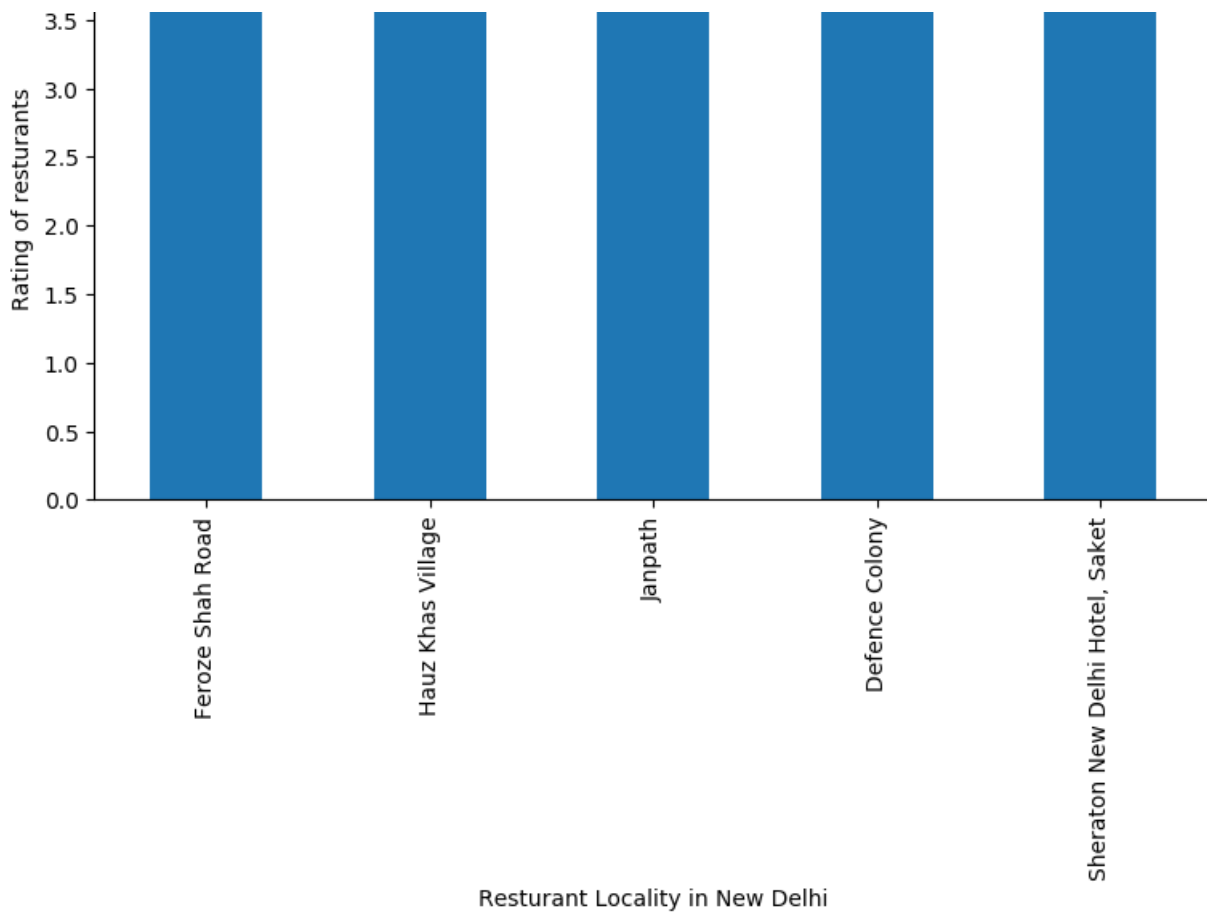
```
import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The best places for South Indian restaurant in New Delhi city')
#On x-axis

#giving a bar plot
df_Res[df_Res['Cuisines'].str.startswith('South Indian')].groupby('Locality')['Aggregate rating'].mean().nlargest(5).plot(kind='bar')

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

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





Feroze Shah Road is best South Indian resturants

Data transformation:

Based on Locality grouping the data

In [26]:

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

In [27]:

```
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()
```

Out [27]:

	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	77.301288	No_of_Restaurant	Finger Food, North Indian, Mughlai, Pizza, Fast...	Agg_Rating	Comments	No_of_Votes
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

In [28]:

```
df_final.shape
```

Out[28]:

```
(240, 8)
```

Define Foursquare Credentials and Version

In [29]:

```
## Define Foursquare Credentials and Version
CLIENT_ID = '2MEOSI4ZX4YACAIUPUU1V0P4X5FP5IPWF5HIBEX2OUHBID03' # Foursquare ID
CLIENT_SECRET = 'FX0IHQM5LCMD1UIYEMV50003QTNFLX0W1TCW41U4GGU55IYP' # Foursquare Secret
VERSION = '20180605' # Foursquare API version

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

Your credentials:

CLIENT_ID: 2MEOSI4ZX4YACAIUPUU1V0P4X5FP5IPWF5HIBEX2OUHBID03

CLIENT_SECRET:FX0IHQM5LCMD1UIYEMV50003QTNFLX0W1TCW41U4GGU55IYP

Creating a function to repeat the same process to all the Locality in New De

lhi

In [30]:

```
## 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']['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)

```

Find the venues in all New Delhi Locality

In [33]:

```

# 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

In [34]:

```
new_Delhi_venues.head()
```

Out[34]:

	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
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

In [35]:

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

Out[35]:

	Locality	Locality Latitude	Locality Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
	ARSS Mall, Paschim Vihar	9	9	9	9	9	9
	Adchini	6	6	6	6	6	6
	Aditya Mega Mall, Karkardooma	10	10	10	10	10	10
	Aerocity	7	7	7	7	7	7

Aerocity	Locality Latitude	Locality Longitude	Venue Latitude	Venue Longitude	Venue Category
Aggarwal City Mall, Pitampura	6	6	6	6	6
Aggarwal City Plaza, Connaught Place	6	6	6	6	6
Alaknanda	5	5	5	5	5
Ambience Mall, Vasant Kunj	46	46	46	46	46
Anand Lok	11	11	11	11	11
Anand Vihar	8	8	8	8	8
Andaz Delhi, Aerocity	24	24	24	24	24
Ansal Plaza Mall, Khel Gaon Marg	5	5	5	5	5
Asaf Ali Road	6	6	6	6	6
Ashok Vihar Phase 1	7	7	7	7	7
Ashok Vihar Phase 2	6	6	6	6	6
Ashok Vihar Phase 3	3	3	3	3	3
Barakhamba Road	14	14	14	14	14
Basant Lok Market, Vasant Vihar	26	26	26	26	26
Bellagio, Ashok Vihar Phase 2	6	6	6	6	6
Best Western Taurus Hotel, Mahipalpur	12	12	12	12	12
Bhikaji Cama Place	12	12	12	12	12
Chanakyapuri	5	5	5	5	5
Chander Nagar	1	1	1	1	1
Chandni Chowk	17	17	17	17	17
Chawri Bazar	6	6	6	6	6
Chhatarpur	6	6	6	6	6
Chittaranjan Park	4	4	4	4	4
City Centre Mall, Rohini	9	9	9	9	9
City Square Mall, Rajouri Garden	23	23	23	23	23
Civil Lines	5	5	5	5	5
...
The Lalit New Delhi, Barakhamba Road	6	6	6	6	6
The Leela Ambience Convention Hotel	5	5	5	5	5
The Leela Palace, Chanakyapuri	13	13	13	13	13
The Lodhi, Lodhi Road	14	14	14	14	14
The Park, Connaught Place	30	30	30	30	30
The Suryaa New Delhi, New Friends Colony	19	19	19	19	19
The Taj Mahal Hotel, Mansingh Road	7	7	7	7	7
The Taj Palace Hotel, Chanakyapuri	34	34	34	34	34
The Uppal, Aerocity	4	4	4	4	4
The Village Restaurant Complex, Khel Gaon Marg	13	13	13	13	13
Tilak Nagar	4	4	4	4	4
Tughlakabad Institutional Area	5	5	5	5	5
Uday Park	6	6	6	6	6
Unity One Mall, Janakpuri	8	8	8	8	8
Uttam Nagar	3	3	3	3	3
V3S Mall, Laxmi Nagar	16	16	16	16	16
Vasant Kunj	8	8	8	8	8
Vasant Square Mall, Vasant Kunj	10	10	10	10	10
Vasant Vihar	28	28	28	28	28
Vasundhara Enclave	2	2	2	2	2
Vijay Nagar	14	14	14	14	14
Vikas Marg	7	7	7	7	7

Vikasपुरी Vivek Vihar	Locality Latitude	Locality Longitude	Venue Latitude	Venue Longitude	Venue Category
West End Mall, Janak Puri	13	13	13	13	13
West Gate Mall, Rajouri Garden	15	15	15	15	15
West Patel Nagar	4	4	4	4	4
Worldmark 1, Aerocity	31	31	31	31	31
Yusuf Sarai	12	12	12	12	12
ibis New Delhi, Aerocity	31	31	31	31	31

239 rows × 6 columns

In [36]:

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

There are 207 uniques categories.

In [37]:

```
## Analyze Each Locality

# 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()
```

Out[37]:

	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Lounge	Airport Service	Airport Terminal	American Restaurant	...	Trail	Train Station	Turkish Restaurant
0	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0	...	0	0	0
1	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0	...	0	0	0
2	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0	...	0	0	0
3	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0	...	0	0	0
4	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0	...	0	0	0

5 rows × 208 columns

In [38]:

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

Out[38]:

	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Lounge	Airport Service	Airport Terminal	American Restaurant	...	Trail	Train Station
0	ARSS Mall, Paschim Vihar	0.111111	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
1	Adchini	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
2	Aditya Mega Mall, Karkardooma	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
3	Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.142857	0.0	0.142857	0.000000	...	0.0	0.000000
4	Aggarwal City Mall, Pitampura	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
5	Aggarwal City Plaza, Rohini	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
6	Alaknanda	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
7	Ambience Mall, Vasant Kunj	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
8	Anand Lok	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
9	Anand Vihar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
10	Andaz Delhi, Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
11	Ansal Plaza Mall, Khel Gaon Marg	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
12	Asaf Ali Road	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
13	Ashok Vihar Phase 1	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
14	Ashok Vihar Phase 2	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
15	Ashok Vihar Phase 3	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
16	Barakhamba Road	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
17	Basant Lok Market, Vasant Vihar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
18	Bellagio, Ashok Vihar Phase 2	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
19	Best Western Taurus Hotel, Mahipalpur	0.000000	0.083333	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
20	Bhikaji Cama Place	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
21	Chanakypuri	0.000000	0.000000	0.0	0.2	0.0	0.000000	0.0	0.000000	0.000000	...	0.2	0.000000
22	Chander Nagar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
23	Chandni Chowk	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.058824
24	Chawri Bazar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
25	Chhatarpur	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
26	Chittaranjan Park	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
27	City Centre Mall, Rohini	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
28	City Square Mall, Rajouri Garden	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.043478	...	0.0	0.000000
29	Civil Lines	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000

...
	The Leela Delhi, Barakhamba Road	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Lounge	Airport Service	Airport Terminal	American Restaurant	...	Trail	Train Station
209		0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
210	The Leela Ambience Convention Hotel	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
211	The Leela Palace, Chanakyapuri	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.076923
212	The Lodhi, Lodhi Road	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
213	The Park, Connaught Place	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
214	The Suryaa New Delhi, New Friends Colony	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.052632
215	The Taj Mahal Hotel, Mansingh Road	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
216	The Taj Palace Hotel, Chanakyapuri	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
217	The Uppal, Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
218	The Village Restaurant Complex, Khel Gaon Marg	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
219	Tilak Nagar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
220	Tughlakabad Institutional Area	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
221	Uday Park	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
222	Unity One Mall, Janakpuri	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
223	Uttam Nagar	0.666667	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
224	V3S Mall, Laxmi Nagar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
225	Vasant Kunj	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
226	Vasant Square Mall, Vasant Kunj	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
227	Vasant Vihar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
228	Vasundhara Enclave	0.500000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
229	Vijay Nagar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
230	Vikas Marg	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
231	Vikaspuri	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
232	Vivek Vihar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
233	West End Mall, Janak Puri	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
234	West Gate Mall, Rajouri Garden	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.066667	...	0.0	0.000000
235	West Patel Nagar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000
236	Worldmark 1, Aerocity	0.000000	0.032258	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.032258
237	Yusuf Sarai	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0	0.000000	0.000000	...	0.0	0.000000

238	ibis New Delhi Aerocity	0.000000	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Lounge	Airport Service	Airport Terminal	American Restaurant	...	Train Station
-----	-------------------------	----------	-------------------	-------------------	--------------------	---------	----------------	-----------------	------------------	---------------------	-----	---------------

239 rows × 208 columns

In [39]:

```
New_Delhi_grouped.shape
```

Out[39]:

(239, 208)

In [40]:

```
## 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	0.22
1	ATM	0.11
2	Market	0.11
3	Coffee Shop	0.11
4	Chinese Restaurant	0.11

----Adchini----

	venue	freq
0	Café	0.33
1	Indian Restaurant	0.17
2	Pub	0.17
3	Parsi Restaurant	0.17
4	Restaurant	0.17

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

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

----Aerocity----

	venue	freq
0	Hotel	0.29
1	Coffee Shop	0.14
2	Fast Food Restaurant	0.14
3	Airport Lounge	0.14
4	Airport Terminal	0.14

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

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

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

	venue	freq
0	Pizza Place	0.17
1	Multiplex	0.17
2	Bus Station	0.17
3	Gym / Fitness Center	0.17
4	Fast Food Restaurant	0.17

----Alaknanda----

	venue	freq
0	Steakhouse	0.2
1	New American Restaurant	0.2
2	Coffee Shop	0.2
3	Food & Drink Shop	0.2
4	Market	0.2

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

	venue	freq
0	Coffee Shop	0.09
1	Fast Food Restaurant	0.07
2	Italian Restaurant	0.07
3	Café	0.07
4	Asian Restaurant	0.07

----Anand Lok----

	venue	freq
0	Stadium	0.18
1	Café	0.18
2	Dessert Shop	0.09
3	Golf Course	0.09
4	Music Venue	0.09

----Anand Vihar----

	venue	freq
0	Café	0.25
1	Dessert Shop	0.12
2	Burger Joint	0.12
3	Pharmacy	0.12
4	Convenience Store	0.12

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

	venue	freq
0	Hotel	0.38
1	Coffee Shop	0.08
2	Indian Restaurant	0.08
3	Restaurant	0.08
4	Buffet	0.04

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

	venue	freq
0	Department Store	0.2
1	Electronics Store	0.2
2	Karaoke Bar	0.2
3	Fast Food Restaurant	0.2
4	Japanese Restaurant	0.2

----Asaf Ali Road----

	venue	freq
0	Indian Restaurant	0.17
1	Hotel	0.17
2	Campground	0.17
3	Hostel	0.17
4	Theme Park	0.17

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

	venue	freq
0	Dessert Shop	0.14
1	Market	0.14

2	Pizza Place	0.14
3	BBQ Joint	0.14
4	Snack Place	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	Asian Restaurant	0.17
4	Coffee Shop	0.17

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

	venue	freq
0	South Indian Restaurant	0.33
1	Pizza Place	0.33
2	Garden	0.33
3	Movie Theater	0.00
4	Moving Target	0.00

----Barakhamba Road----

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

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

	venue	freq
0	Café	0.15
1	Restaurant	0.08
2	Chinese Restaurant	0.08
3	Coffee Shop	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	Asian Restaurant	0.17
4	Coffee Shop	0.17

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

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

----Bhikaji Cama Place----

	venue	freq
0	Hotel	0.17
1	Lounge	0.17
2	Breakfast Spot	0.08
3	Italian Restaurant	0.08
4	Chinese Restaurant	0.08

----Chanakyapuri----

	venue	freq
0	African Restaurant	0.2
1	Concert Hall	0.2
2	Park	0.2
3	Trail	0.2
4	Café	0.2

----Chander Nagar----

	venue	freq
0	Pizza Place	1.0
1	North Indian Restaurant	0.0
2	Moving Target	0.0
3	Mughlai Restaurant	0.0
4	Multicuisine Indian Restaurant	0.0

----Chandni Chowk----

	venue	freq
0	Indian Restaurant	0.29
1	Snack Place	0.24
2	Dessert Shop	0.12
3	Market	0.12
4	Paper / Office Supplies Store	0.06

----Chawri Bazar----

	venue	freq
0	Fast Food Restaurant	0.17
1	Indian Restaurant	0.17
2	Paper / Office Supplies Store	0.17
3	Light Rail Station	0.17
4	Snack Place	0.17

----Chhatarpur----

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

----Chittaranjan Park----

	venue	freq
0	Market	0.50
1	Park	0.25
2	Chinese Restaurant	0.25
3	Northeast Indian Restaurant	0.00
4	Mughlai Restaurant	0.00

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

	venue	freq
0	Shopping Mall	0.33
1	Department Store	0.22
2	Multiplex	0.11
3	Indian Restaurant	0.11
4	Café	0.11

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

	venue	freq
0	Fast Food Restaurant	0.17
1	Café	0.17
2	Indian Restaurant	0.13
3	Clothing Store	0.04
4	Nightclub	0.04

----Civil Lines----

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

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

	venue	freq
0	Café	0.16
1	Pizza Place	0.05
2	Hotel	0.05

3 Movie Theater 0.05
4 Sandwich Place 0.05

----Connaught Place----

	venue	freq
0	Indian Restaurant	0.14
1	Bar	0.09
2	Café	0.09
3	Chinese Restaurant	0.08
4	Coffee Shop	0.05

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

	venue	freq
0	Clothing Store	0.17
1	Pharmacy	0.17
2	American Restaurant	0.17
3	Café	0.17
4	Food Court	0.17

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

	venue	freq
0	Indian Restaurant	0.4
1	Pizza Place	0.2
2	Park	0.2
3	Hotel	0.2
4	North Indian Restaurant	0.0

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

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

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

	venue	freq
0	Hotel	0.38
1	Pizza Place	0.08
2	American Restaurant	0.08
3	Restaurant	0.08
4	Asian Restaurant	0.08

----D Mall, Netaji Subhash Place----

	venue	freq
0	Fast Food Restaurant	0.22
1	Indian Restaurant	0.17
2	Coffee Shop	0.11
3	Shopping Mall	0.11
4	Pizza Place	0.06

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

	venue	freq
0	Chinese Restaurant	0.25
1	Event Space	0.25
2	Coffee Shop	0.25
3	Nightclub	0.25
4	Office	0.00

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

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

----DLF Emporio Mall, Vasant Kunj----

	venue	freq
0	Coffee Shop	0.09
1	Fast Food Restaurant	0.07
2	Italian Restaurant	0.07
3	Café	0.07
4	Asian Restaurant	0.07

----DLF Place Mall, Saket----

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

----DLF Promenade Mall, Vasant Kunj----

	venue	freq
0	Coffee Shop	0.09
1	Fast Food Restaurant	0.07
2	Italian Restaurant	0.07
3	Café	0.07
4	Asian Restaurant	0.07

----DLF South Square, Sarojini Nagar----

	venue	freq
0	Indian Restaurant	0.25
1	Women's Store	0.17
2	Fast Food Restaurant	0.17
3	Market	0.08
4	Restaurant	0.08

----Daryaganj----

	venue	freq
0	Indian Restaurant	0.31
1	Hotel	0.15
2	Restaurant	0.15
3	Hostel	0.15
4	Road	0.08

----Defence Colony----

	venue	freq
0	Italian Restaurant	0.18
1	Indian Restaurant	0.18
2	Bakery	0.12
3	Market	0.06
4	Bar	0.06

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

	venue	freq
0	Café	0.33
1	Italian Restaurant	0.08
2	Light Rail Station	0.08
3	Restaurant	0.08
4	Coffee Shop	0.08

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

	venue	freq
0	Northeast Indian Restaurant	0.2
1	Indian Restaurant	0.2
2	Train Station	0.2
3	Restaurant	0.2
4	Market	0.2

----Dilshad Garden----

	venue	freq
0	Indian Restaurant	0.25
1	Gym	0.25
2	Clothing Store	0.25
3	Market	0.25

4 ATM 0.00

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

	venue	freq
0	Indian Restaurant	0.15
1	Sandwich Place	0.15
2	Chinese Restaurant	0.15
3	Restaurant	0.08
4	BBQ Joint	0.08

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

	venue	freq
0	Indian Restaurant	0.25
1	Italian Restaurant	0.17
2	Golf Course	0.17
3	Gaming Cafe	0.08
4	Café	0.08

----East Patel Nagar----

	venue	freq
0	Pizza Place	0.20
1	Hotel	0.13
2	Donut Shop	0.07
3	Bar	0.07
4	Coffee Shop	0.07

----East of Kailash----

	venue	freq
0	Coffee Shop	0.14
1	Fast Food Restaurant	0.14
2	Indie Movie Theater	0.14
3	Hot Dog Joint	0.14
4	Vegetarian / Vegan Restaurant	0.14

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

	venue	freq
0	Chinese Restaurant	0.07
1	Lounge	0.07
2	Coffee Shop	0.07
3	Fast Food Restaurant	0.07
4	Pizza Place	0.04

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

	venue	freq
0	Fast Food Restaurant	0.11
1	Coffee Shop	0.07
2	Lounge	0.07
3	Frozen Yogurt Shop	0.04
4	Bengali Restaurant	0.04

----Essex Farms----

	venue	freq
0	Coffee Shop	0.33
1	Event Space	0.33
2	Nightclub	0.33
3	ATM	0.00
4	Northeast Indian Restaurant	0.00

----Feroze Shah Road----

	venue	freq
0	Indian Restaurant	1.0
1	ATM	0.0
2	North Indian Restaurant	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

----Friends Colony----

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

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

----GTB Nagar----

	venue	freq
0	Pizza Place	0.5
1	Food Truck	0.5
2	Irani Cafe	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

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

	venue	freq
0	Coffee Shop	0.25
1	Italian Restaurant	0.12
2	Pub	0.12
3	Café	0.12
4	Asian Restaurant	0.12

----Geeta Colony----

	venue	freq
0	Burger Joint	1.0
1	ATM	0.0
2	Playground	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

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

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

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

	venue	freq
0	Pizza Place	0.2
1	Indian Restaurant	0.2
2	Ice Cream Shop	0.2
3	Food & Drink 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	Hotel	0.11
4	Ice Cream Shop	0.05

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

	venue	freq
0	Café	0.08
1	Italian Restaurant	0.08
2	Chinese Restaurant	0.08
3	Sandwich Place	0.08
4	Indian Restaurant	0.08

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

	venue	freq
0	Restaurant	0.14
1	Café	0.14
2	BBQ Joint	0.07
3	Food Court	0.07
4	Hotel	0.07

----Green Park----

	venue	freq
0	Indian Restaurant	0.21
1	Coffee Shop	0.17
2	Donut Shop	0.08
3	Pizza Place	0.08
4	Fast Food Restaurant	0.08

----Gujranwala Town----

	venue	freq
0	Snack Place	0.25
1	Indian Restaurant	0.25
2	Shopping Mall	0.25
3	Boutique	0.25
4	ATM	0.00

----Hauz Khas----

	venue	freq
0	Coffee Shop	0.13
1	Bar	0.09
2	Indian Restaurant	0.09
3	Fast Food Restaurant	0.09
4	Karaoke Bar	0.04

----Hauz Khas Village----

	venue	freq
0	Café	0.14
1	Indian Restaurant	0.10
2	Italian Restaurant	0.08
3	Restaurant	0.08
4	Bar	0.06

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

	venue	freq
0	Hotel	0.33
1	Buffet	0.06
2	Indian Restaurant	0.06
3	Bed & Breakfast	0.06
4	Coffee Shop	0.06

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

	venue	freq
0	Hotel	0.29
1	Restaurant	0.12
2	Pizza Place	0.06
3	American Restaurant	0.06
4	Bakery	0.06

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

	venue	freq
0	Indian Restaurant	0.29
1	Soccer Stadium	0.14
2	Movie Theater	0.14
3	Hotel	0.14
4	Hostel	0.14

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

	venue	freq
0	Plaza	0.14
1	Indian Restaurant	0.14
2	Bakery	0.14
3	Coffee Shop	0.14
4	Hotel	0.14

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

	venue	freq
0	Pizza Place	0.21

1	Hotel	0.14
2	Coffee Shop	0.07
3	Convenience Store	0.07
4	Bar	0.07

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

	venue	freq
0	Indian Restaurant	0.15
1	Hotel	0.15
2	Metro Station	0.06
3	Cocktail Bar	0.06
4	Italian Restaurant	0.06

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

	venue	freq
0	Lounge	0.18
1	Breakfast Spot	0.09
2	Italian Restaurant	0.09
3	Chinese Restaurant	0.09
4	Hotel	0.09

----INA----

	venue	freq
0	Northeast Indian Restaurant	0.25
1	Market	0.25
2	Indian Restaurant	0.25
3	Train Station	0.25
4	Moving Target	0.00

----IP Extension----

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

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

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

----ITO----

	venue	freq
0	Plaza	0.12
1	Café	0.12
2	Clothing Store	0.12
3	Historic Site	0.12
4	Performing Arts Venue	0.12

----India Gate----

	venue	freq
0	ATM	0.25
1	Indian Restaurant	0.25
2	Government Building	0.25
3	Music Venue	0.25
4	North Indian Restaurant	0.00

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

	venue	freq
0	Restaurant	0.14
1	Café	0.14
2	Chinese Restaurant	0.10
3	Ice Cream Shop	0.10
4	Pizza Place	0.10

----JNU----

	venue	freq
0	Clothing Store	0.25
1	Shopping Mall	0.25
2	Indian Restaurant	0.25
3	Café	0.25
4	Northeast Indian Restaurant	0.00

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

	venue	freq
0	Hotel	0.31
1	Buffet	0.07
2	Coffee Shop	0.07
3	Restaurant	0.07
4	Indian Restaurant	0.07

----Jail Road----

	venue	freq
0	Indian Restaurant	0.22
1	Fast Food Restaurant	0.11
2	Pizza Place	0.11
3	Indian Sweet Shop	0.11
4	Fried Chicken Joint	0.11

----Jama Masjid----

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

----Janakpuri----

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

----Jangpura----

	venue	freq
0	Food	0.17
1	Fast Food Restaurant	0.17
2	Sandwich Place	0.17
3	BBQ Joint	0.17
4	Chinese Restaurant	0.17

----Janpath----

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

----Jasola----

	venue	freq
0	Pizza Place	0.25
1	Restaurant	0.25
2	Café	0.25
3	Soccer Stadium	0.25
4	Nightclub	0.00

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

	venue	freq
0	Pizza Place	0.19
1	Fast Food Restaurant	0.12

1	Fast Food Restaurant	0.12
2	Hotel	0.12
3	Coffee Shop	0.06
4	Café	0.06

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

	venue	freq
0	Café	0.15
1	Restaurant	0.08
2	Chinese Restaurant	0.08
3	Coffee Shop	0.08
4	Pizza Place	0.08

----Jor Bagh----

	venue	freq
0	Metro Station	0.2
1	Indian Restaurant	0.2
2	Electronics Store	0.2
3	Record Shop	0.2
4	Bakery	0.2

----Kailash Colony----

	venue	freq
0	Indian Restaurant	0.12
1	Hotel	0.12
2	Bar	0.12
3	Snack Place	0.06
4	Bed & Breakfast	0.06

----Kalkaji----

	venue	freq
0	Fast Food Restaurant	0.2
1	Dessert Shop	0.1
2	Market	0.1
3	Farmers Market	0.1
4	Sandwich Place	0.1

----Kamla Nagar----

	venue	freq
0	Breakfast Spot	0.14
1	Fast Food Restaurant	0.14
2	Indian Restaurant	0.10
3	Coffee Shop	0.10
4	Chinese Restaurant	0.10

----Kapashera----

	venue	freq
0	ATM	0.25
1	Convenience Store	0.25
2	Food Truck	0.25
3	Food Court	0.25
4	North Indian Restaurant	0.00

----Karampura----

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

----Karkardooma----

	venue	freq
0	Pizza Place	0.25
1	Indian Restaurant	0.25
2	Food Truck	0.25
3	Train Station	0.25
4	Nightlife Spot	0.00

----Karol Bagh----

	venue	freq
0	Indian Restaurant	0.25
1	Fast Food Restaurant	0.19
2	Dessert Shop	0.06
3	Hotel	0.06
4	Restaurant	0.06

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

	venue	freq
0	Indian Restaurant	0.17
1	Café	0.17
2	Italian Restaurant	0.11
3	Pool	0.06
4	Market	0.06

----Kashmiri Gate----

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

----Khan Market----

	venue	freq
0	Café	0.17
1	Coffee Shop	0.09
2	Bar	0.07
3	Chinese Restaurant	0.07
4	Asian Restaurant	0.07

----Kirti Nagar----

	venue	freq
0	Department Store	0.2
1	Fish & Chips Shop	0.2
2	Convenience Store	0.2
3	Rental Car Location	0.2
4	Pizza Place	0.2

----Krishna Nagar----

	venue	freq
0	Pizza Place	0.67
1	Accessories Store	0.33
2	Italian Restaurant	0.00
3	North Indian Restaurant	0.00
4	Moving Target	0.00

----Lado Sarai----

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

----Lajpat Nagar 1----

	venue	freq
0	Indian Restaurant	0.22
1	Cocktail Bar	0.11
2	Coffee Shop	0.11
3	Neighborhood	0.11
4	Asian Restaurant	0.11

----Lajpat Nagar 2----

	venue	freq
0	Pizza Place	0.15
1	Fast Food Restaurant	0.10
2	Dessert Shop	0.10

2	Donut Shop	0.10
3	Café	0.10
4	Indian Restaurant	0.10

----Lajpat Nagar 4----

	venue	freq
0	Indian Restaurant	0.25
1	Market	0.17
2	Café	0.17
3	Fast Food Restaurant	0.08
4	Restaurant	0.08

----Lawrence Road----

	venue	freq
0	Department Store	0.2
1	Basketball Court	0.2
2	Light Rail Station	0.2
3	Market	0.2
4	Moving Target	0.2

----Laxmi Nagar----

	venue	freq
0	Office	0.25
1	Pizza Place	0.25
2	Arcade	0.25
3	Bakery	0.25
4	North Indian Restaurant	0.00

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

	venue	freq
0	Hotel	0.25
1	Indian Restaurant	0.15
2	Restaurant	0.10
3	Chinese Restaurant	0.10
4	Cocktail Bar	0.10

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

	venue	freq
0	Hotel	0.31
1	Buffet	0.07
2	Coffee Shop	0.07
3	Restaurant	0.07
4	Indian Restaurant	0.07

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

	venue	freq
0	Indian Restaurant	0.4
1	Pizza Place	0.2
2	Bakery	0.2
3	Soccer Stadium	0.2
4	Nightlife Spot	0.0

----Lodhi Colony----

	venue	freq
0	Indian Restaurant	0.15
1	Japanese Restaurant	0.08
2	Asian Restaurant	0.08
3	Shopping Mall	0.08
4	Café	0.08

----Lodhi Road----

	venue	freq
0	Restaurant	0.06
1	Asian Restaurant	0.06
2	History Museum	0.06
3	Chinese Restaurant	0.06
4	Temple	0.06

----MG Road----

	venue	freq
0	Furniture / Home Store	0.33
1	Indian Restaurant	0.33
2	Art Museum	0.33
3	ATM	0.00
4	North Indian Restaurant	0.00

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

	venue	freq
0	Indian Restaurant	0.10
1	Lounge	0.07
2	Bar	0.07
3	Clothing Store	0.07
4	Chinese Restaurant	0.06

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

	venue	freq
0	Restaurant	0.33
1	Indian Restaurant	0.33
2	Hotel	0.17
3	Road	0.17
4	Northeast Indian Restaurant	0.00

----Mahipalpur----

	venue	freq
0	Hotel	0.25
1	Plaza	0.08
2	American Restaurant	0.08
3	Shoe Store	0.08
4	Bed & Breakfast	0.08

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

	venue	freq
0	Indian Restaurant	0.17
1	Light Rail Station	0.17
2	Café	0.17
3	Hotel	0.17
4	Asian Restaurant	0.17

----Majnu ka Tila----

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

----Malviya Nagar----

	venue	freq
0	Coffee Shop	0.25
1	Donut Shop	0.12
2	Sandwich Place	0.12
3	Pizza Place	0.12
4	Café	0.12

----Mandi House----

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

----Mathura Road----

	venue	freq
0	Indian Sweet Shop	0.25
1	Indian Restaurant	0.25
2	Light Rail Station	0.25
3	Breakfast Spot	0.25

3	Breakfast Spot	0.25
4	ATM	0.00

----Mayapuri Phase 2----

	venue	freq
0	Garden	0.33
1	Food Truck	0.33
2	Restaurant	0.33
3	Nightlife Spot	0.00
4	Moving Target	0.00

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

	venue	freq
0	Pizza Place	0.33
1	Bistro	0.33
2	Indian Restaurant	0.33
3	North Indian Restaurant	0.00
4	Moving Target	0.00

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

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

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

	venue	freq
0	Hotel	1.0
1	ATM	0.0
2	North Indian Restaurant	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

----Mehrauli----

	venue	freq
0	Thai Restaurant	0.23
1	Bar	0.15
2	Lounge	0.08
3	Boutique	0.08
4	Monument / Landmark	0.08

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

	venue	freq
0	Theme Park	0.17
1	Fast Food Restaurant	0.17
2	Shopping Mall	0.17
3	Asian Restaurant	0.17
4	Clothing Store	0.17

----Model Town 1----

	venue	freq
0	Playground	0.2
1	Pool Hall	0.2
2	Convenience Store	0.2
3	Lake	0.2
4	Food Truck	0.2

----Model Town 2----

	venue	freq
0	Pizza Place	0.2
1	Donut Shop	0.2
2	Ice Cream Shop	0.2
3	Coffee Shop	0.2
4	Fast Food Restaurant	0.2

----Model Town 3----

	venue	freq
0	Historic Site	0.33
1	Indian Restaurant	0.33
2	Park	0.33
3	ATM	0.00
4	Moving Target	0.00

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

	venue	freq
0	Metro Station	0.17
1	Shopping Mall	0.17
2	Moving Target	0.08
3	Donut Shop	0.08
4	Train Station	0.08

----Moti Bagh----

	venue	freq
0	Department Store	0.25
1	Café	0.25
2	Pizza Place	0.25
3	South Indian Restaurant	0.25
4	Juice Bar	0.00

----Moti Nagar----

	venue	freq
0	Fried Chicken Joint	0.5
1	Metro Station	0.5
2	ATM	0.0
3	Movie Theater	0.0
4	Mughlai Restaurant	0.0

----Mukherjee Nagar----

	venue	freq
0	Ice Cream Shop	0.33
1	Gym	0.33
2	Bakery	0.33
3	ATM	0.00
4	Nightlife Spot	0.00

----Munirka----

	venue	freq
0	Indian Restaurant	0.25
1	Department Store	0.12
2	Bakery	0.12
3	Sandwich Place	0.12
4	Furniture / Home Store	0.12

----Najafgarh----

	venue	freq
0	Electronics Store	0.5
1	Food & Drink Shop	0.5
2	ATM	0.0
3	North Indian Restaurant	0.0
4	Mughlai Restaurant	0.0

----Naraina----

	venue	freq
0	Indian Restaurant	0.5
1	Café	0.5
2	ATM	0.0
3	North Indian Restaurant	0.0
4	Mughlai Restaurant	0.0

----Nehru Place----

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

----Netaji Subhash Place----

	venue	freq
0	Fast Food Restaurant	0.22
1	Indian Restaurant	0.17
2	Coffee Shop	0.11
3	Shopping Mall	0.11
4	Pizza Place	0.06

----New Friends Colony----

	venue	freq
0	Café	0.20
1	Plaza	0.07
2	Lounge	0.07
3	Fast Food Restaurant	0.07
4	Chinese Restaurant	0.07

----Nizamuddin----

	venue	freq
0	Indian Restaurant	0.22
1	Pizza Place	0.11
2	BBQ Joint	0.11
3	Mughlai Restaurant	0.11
4	Monument / Landmark	0.11

----Okhla Phase 1----

	venue	freq
0	Cosmetics Shop	1.0
1	ATM	0.0
2	North Indian Restaurant	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

----Okhla Phase 2----

	venue	freq
0	ATM	0.5
1	Hotel	0.5
2	North Indian Restaurant	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

----PVR Anupam Complex----

	venue	freq
0	Multiplex	0.25
1	Pizza Place	0.12
2	Café	0.12
3	Lounge	0.12
4	Coffee Shop	0.12

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

	venue	freq
0	Donut Shop	0.11
1	Fast Food Restaurant	0.11
2	Shopping Mall	0.11
3	Clothing Store	0.11
4	Restaurant	0.11

----Paharganj----

	venue	freq
0	Hotel	0.40
1	Indian Restaurant	0.10
2	Restaurant	0.08
3	Café	0.05
4	Food	0.02

----Palam----

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

0	Bar	1.0
1	ATM	0.0
2	Motel	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

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

	venue	freq
0	Dessert Shop	0.2
1	Golf Course	0.2
2	Bakery	0.2
3	Sake Bar	0.2
4	Campground	0.2

----Panchsheel Park----

	venue	freq
0	Pizza Place	0.2
1	Event Service	0.2
2	American Restaurant	0.2
3	Event Space	0.2
4	Business Service	0.2

----Pandara Road Market----

	venue	freq
0	Indian Restaurant	0.33
1	Restaurant	0.07
2	Ice Cream Shop	0.07
3	Snack Place	0.07
4	Cafeteria	0.07

----Pandav Nagar----

	venue	freq
0	Dessert Shop	0.22
1	Park	0.11
2	Moving Target	0.11
3	Bus Station	0.11
4	Food & Drink Shop	0.11

----Paschim Vihar----

	venue	freq
0	Pizza Place	0.12
1	Chinese Restaurant	0.12
2	Multicuisine Indian Restaurant	0.12
3	Indian Restaurant	0.12
4	Sandwich Place	0.12

----Patparganj----

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

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

	venue	freq
0	Sandwich Place	0.17
1	Chinese Restaurant	0.17
2	Indian Restaurant	0.17
3	Pizza Place	0.08
4	Fast Food Restaurant	0.08

----Pitampura----

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

----Pragati Maidan----

	venue	freq
0	Pool	0.25
1	Hockey Arena	0.12
2	Museum	0.12
3	Café	0.12
4	Art Museum	0.12

----Prashant Vihar----

	venue	freq
0	Indian Restaurant	0.50
1	Pizza Place	0.33
2	Multiplex	0.17
3	North Indian Restaurant	0.00
4	Moving Target	0.00

----Preet Vihar----

	venue	freq
0	Pizza Place	0.17
1	BBQ Joint	0.17
2	Ice Cream Shop	0.17
3	Arcade	0.17
4	Fast Food Restaurant	0.17

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

	venue	freq
0	Hotel	0.5
1	Café	0.5
2	ATM	0.0
3	North Indian Restaurant	0.0
4	Mughlai Restaurant	0.0

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

	venue	freq
0	Hotel	0.32
1	Coffee Shop	0.07
2	Restaurant	0.07
3	Buffet	0.07
4	Indian Restaurant	0.07

----Punjabi Bagh----

	venue	freq
0	Hookah Bar	0.17
1	Donut Shop	0.17
2	Convenience Store	0.17
3	Indian Restaurant	0.17
4	Coffee Shop	0.17

----Qutab Institutional Area----

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

----R K Puram----

	venue	freq
0	Thai Restaurant	0.14
1	Multiplex	0.14
2	Shopping Mall	0.14
3	Comfort Food Restaurant	0.14
4	Café	0.14

----Race Course----

	venue	freq
0	Racetrack	0.25

1	Business Service	0.25
2	Gym / Fitness Center	0.25
3	History Museum	0.25
4	ATM	0.00

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

	venue	freq
0	American Restaurant	0.17
1	Indian Restaurant	0.17
2	Hotel	0.17
3	Hotel Bar	0.17
4	Thai Restaurant	0.17

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

	venue	freq
0	Hotel	0.33
1	Indian Restaurant	0.17
2	Food Truck	0.17
3	Coffee Shop	0.17
4	Fast Food Restaurant	0.17

----Rajendra Place----

	venue	freq
0	Pizza Place	0.2
1	Fast Food Restaurant	0.2
2	Light Rail Station	0.1
3	Multicuisine Indian Restaurant	0.1
4	Bar	0.1

----Rajinder Nagar----

	venue	freq
0	Food & Drink Shop	0.12
1	Pizza Place	0.12
2	Sporting Goods Shop	0.12
3	Café	0.12
4	Gym / Fitness Center	0.12

----Rajouri Garden----

	venue	freq
0	Indian Restaurant	0.23
1	Café	0.15
2	Snack Place	0.08
3	BBQ Joint	0.08
4	Fast Food Restaurant	0.08

----Rohini----

	venue	freq
0	Department Store	0.25
1	Indian Restaurant	0.25
2	Light Rail Station	0.25
3	Fast Food Restaurant	0.25
4	Northeast Indian Restaurant	0.00

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

	venue	freq
0	Hotel	0.31
1	Buffet	0.07
2	Coffee Shop	0.07
3	Restaurant	0.07
4	Indian Restaurant	0.07

----SDA----

	venue	freq
0	Café	0.27
1	Coffee Shop	0.09
2	Indian Restaurant	0.09
3	Chinese Restaurant	0.09
4	Asian Restaurant	0.09

----Safdarjung----

	venue	freq
0	Indian Restaurant	0.25
1	Convenience Store	0.08
2	Park	0.08
3	Jazz Club	0.08
4	Mexican Restaurant	0.08

----Sainik Farms----

	venue	freq
0	Asian Restaurant	0.33
1	Diner	0.17
2	Pub	0.17
3	Bakery	0.17
4	Mediterranean Restaurant	0.17

----Saket----

	venue	freq
0	Café	0.15
1	Indian Restaurant	0.15
2	Convenience Store	0.15
3	Pizza Place	0.08
4	Lounge	0.08

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

	venue	freq
0	Coffee Shop	0.15
1	Multiplex	0.15
2	Convenience Store	0.08
3	Thai Restaurant	0.08
4	Asian Restaurant	0.08

----Sarita Vihar----

	venue	freq
0	Café	0.75
1	Park	0.25
2	ATM	0.00
3	Nightlife Spot	0.00
4	Moving Target	0.00

----Sarojini Nagar----

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

----Satyaniketan----

	venue	freq
0	Café	0.29
1	Plaza	0.14
2	Bistro	0.14
3	Deli / Bodega	0.14
4	Indian Restaurant	0.14

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

	venue	freq
0	Train Station	0.5
1	Light Rail Station	0.5
2	ATM	0.0
3	North Indian Restaurant	0.0
4	Moving Target	0.0

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

	venue	freq
0	Indian Restaurant	0.11
1	Lounge	0.07

2	Bar	0.07
3	Clothing Store	0.07
4	Café	0.07

----Shahdara----

	venue	freq
0	Mobile Phone Shop	0.33
1	Park	0.33
2	Chocolate Shop	0.33
3	ATM	0.00
4	North Indian Restaurant	0.00

----Shahpur Jat----

	venue	freq
0	Indian Restaurant	0.22
1	Bar	0.22
2	Furniture / Home Store	0.11
3	Stadium	0.11
4	Comedy Club	0.11

----Shakarpur----

	venue	freq
0	Diner	0.17
1	Shopping Mall	0.17
2	Light Rail Station	0.17
3	Gym	0.17
4	Coffee Shop	0.17

----Shalimar Bagh----

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

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

	venue	freq
0	Hotel	0.17
1	Indian Restaurant	0.14
2	Metro Station	0.07
3	Cocktail Bar	0.07
4	Italian Restaurant	0.07

----Shanti Niketan Marg----

	venue	freq
0	Pizza Place	0.2
1	Convenience Store	0.2
2	Gourmet Shop	0.2
3	Bakery	0.2
4	Café	0.2

----Sheikh Sarai----

	venue	freq
0	Thai Restaurant	0.38
1	Historic Site	0.12
2	Italian Restaurant	0.12
3	Whisky Bar	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	0.07
3	Café	0.05
4	Shopping Mall	0.05

----South Extension 1----

	venue	freq
0	Coffee Shop	0.27
1	Pizza Place	0.18
2	Indian Restaurant	0.18
3	Chinese Restaurant	0.09
4	Fast Food Restaurant	0.09

----South Extension 2----

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

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

	venue	freq
0	Indian Restaurant	0.11
1	Lounge	0.07
2	Clothing Store	0.07
3	Bar	0.07
4	Café	0.06

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

	venue	freq
0	Fast Food Restaurant	0.11
1	Breakfast Spot	0.11
2	Café	0.07
3	Dumpling Restaurant	0.07
4	Donut Shop	0.07

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

	venue	freq
0	Hotel	0.29
1	Restaurant	0.12
2	Department Store	0.12
3	Liquor Store	0.06
4	Asian Restaurant	0.06

----Subhash Nagar----

	venue	freq
0	Skating Rink	0.25
1	Park	0.25
2	Multiplex	0.25
3	Sculpture Garden	0.25
4	ATM	0.00

----Sunder Nagar----

	venue	freq
0	Indian Restaurant	0.23
1	Italian Restaurant	0.15
2	Hotel	0.15
3	Convenience Store	0.08
4	Café	0.08

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

	venue	freq
0	Coffee Shop	0.27
1	Café	0.18
2	Burger Joint	0.09
3	Jewelry Store	0.09
4	Pizza Place	0.09

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

	venue	freq
0	Fast Food Restaurant	0.18
1	Café	0.14
2	Indian Restaurant	0.14

3	BBQ Joint	0.05
4	Pizza Place	0.05

----Tagore Garden----

	venue	freq
0	Indian Restaurant	0.18
1	Pizza Place	0.09
2	Ice Cream Shop	0.09
3	Food Truck	0.09
4	Bakery	0.09

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

	venue	freq
0	Café	0.17
1	Coffee Shop	0.08
2	Bar	0.06
3	Chinese Restaurant	0.06
4	Asian Restaurant	0.06

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

	venue	freq
0	Indian Restaurant	0.19
1	Nightclub	0.19
2	Shopping Mall	0.06
3	Mediterranean Restaurant	0.06
4	Chinese Restaurant	0.06

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

	venue	freq
0	Hotel	0.22
1	Mediterranean Restaurant	0.11
2	Hotel Bar	0.11
3	Chinese Restaurant	0.11
4	History Museum	0.11

----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	ATM	0.04
4	Tex-Mex Restaurant	0.04

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

	venue	freq
0	Indian Restaurant	0.16
1	Italian Restaurant	0.09
2	Café	0.09
3	Hotel	0.09
4	Lounge	0.06

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

	venue	freq
0	Café	0.18
1	Plaza	0.06
2	Hotel	0.06
3	Fast Food Restaurant	0.06
4	Chinese Restaurant	0.06

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

	venue	freq
0	Indian Restaurant	0.33
1	Bakery	0.33
2	Hotel Bar	0.17
3	Asian Restaurant	0.17
4	ATM	0.00

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

	venue	freq
0	Shopping Mall	0.2
1	Indian Restaurant	0.2
2	Park	0.2
3	Hotel	0.2
4	Café	0.2

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

	venue	freq
0	Indian Restaurant	0.15
1	Japanese Restaurant	0.08
2	Hotel	0.08
3	Pool	0.08
4	Northeast Indian Restaurant	0.08

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

	venue	freq
0	Chinese Restaurant	0.14
1	Indian Restaurant	0.14
2	BBQ Joint	0.07
3	Convenience Store	0.07
4	Pizza Place	0.07

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

	venue	freq
0	Hotel	0.13
1	Spa	0.07
2	Italian Restaurant	0.07
3	Coffee Shop	0.07
4	Indian Restaurant	0.07

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

	venue	freq
0	Café	0.16
1	Pizza Place	0.05
2	Hotel	0.05
3	Movie Theater	0.05
4	Sandwich Place	0.05

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

	venue	freq
0	Hotel Bar	0.29
1	Japanese Restaurant	0.14
2	Chinese Restaurant	0.14
3	Indian Restaurant	0.14
4	Lounge	0.14

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

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

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

	venue	freq
0	Hotel	0.75
1	Indian Restaurant	0.25
2	ATM	0.00
3	North Indian Restaurant	0.00
4	Moving Target	0.00

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

	venue	freq
0	Bar	0.15
1	Indian Restaurant	0.15
2	Comedy Club	0.08
3	Stadium	0.08

4 Australian Restaurant 0.08

----Tilak Nagar----

	venue	freq
0	Fast Food Restaurant	0.50
1	North Indian Restaurant	0.25
2	Bar	0.25
3	ATM	0.00
4	Mughlai Restaurant	0.00

----Tughlakabad Institutional Area----

	venue	freq
0	Steakhouse	0.2
1	Bar	0.2
2	Hotel	0.2
3	Restaurant	0.2
4	Market	0.2

----Uday Park----

	venue	freq
0	Fast Food Restaurant	0.17
1	Metro Station	0.17
2	Music Venue	0.17
3	Park	0.17
4	Café	0.17

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

	venue	freq
0	Indian Restaurant	0.25
1	Sandwich Place	0.25
2	Pizza Place	0.12
3	Chinese Restaurant	0.12
4	Hotel	0.12

----Uttam Nagar----

	venue	freq
0	ATM	0.67
1	Indian Restaurant	0.33
2	North Indian Restaurant	0.00
3	Moving Target	0.00
4	Mughlai Restaurant	0.00

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

	venue	freq
0	Food & Drink Shop	0.06
1	Arcade	0.06
2	Food Court	0.06
3	Clothing Store	0.06
4	Shopping Mall	0.06

----Vasant Kunj----

	venue	freq
0	Chinese Restaurant	0.12
1	Dessert Shop	0.12
2	Pizza Place	0.12
3	Spa	0.12
4	Vegetarian / Vegan Restaurant	0.12

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

	venue	freq
0	Dessert Shop	0.1
1	Bank	0.1
2	Fast Food Restaurant	0.1
3	Sandwich Place	0.1
4	Chinese Restaurant	0.1

----Vasant Vihar----

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

	venue	freq
0	Café	0.11
1	Coffee Shop	0.07
2	Restaurant	0.07
3	Pizza Place	0.07
4	Fast Food Restaurant	0.07

----Vasundhara Enclave----

	venue	freq
0	ATM	0.5
1	Gym / Fitness Center	0.5
2	Motel	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

----Vijay Nagar----

	venue	freq
0	Café	0.29
1	Coffee Shop	0.07
2	Clothing Store	0.07
3	Tea Room	0.07
4	Chinese Restaurant	0.07

----Vikas Marg----

	venue	freq
0	Dessert Shop	0.14
1	Burger Joint	0.14
2	Pharmacy	0.14
3	Convenience Store	0.14
4	Burrito Place	0.14

----Vikaspuri----

	venue	freq
0	Pizza Place	0.25
1	Indian Restaurant	0.25
2	Ice Cream Shop	0.25
3	Fast Food Restaurant	0.25
4	North Indian Restaurant	0.00

----Vivek Vihar----

	venue	freq
0	Juice Bar	0.50
1	Athletics & Sports	0.25
2	Bed & Breakfast	0.25
3	Northeast Indian Restaurant	0.00
4	Mughlai Restaurant	0.00

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

	venue	freq
0	Indian Restaurant	0.15
1	Sandwich Place	0.15
2	Chinese Restaurant	0.15
3	Restaurant	0.08
4	BBQ Joint	0.08

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

	venue	freq
0	Fast Food Restaurant	0.20
1	Café	0.13
2	Pizza Place	0.07
3	Shopping Mall	0.07
4	Multiplex	0.07

----West Patel Nagar----

	venue	freq
0	Pizza Place	0.25
1	Juice Bar	0.25
2	Park	0.25
3	Bakery	0.25
4	Nightlife Spot	0.00

```
1 #figsize=(8,6)
```

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

```
      venue  freq
0      Hotel  0.29
1      Buffet  0.06
2  Indian Restaurant  0.06
3  Bed & Breakfast  0.06
4      Coffee Shop  0.06
```

```
----Yusuf Sarai----
```

```
      venue  freq
0  Indian Restaurant  0.17
1      Coffee Shop  0.17
2  Japanese Restaurant  0.08
3  Chinese Restaurant  0.08
4  Asian Restaurant  0.08
```

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

```
      venue  freq
0      Hotel  0.35
1      Buffet  0.06
2      Coffee Shop  0.06
3      Restaurant  0.06
4  Indian Restaurant  0.06
```

```
In [41]:
```

```
## put that into a pandas dataframe
## First, write a function to sort the venues in descending order.

def return_most_common_venues(row, num_top_venues):
    row_categories = row.iloc[1:]
    row_categories_sorted = row_categories.sort_values(ascending=False)

    return row_categories_sorted.index.values[0:num_top_venues]
```

```
In [42]:
```

```
## create the new dataframe and display the top 10 venues for each Locality.

num_top_venues = 10

indicators = ['st', 'nd', 'rd']

# create columns according to number of top venues
columns = ['Locality']
for ind in np.arange(num_top_venues):
    try:
        columns.append('{}{} Most Common Venue'.format(ind+1, indicators[ind]))
    except:
        columns.append('{}th Most Common Venue'.format(ind+1))

# create a new dataframe
Locality_venues_sorted = pd.DataFrame(columns=columns)
Locality_venues_sorted['Locality'] = New_Delhi_grouped['Locality']

for ind in np.arange(New_Delhi_grouped.shape[0]):
    Locality_venues_sorted.iloc[ind, 1:] = return_most_common_venues(New_Delhi_grouped.iloc[ind, :],
    num_top_venues)

Locality_venues_sorted
```

```
Out[42]:
```

Locality	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue
ARSS Mall, Connaught Place	Indian	ATM	Sandwich	Multicuisine	Coffee	Chinese	Bed & Breakfast	Hotel	Airport

0	Paschim Vihar Locality	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	Pizza Place	8th Most Common Venue	9th Most Common Venue
1	Adchini	Café	Restaurant	Pub	Restaurant	Restaurant	Restaurant	Shop	Restaurant	Restaurant	Truck
2	Aditya Mega Mall, Karkardooma	Pizza Place	Shopping Mall	Multiplex	Indian Restaurant	Hotel	Café	African Restaurant	Fast Food Restaurant	Fried Chicken Joint	
3	Aerocity	Hotel	Airport Lounge	Airport Terminal	Coffee Shop	Fast Food Restaurant	Rental Car Location	Women's Store	Farmers Market	Fried Chicken Joint	
4	Aggarwal City Mall, Pitampura	Pizza Place	Indian Restaurant	Department Store	Donut Shop	Fast Food Restaurant	Farmers Market	Fried Chicken Joint	French Restaurant	Food Truck	
5	Aggarwal City Plaza, Rohini	Pizza Place	Gym / Fitness Center	Multiplex	Bus Station	Sandwich Place	Fast Food Restaurant	French Restaurant	Food Truck	Food Court	
6	Alaknanda	New American Restaurant	Food & Drink Shop	Coffee Shop	Steakhouse	Market	Women's Store	Fried Chicken Joint	French Restaurant	Food Truck	
7	Ambience Mall, Vasant Kunj	Coffee Shop	Café	Fast Food Restaurant	Clothing Store	Asian Restaurant	Italian Restaurant	Shopping Mall	Chinese Restaurant	Indian Restaurant	
8	Anand Lok	Café	Stadium	Dessert Shop	Hotel	Other Great Outdoors	Coffee Shop	Golf Course	Metro Station	Music Venue	
9	Anand Vihar	Café	Pharmacy	Convenience Store	Park	Burger Joint	Burrito Place	Dessert Shop	Fast Food Restaurant	French Restaurant	
10	Andaz Delhi, Aerocity	Hotel	Indian Restaurant	Coffee Shop	Restaurant	Shopping Mall	Multicuisine Indian Restaurant	Bed & Breakfast	Bakery	Buffet	
11	Ansal Plaza Mall, Khel Gaon Marg	Department Store	Japanese Restaurant	Karaoke Bar	Electronics Store	Fast Food Restaurant	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	
12	Asaf Ali Road	Indian Restaurant	Campground	Movie Theater	Hotel	Hostel	Theme Park	French Restaurant	Food Truck	Food Court	
13	Ashok Vihar Phase 1	Pizza Place	Market	Indian Restaurant	Dessert Shop	Smoke Shop	BBQ Joint	Snack Place	Hostel	Event Space	
14	Ashok Vihar Phase 2	Pizza Place	Asian Restaurant	Coffee Shop	Sandwich Place	South Indian Restaurant	Indian Restaurant	Airport Lounge	Gaming Cafe	Frozen Yogurt Shop	
15	Ashok Vihar Phase 3	Pizza Place	South Indian Restaurant	Garden	Farmers Market	Fried Chicken Joint	French Restaurant	Food Truck	Food Court	Food & Drink Shop	
16	Barakhamba Road	Indian Restaurant	Hotel	Bakery	Theater	Café	Spa	Arcade	Art Gallery	Nightclub	
17	Basant Lok Market, Vasant Vihar	Café	Fast Food Restaurant	Restaurant	Pizza Place	Chinese Restaurant	Coffee Shop	Department Store	Pub	Food & Drink Shop	
18	Bellagio, Ashok Vihar Phase 2	Pizza Place	Asian Restaurant	Coffee Shop	Sandwich Place	South Indian Restaurant	Indian Restaurant	Airport Lounge	Gaming Cafe	Frozen Yogurt Shop	
19	Best Western Taurus Hotel, Mahipalpur	Hotel	Indian Restaurant	Hotel Bar	Shoe Store	Bed & Breakfast	Buffet	Italian Restaurant	Accessories Store	Donut Shop	
20	Bhikaji Cama Place	Lounge	Hotel	Fast Food Restaurant	Café	Bakery	Chinese Restaurant	Gym / Fitness Center	Asian Restaurant	Breakfast Spot	
21	Chanakypuri	African Restaurant	Concert Hall	Park	Trail	Café	Women's Store	Farmers Market	Fried Chicken Joint	French Restaurant	
22	Chander Nagar	Pizza Place	Indie Movie Theater	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	Food Truck	Food Court	Food & Drink Shop	Food	
23	Chandni Chowk	Indian Restaurant	Snack Place	Market	Dessert Shop	Historic Site	Train Station	Paper / Office Supplies Store	Restaurant	Food Truck	
24	Chawri Bazar	Indian Restaurant	Paper / Office Supplies Store	Fast Food Restaurant	Light Rail Station	Hardware Store	Snack Place	Dessert Shop	Frozen Yogurt Shop	Fried Chicken Joint	
25	Chhatarpur	Indian Restaurant	Donut Shop	Japanese Restaurant	Hotel	Light Rail Station	Luggage Store	Fast Food Restaurant	Frozen Yogurt Shop	Fried Chicken Joint	
26	Chittaranjan	Market	Park	Chinese	Women's	Farmers	Fried Chicken	French	Food Truck	Food	

20	Park	Market	Park	Restaurant	Store	Market	Chicken	Restaurant	Food Truck	Court
	Locality	1st Most Common	2nd Most Common	3rd Most Common	4th Most Common	5th Most Common	6th Most Common	7th Most Common	8th Most Common	9th Most Common
27	City Centre Mall, Rohini	Shopping Mall	Department Store	Venue Café	Fast Food Restaurant	Venue Multiplex	Venue Restaurant	Venue Hotel	Venue Restaurant	Venue Court
28	City Square Mall, Rajouri Garden	Fast Food Restaurant	Café	Indian Restaurant	Nightclub	Snack Place	Restaurant	Multiplex	Shoe Store	Asian Restaurant
29	Civil Lines	Chinese Restaurant	Burger Joint	Coffee Shop	Light Rail Station	Smoke Shop	Farmers Market	Fried Chicken Joint	French Restaurant	Food Truck
...
209	The Lalit New Delhi, Barakhamba Road	Indian Restaurant	Bakery	Asian Restaurant	Hotel Bar	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	Food Truck
210	The Leela Ambience Convention Hotel	Indian Restaurant	Café	Shopping Mall	Park	Hotel	French Restaurant	Food Truck	Food Court	Food & Drink Shop
211	The Leela Palace, Chanakyapuri	Indian Restaurant	Train Station	Seafood Restaurant	Spa	Breakfast Spot	Cocktail Bar	Pool	Northeast Indian Restaurant	Gym / Fitness Center
212	The Lodhi, Lodhi Road	Indian Restaurant	Chinese Restaurant	Restaurant	Spa	Convenience Store	Hotel Bar	Hotel	Pizza Place	BBQ Joint
213	The Park, Connaught Place	Hotel	Mediterranean Restaurant	Indian Restaurant	Metro Station	Restaurant	Italian Restaurant	Coffee Shop	Spa	Cocktail Bar
214	The Surya New Delhi, New Friends Colony	Café	Pizza Place	Lounge	Chinese Restaurant	Fast Food Restaurant	Coffee Shop	Thai Restaurant	Nightclub	Plaza
215	The Taj Mahal Hotel, Mansingh Road	Hotel Bar	Indian Restaurant	Japanese Restaurant	Restaurant	Chinese Restaurant	Lounge	Donut Shop	Dumpling Restaurant	Fried Chicken Joint
216	The Taj Palace Hotel, Chanakyapuri	Hotel	Indian Restaurant	Café	Chinese Restaurant	Restaurant	Bar	Spa	Mediterranean Restaurant	Bistro
217	The Uppal, Aerocity	Hotel	Indian Restaurant	Women's Store	Falafel Restaurant	Fried Chicken Joint	French Restaurant	Food Truck	Food Court	Food & Drink Shop
218	The Village Restaurant Complex, Khel Gaon Marg	Indian Restaurant	Bar	Comedy Club	Australian Restaurant	Chinese Restaurant	Furniture / Home Store	Theater	Coffee Shop	Karaoke Bar
219	Tilak Nagar	Fast Food Restaurant	Bar	North Indian Restaurant	Women's Store	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	Food Truck	Food Court
220	Tughlakabad Institutional Area	Restaurant	Hotel	Bar	Steakhouse	Market	Farmers Market	Fried Chicken Joint	French Restaurant	Food Truck
221	Uday Park	Fast Food Restaurant	Park	Metro Station	Music Venue	Market	Café	Women's Store	French Restaurant	Food Truck
222	Unity One Mall, Janakpuri	Indian Restaurant	Sandwich Place	Hotel	Coffee Shop	Chinese Restaurant	Pizza Place	Airport Lounge	Gaming Cafe	Frozen Yogurt Shop
223	Uttam Nagar	ATM	Indian Restaurant	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	Food Truck	Food Court	Food & Drink Shop
224	V3S Mall, Laxmi Nagar	Gym	Clothing Store	Food Court	Food & Drink Shop	Dessert Shop	Multiplex	Gift Shop	Café	Fast Food Restaurant
225	Vasant Kunj	Pizza Place	Dessert Shop	Vegetarian / Vegan Restaurant	Spa	Bar	Sandwich Place	Chinese Restaurant	Fast Food Restaurant	Farmers Market
226	Vasant Square Mall, Vasant Kunj	Pizza Place	Fast Food Restaurant	Chinese Restaurant	Bank	Bar	Sandwich Place	Spa	Vegetarian / Vegan Restaurant	Dessert Shop
227	Vasant Vihar	Café	Fast Food Restaurant	Restaurant	Chinese Restaurant	Pizza Place	Coffee Shop	Donut Shop	Asian Restaurant	Movie Theater
228	Vasundhara Enclave	ATM	Gym / Fitness Center	Gaming Cafe	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	Food Truck	Food Court	Food & Drink Shop

	Locality	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue
229	Vijay Nagar	Cafe	Restaurant	Restaurant	Shop	Joint	Joint	Joint	Joint	Joint
230	Vikas Marg	Pharmacy	Convenience Store	Park	Burger Joint	Burrito Place	Dessert Shop	Café	Fast Food Restaurant	French Restaurant
231	Vikasपुरi	Pizza Place	Indian Restaurant	Ice Cream Shop	Fast Food Restaurant	Falafel Restaurant	Fried Chicken Joint	French Restaurant	Food Truck	Food Court
232	Vivek Vihar	Juice Bar	Athletics & Sports	Bed & Breakfast	Women's Store	Furniture / Home Store	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	Food Truck
233	West End Mall, Janak Puri	Sandwich Place	Indian Restaurant	Chinese Restaurant	Pizza Place	Restaurant	Fast Food Restaurant	Gym / Fitness Center	Metro Station	Coffee Shop
234	West Gate Mall, Rajouri Garden	Fast Food Restaurant	Café	Hookah Bar	Multiplex	Shopping Mall	Clothing Store	Restaurant	Indian Restaurant	Pizza Place
235	West Patel Nagar	Pizza Place	Park	Juice Bar	Bakery	Farmers Market	Fried Chicken Joint	French Restaurant	Food Truck	Food Court
236	Worldmark 1, Aerocity	Hotel	Indian Restaurant	Buffet	Coffee Shop	Restaurant	Bed & Breakfast	Hotel Bar	Shopping Mall	Bakery
237	Yusuf Sarai	Indian Restaurant	Coffee Shop	Hotel	Bar	Asian Restaurant	Korean Restaurant	Chinese Restaurant	Japanese Restaurant	Park
238	ibis New Delhi, Aerocity	Hotel	Indian Restaurant	Buffet	Restaurant	Coffee Shop	Hotel Bar	Gym / Fitness Center	Punjabi Restaurant	Bakery

239 rows × 11 columns



In [43]:

```
## 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
```

Out[43]:

(239,)

In [45]:

```
# add clustering labels
New_Delhi_merged = df_final.head(239)
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()
```

C:\ProgramData\Anaconda3\lib\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: <http://pandas.pydata.org/pandas-docs/stable/indexing.html#indexing-view-versus-copy>

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

Out [45]:

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

In [46]:

```
# 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
```

Out [46]:

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

The image may not be visible on Github account.I have added image of it named map_clusters in file section



In [47]:

```
## 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]))]]
```

Out[47]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Common Venue
5	28.700516	3.040000	Average, Good, Poor	594	0	Pizza Place	Gym / Fitness Center	Multiplex	Bus Station	Sandwich Place	Fast Restaurant
6	28.527088	3.117391	Average, Good, Poor	1012	0	New American Restaurant	Food & Drink Shop	Coffee Shop	Steakhouse	Market	Worship
11	28.562580	3.750000	Average, Good, Very Good	875	0	Department Store	Japanese Restaurant	Karaoke Bar	Electronics Store	Fast Food Restaurant	Farm
26	28.538688	3.130303	Average, Good, Poor	2578	0	Market	Park	Chinese Restaurant	Women's Store	Farmers Market	Church
29	28.681233	3.300000	Average, Good, Very Good	769	0	Chinese Restaurant	Burger Joint	Coffee Shop	Light Rail Station	Smoke Shop	Farm
34	28.720602	3.600000	Good	119	0	Shopping Mall	Hotel	Asian Restaurant	Light Rail Station	Theme Park	Church
37	28.541903	3.000000	Average	4	0	Nightclub	Coffee Shop	Event Space	Chinese Restaurant	Women's Store	Church
38	28.702961	3.225000	Average, Good	168	0	Shopping Mall	Convenience Store	Vegetarian / Vegan Restaurant	Multiplex	Gym / Fitness Center	Farm
48	28.630149	2.950000	Average, Good, Poor	471	0	Sandwich Place	Indian Restaurant	Chinese Restaurant	Pizza Place	Restaurant	Fast Restaurant
50	28.645084	3.235000	Average, Good, Poor, Very Good	2578	0	Pizza Place	Hotel	Coffee Shop	Café	Bar	School
51	28.557166	3.080000	Average, Very Good	1120	0	Indie Movie Theater	Vegetarian / Vegan Restaurant	Fast Food Restaurant	Coffee Shop	Hot Dog Joint	
52	28.551417	3.505000	Average, Good, Very Good	7446	0	Fast Food Restaurant	Chinese Restaurant	Lounge	Coffee Shop	Food Court	Gast
53	28.549856	3.720000	Average, Good, Very Good	352	0	Fast Food Restaurant	Lounge	Coffee Shop	Dessert Shop	Nightclub	Farm
54	28.543798	3.500000	Average, Good	502	0	Nightclub	Coffee Shop	Event Space	Women's Store	Frozen Yogurt Shop	Church
59	28.654883	3.053846	Average, Good	262	0	Burger Joint	Women's Store	Deli / Bodega	Frozen Yogurt Shop	Fried Chicken Joint	Fast Restaurant

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Common Venue
67	28.554545	3.251786	Average, Excellent, Good, Very Good	5479	0	Coffee Shop	Restaurant	Fast Food Restaurant	Bar	Other Nightlife	Th
72	28.705700	3.350000	Average, Good	278	0	Indian Restaurant	Plaza	Garden	Park	Hotel	C
73	28.643036	3.000000	Average	7	0	Pizza Place	Hotel	Coffee Shop	Fast Food Restaurant	Metro Station	
74	28.621267	3.416667	Average, Good	475	0	Indian Restaurant	Hotel	Cocktail Bar	Restaurant	Metro Station	
87	28.582031	3.117143	Average, Good, Poor, Very Good	2140	0	Snack Place	Food	Sandwich Place	BBQ Joint	Chinese Restaurant	Fast Resta
90	28.642755	3.450000	Average, Good	322	0	Pizza Place	Hotel	Fast Food Restaurant	Donut Shop	Convenience Store	Multic I Resta
93	28.554084	3.541667	Average, Good, Very Good	3781	0	Indian Restaurant	Bar	Hotel	Light Rail Station	Electronics Store	Flea M
94	28.538153	3.117143	Average, Good, Poor	3642	0	Fast Food Restaurant	Pizza Place	Bank	Gym	Market	Fa M
96	28.516316	3.200000	Average	95	0	ATM	Convenience Store	Food Truck	Food Court	Farmers Market	F Y
101	28.667644	3.300000	Average	132	0	Pizza Place	Bus Station	American Restaurant	Metro Station	Historic Site	Fast Resta
103	28.652501	3.080000	Average, Good, Poor	2196	0	Pizza Place	Convenience Store	Department Store	Fish & Chips Shop	Rental Car Location	F Resta
105	28.526489	3.300000	Average, Good	228	0	Shopping Mall	Furniture / Home Store	Golf Course	BBQ Joint	Nightclub	Fast Resta
109	28.689561	3.311111	Average, Very Good	903	0	Department Store	Moving Target	Basketball Court	Light Rail Station	Market	Woi
125	28.627715	3.125000	Average, Good	171	0	Garden	Food Truck	Restaurant	Farmers Market	Frozen Yogurt Shop	Cr
130	28.724100	3.133333	Average	325	0	Pizza Place	Asian Restaurant	Shopping Mall	Clothing Store	Theme Park	Fast Resta
...	
154	28.618935	2.900000	Average	9	0	Dessert Shop	Metro Station	Moving Target	Food & Drink Shop	Bus Station	Resta
155	28.669160	3.148214	Average, Good, Poor	2735	0	Pizza Place	Market	Indian Restaurant	Garden	Multicuisine Indian Restaurant	C
157	28.629505	2.600000	Average	67	0	Indian Restaurant	Chinese Restaurant	Sandwich Place	BBQ Joint	Gym / Fitness Center	S
161	28.639872	3.134483	Average, Good, Poor	1481	0	Pizza Place	Arcade	BBQ Joint	Fast Food Restaurant	Chinese Restaurant	Ice C
167	28.599082	2.900000	Average	9	0	Gym / Fitness Center	Business Service	Racetrack	History Museum	Women's Store	F Resta
170	28.643757	3.575000	Average, Good	2879	0	Pizza Place	Fast Food Restaurant	Hotel	Multicuisine Indian Restaurant	Bar	C
171	28.639604	3.056410	Average, Good, Poor, Very Good	5168	0	Pizza Place	Café	Food & Drink Shop	Sporting Goods Shop	Sandwich Place	B
177	28.511482	2.750000	Average, Poor	107	0	Asian Restaurant	Diner	Pub	Bakery	Mediterranean Restaurant	Fast Resta
183	28.670776	3.100000	Average	9	0	Train Station	Light Rail Station	Women's Store	Farmers Market	Frozen Yogurt Shop	Cr
185	28.683364	3.000000	Average,	586	0	Mobile Phone	Park	Chocolate	Women's	Farmers	Cr

			Good			1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Common Venue
	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels						
187	28.629634	2.942857	Average	151	0	Black Place	Gym	Shopping Mall	Diner	Coffee Shop	Light S
188	28.707685	3.168182	Average, Good, Very Good	1668	0	Pizza Place	Convenience Store	Hotel	Coffee Shop	Bakery	F C
189	28.620715	3.880000	Average, Good, Very Good	626	0	Hotel	Indian Restaurant	Italian Restaurant	Metro Station	Cocktail Bar	Resta
194	28.566717	3.303125	Average, Good, Very Good	2411	0	Coffee Shop	Pizza Place	Market	Indian Restaurant	Clothing Store	Ch Resta
196	28.680905	3.320000	Average, Good	286	0	Breakfast Spot	Fast Food Restaurant	Coffee Shop	Café	Chinese Restaurant	I Resta
198	28.636712	3.023529	Average, Poor	185	0	Skating Rink	Park	Sculpture Garden	Multiplex	Women's Store	Fa M
206	28.538993	3.450000	Average, Good	242	0	Coffee Shop	Clothing Store	Fast Food Restaurant	ATM	Asian Restaurant	Depar
212	28.592147	3.350000	Average, Good	189	0	Indian Restaurant	Chinese Restaurant	Restaurant	Spa	Convenience Store	Hot
213	28.623619	3.466667	Average, Good	1141	0	Hotel	Mediterranean Restaurant	Indian Restaurant	Metro Station	Restaurant	Resta
215	28.605069	3.785714	Average, Good, Very Good	1976	0	Hotel Bar	Indian Restaurant	Japanese Restaurant	Restaurant	Chinese Restaurant	L
218	28.552403	3.833333	Good, Very Good	1133	0	Indian Restaurant	Bar	Comedy Club	Australian Restaurant	Chinese Restaurant	Furni
219	28.638846	3.048148	Average, Good	290	0	Fast Food Restaurant	Bar	North Indian Restaurant	Women's Store	Frozen Yogurt Shop	Cf
220	28.523519	3.700000	Good	281	0	Restaurant	Hotel	Bar	Steakhouse	Market	Fa M
224	28.636921	2.819231	Average, Good, Poor	2265	0	Gym	Clothing Store	Food Court	Food & Drink Shop	Dessert Shop	Mu
225	28.524070	3.686364	Average, Good, Very Good	4001	0	Pizza Place	Dessert Shop	Vegetarian / Vegan Restaurant	Spa	Bar	San
226	28.525054	3.322222	Average, Good	1940	0	Pizza Place	Fast Food Restaurant	Chinese Restaurant	Bank	Bar	San
228	28.596073	3.052941	Average, Good	305	0	ATM	Gym / Fitness Center	Gaming Cafe	Frozen Yogurt Shop	Fried Chicken Joint	F Resta
232	28.667344	3.077273	Average, Good, Poor	939	0	Juice Bar	Athletics & Sports	Bed & Breakfast	Women's Store	Furniture / Home Store	F \
233	28.695096	3.050000	Average	86	0	NaN	NaN	NaN	NaN	NaN	
237	28.550257	3.220000	Average, Good	77	0	Hotel	Indian Restaurant	Buffet	Coffee Shop	Restaurant	I Bre

71 rows × 15 columns

In [48]:

```
## 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]))]]
```

Out[48]:

Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
						Airport	Airport	Coffee	Fast Food	Rental Car

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
3	28.553077	3.200000	Average	59	1	Hotel	Indian Restaurant	Coffee Shop	Restaurant	Shopping Mall	Multi-Cuisine Restaurant
10	28.554807	3.000000	Average	4	1	Hotel	Restaurant	Coffee Shop	Restaurant	Shopping Mall	Multi-Cuisine Restaurant
19	28.548827	2.700000	Average	9	1	Hotel	Indian Restaurant	Hotel Bar	Shoe Store	Bed & Breakfast	Buffet Restaurant
35	28.590297	3.350000	Average, Good	127	1	Hotel	Pizza Place	American Restaurant	Liquor Store	Department Store	Restaurant
56	28.570246	4.050000	Average, Excellent	1949	1	Hotel	Sculpture Garden	Neighborhood	Café	Gym	Women's Store
60	28.665829	4.000000	Very Good	756	1	Hotel	Asian Restaurant	Indian Restaurant	Café	BBQ Joint	Farmers Market
69	28.550327	3.300000	Average	30	1	Hotel	Indian Restaurant	Buffet	Coffee Shop	Restaurant	Bed & Breakfast
70	28.590654	3.550000	Average, Good	302	1	Hotel	Restaurant	Light Rail Station	American Restaurant	Liquor Store	Asian Restaurant
83	28.552895	3.300000	Average	15	1	Hotel	Indian Restaurant	Buffet	Restaurant	Coffee Shop	Hotel Bar
111	28.618772	3.666667	Average, Good, Very Good	725	1	Hotel	Indian Restaurant	Restaurant	Chinese Restaurant	Cocktail Bar	Spa
112	28.552036	3.500000	Good	26	1	Hotel	Indian Restaurant	Buffet	Restaurant	Coffee Shop	Hotel Bar
119	28.545033	2.960000	Average, Good	259	1	Hotel	American Restaurant	Bed & Breakfast	Accessories Store	Hotel Bar	Indian Restaurant
128	28.608252	2.945000	Average, Good	406	1	Hotel	Women's Store	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant
146	28.535040	3.175000	Average, Good	60	1	ATM	Hotel	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant
149	28.642910	2.996552	Average, Good, Poor, Very Good	2850	1	Hotel	Indian Restaurant	Restaurant	Café	Indian Chinese Restaurant	Tibet Restaurant
162	28.725814	3.050000	Average	50	1	Hotel	Café	Women's Store	Farmers Market	Fried Chicken Joint	French Restaurant
163	28.552711	3.100000	Average	7	1	Hotel	Indian Restaurant	Buffet	Restaurant	Coffee Shop	Lounge
168	28.543814	3.950000	Average, Excellent, Good, Very Good	1225	1	Indian Restaurant	Hotel Bar	Spa	American Restaurant	Hotel	Thai Restaurant
169	28.667261	3.200000	Average	76	1	Hotel	Indian Restaurant	Food Truck	Coffee Shop	Fast Food Restaurant	Women's Store
174	28.550802	3.250000	Average, Good	34	1	Hotel	Indian Restaurant	Buffet	Restaurant	Coffee Shop	Hotel Bar
197	28.592724	2.985714	Average	560	1	Hotel	Department Store	Restaurant	Liquor Store	American Restaurant	Light Rail Station
205	28.600171	3.714286	Average, Good, Very Good	1733	1	Hotel	Smoke Shop	Chinese Restaurant	Breakfast Spot	North Indian Restaurant	Historical Museum
217	28.535183	3.066667	Average	37	1	Hotel	Indian Restaurant	Women's Store	Falafel Restaurant	Fried Chicken Joint	French Restaurant
236	28.648177	3.675000	Average, Good, Very Good	876	1	Pizza Place	Park	Juice Bar	Bakery	Farmers Market	Fried Chicken Joint
238	28.559928	3.075000	Average, Good	923	1	Indian Restaurant	Coffee Shop	Hotel	Bar	Asian Restaurant	Korean Restaurant

In [49]:

```
## 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]))]]
```

Out[49]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
15	28.691136	3.390909	Average, Good, Very Good	485	2	Pizza Place	South Indian Restaurant	Garden	Farmers Market	Fried Chicken Joint	French Restaurant
22	28.654105	3.085714	Average	80	2	Pizza Place	Indie Movie Theater	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant	Food Truck
57	28.699837	3.376471	Average, Good, Very Good	2460	2	Pizza Place	Food Truck	Indie Movie Theater	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant
104	28.656263	3.097619	Average, Good	965	2	Pizza Place	Accessories Store	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint	French Restaurant
110	28.635391	3.040385	Average, Good, Poor, Very Good	2442	2	Pizza Place	Bakery	Office	Arcade	Farmers Market	Fried Chicken Joint
135	28.579641	3.180000	Average, Good	202	2	Pizza Place	Café	Department Store	South Indian Restaurant	Fried Chicken Joint	French Restaurant
235	28.652978	3.500000	Good	178	2	Fast Food Restaurant	Café	Hookah Bar	Multiplex	Shopping Mall	Clothing Store

In [50]:

```
## Examine Clusters

## 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]))]]
```

Out[50]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
0	28.668945	3.100000	Average	117	3	Indian Restaurant	ATM	Sandwich Place	Market	Multicuisine Indian Restaurant	
2	28.656131	3.275000	Average, Good	434	3	Pizza Place	Shopping Mall	Multiplex	Indian Restaurant	Hotel	
4	28.690020	3.033333	Average	126	3	Pizza Place	Indian Restaurant	Department Store	Donut Shop	Fast Food Restaurant	F
12	28.641698	3.050000	Average	17	3	Indian Restaurant	Campground	Movie Theater	Hotel	Hostel	
13	28.690182	3.090000	Average, Good, Poor	971	3	Pizza Place	Market	Indian Restaurant	Dessert Shop	Smoke Shop	BB
14	28.693969	3.378571	Average, Good	2343	3	Pizza Place	Asian Restaurant	Coffee Shop	Sandwich Place	South Indian Restaurant	Res
18	28.696302	3.300000	Average, Good	415	3	Pizza Place	Asian Restaurant	Coffee Shop	Sandwich Place	South Indian Restaurant	Res
23	28.656414	3.358182	Average, Good, Very Good	6668	3	Indian Restaurant	Snack Place	Market	Dessert Shop	Historic Site	
24	28.649658	3.800000	Average, Excellent, Good, Very Good	1410	3	Indian Restaurant	Paper / Office Supplies Store	Fast Food Restaurant	Light Rail Station	Hardware Store	

	25	28.495624	Lat	2.700000	Agg_Rating	Average	Comments	No_of_Votes	23	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	Cluster
	33	28.657388		3.320000		Average, Good		636	3		Indian Restaurant	Park	Hotel	Pizza Place	African Restaurant		F
	36	28.692546		3.480000		Average, Good		948	3		Fast Food Restaurant	Indian Restaurant	Shopping Mall	Coffee Shop	Diner	Pizza	
	42	28.576161		2.983333		Average, Good, Poor		542	3		Indian Restaurant	Women's Store	Fast Food Restaurant	Shopping Mall	Market		I
	43	28.643320		3.287500		Average, Good, Poor, Very Good		2570	3		Indian Restaurant	Hotel	Restaurant	Hostel	Movie Theater		
	44	28.574288		3.496154		Average, Good, Poor, Very Good		15579	3		Indian Restaurant	Italian Restaurant	Bakery	South Indian Restaurant	Market		
	46	28.573241		3.225000		Average, Good, Poor		1106	3		Restaurant	Indian Restaurant	Train Station	Northeast Indian Restaurant	Market		Res
	47	28.681582		3.046875		Average, Good, Poor		1224	3		Market	Indian Restaurant	Clothing Store	Gym	Women's Store		C
	49	28.602169		2.900000		Average		7	3		Indian Restaurant	Golf Course	Italian Restaurant	Convenience Store	North Indian Restaurant		
	55	28.617102		4.200000		Very Good		3010	3		Indian Restaurant	Women's Store	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint		Res
	61	28.668181		3.400000		Average		33	3		Pizza Place	Indian Restaurant	Ice Cream Shop	Food & Drink Shop	Bakery		F
	65	28.556980		3.272414		Average, Good, Poor		5243	3		Indian Restaurant	Coffee Shop	Donut Shop	Pizza Place	Fast Food Restaurant		Res
	66	28.699373		3.252174		Average, Good		973	3		Indian Restaurant	Snack Place	Boutique	Shopping Mall	Fried Chicken Joint		Res
	71	28.641003		3.650000		Average, Good		367	3		Indian Restaurant	Hotel	Road	Movie Theater	Hostel		S
	76	28.576785		3.200000		Average, Good		143	3		Indian Restaurant	Train Station	Northeast Indian Restaurant	Market	Farmers Market		C
	77	28.631728		3.060714		Average, Good, Poor, Very Good		1650	3		Indian Restaurant	Pizza Place	Market	Shopping Mall	Shop & Service		Gi
	80	28.611614		3.366667		Average, Good		291	3		ATM	Indian Restaurant	Government Building	Music Venue	Farmers Market		C
	84	28.630942		3.122000		Average, Good, Poor, Very Good		1738	3		Indian Restaurant	Pizza Place	Bakery	Ice Cream Shop	Fried Chicken Joint		Foo
	85	28.648885		3.561111		Average, Good, Very Good		7411	3		Indian Restaurant	Mosque	Metro Station	Flea Market	Snack Place		Fa: Res
	92	28.584294		3.100000		Average		35	3		Indian Restaurant	Electronics Store	Bakery	Record Shop	Metro Station		Fa: Res
	97	28.662972		3.533333		Average, Very Good		293	3		Indian Restaurant	Fried Chicken Joint	Moving Target	Vegetarian / Vegan Restaurant	Farmers Market		Res
		
	113	28.541242		2.984615		Average		817	3		Indian Restaurant	Bakery	Soccer Stadium	Pizza Place	African Restaurant		F
	116	28.486576		2.950000		Average		8	3		Furniture / Home Store	Indian Restaurant	Art Museum	Farmers Market	Frozen Yogurt Shop		C
	118	28.646549		3.200000		Average		20	3		Indian Restaurant	Restaurant	Road	Hotel	Event Space		Res

124	28.521760	Lat	4.200000	Agg_Rating	Very Good	Comments	No_of_Votes	278	Cluster Labels	1st Most Common Venue	Indian Sweet Shop	2nd Most Common Venue	Indian Restaurant	3rd Most Common Venue	Breakfast Common Venue	4th Most Common Venue	Indian Chinese Restaurant	5th Most Common Venue	Furniture / Home Store	6th Most Common Venue	Coffee Shop
126	28.602860			2.973214		Average, Good, Poor	1831		3	Pizza Place		Indian Restaurant		Bistro		Indian Chinese Restaurant		Furniture / Home Store		Coffee Shop	
133	28.708185			3.344444		Average, Good, Very Good	568		3	Historic Site		Indian Restaurant		Park		Falafel Restaurant		Fried Chicken Joint		Res	
138	28.556145			3.040909		Average, Good, Poor	637		3	Indian Restaurant		Bakery		Furniture / Home Store		Department Store		Sandwich Place		Steak	
140	28.627959			3.004167		Average	326		3	Indian Restaurant		Café		Women's Store		Farmers Market		Fried Chicken Joint		Res	
142	28.693270			3.519149		Average, Good, Very Good	7642		3	Fast Food Restaurant		Indian Restaurant		Shopping Mall		Coffee Shop		Diner		Pizza	
144	28.591092			3.200000		Average, Good, Poor	993		3	Indian Restaurant		Historic Site		Park		Mughlai Restaurant		Monument / Landmark		Coffee Shop	
153	28.608055			3.860000		Average, Good, Very Good	7978		3	Indian Restaurant		Smoke Shop		Art Gallery		Chinese Restaurant		Restaurant		Coffee Shop	
156	28.630734			3.185714		Average, Good	244		3	Indian Restaurant		Shopping Mall		Market		Gift Shop		Dessert Shop			
158	28.700027			3.157333		Average, Good, Poor	3974		3	Indian Restaurant		Light Rail Station		Market		Snack Place		Diner		Donut	
160	28.712975			3.066667		Average	121		3	Indian Restaurant		Pizza Place		Multiplex		Accessories Store		Farmers Market		Coffee Shop	
164	28.668055			3.393333		Average, Excellent, Good, Very Good	4670		3	Indian Restaurant		Convenience Store		Garden Center		Donut Shop		Coffee Shop		Hood	
165	28.539464			2.900000		Average	14		3	Indian Restaurant		Restaurant		Hotel		Modern European Restaurant		Food Truck		Mc Res	
172	28.644281			3.626804		Average, Excellent, Good, Poor, Very Good	25637		3	Indian Restaurant		Café		Market		Diner		Pub		Fast Res	
173	28.714176			3.352083		Average, Good, Poor, Very Good	4514		3	Department Store		Indian Restaurant		Light Rail Station		Fast Food Restaurant		Farmers Market			
176	28.562460			3.269231		Average, Good, Poor, Very Good	8739		3	Indian Restaurant		American Restaurant		Park		Convenience Store		Restaurant		Jaz	
181	28.571849			3.316667		Average, Good	472		3	Fast Food Restaurant		Pizza Place		Snack Place		Indian Restaurant		African Restaurant		F	
186	28.548922			3.715385		Average, Excellent, Good, Poor, Very Good	2882		3	Indian Restaurant		Bar		Furniture / Home Store		Australian Restaurant		Comedy Club		S	
193	28.569983			3.133333		Average, Good, Poor	988		3	Coffee Shop		Pizza Place		Indian Restaurant		Chinese Restaurant		Fast Food Restaurant		C	
199	28.601779			3.700000		Average, Good, Very Good	964		3	Indian Restaurant		Italian Restaurant		Hotel		Golf Course		Convenience Store		Res	
202	28.646593			3.280952		Average, Good, Very Good	1624		3	Indian Restaurant		Pizza Place		Light Rail Station		Park		Food Truck			
204	28.597038			3.533333		Average, Good, Very Good	902		3	Indian Restaurant		Nightclub		Mediterranean Restaurant		Coffee Shop		Chinese Restaurant			
209	28.631362			3.537500		Average, Good	1666		3	Indian Restaurant		Bakery		Asian Restaurant		Hotel Bar		Farmers Market			

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
211	28.579556	3.780000	Good	709	3	Indian Restaurant	Train Station	Seafood Restaurant	Bar	Chinese Restaurant	Café
222	28.628988	3.260000	Average, Good, Poor	239	3	Indian Restaurant	Sandwich Place	Hotel	Coffee Shop	Chinese Restaurant	Pizzeria
223	28.619954	2.905714	Average, Poor	242	3	ATM	Indian Restaurant	Farmers Market	Frozen Yogurt Shop	Fried Chicken Joint	Restaurant
231	28.637492	3.062264	Average, Good, Poor	1253	3	Pizza Place	Indian Restaurant	Ice Cream Shop	Fast Food Restaurant	Falafel Restaurant	Café

64 rows × 15 columns



In [51]:

```
## Examine Clusters

## 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]))]]
```

Out[51]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
1	28.537063	3.292308	Average, Good, Poor, Very Good	1560	4	Café	Indian Restaurant	Pub	Restaurant	Parsi Restaurant	Dim Sum Restaurant
7	28.541298	3.425000	Average, Good, Very Good	2460	4	Coffee Shop	Café	Fast Food Restaurant	Clothing Store	Asian Restaurant	Italian Restaurant
8	28.555599	3.800000	Average, Very Good	2411	4	Café	Stadium	Dessert Shop	Hotel	Other Great Outdoors	Coffee Shop
9	28.659870	3.281481	Average, Good	1309	4	Café	Pharmacy	Convenience Store	Park	Burger Joint	Burger Place
16	28.630440	3.208333	Average, Good, Poor	1779	4	Indian Restaurant	Hotel	Bakery	Theater	Café	Bar
17	28.557846	3.220000	Average, Good, Poor	1875	4	Café	Fast Food Restaurant	Restaurant	Pizza Place	Chinese Restaurant	Coffee Shop
20	28.568193	2.755556	Average, Poor	339	4	Lounge	Hotel	Fast Food Restaurant	Café	Bakery	Chinese Restaurant
21	28.589797	3.085714	Average, Good, Poor	1617	4	African Restaurant	Concert Hall	Park	Trail	Café	Women's Store
27	28.716874	3.400000	Average	134	4	Shopping Mall	Department Store	Café	Fast Food Restaurant	Multiplex	Incense Burner
28	28.650254	3.166667	Average, Good	1217	4	Fast Food Restaurant	Café	Indian Restaurant	Nightclub	Snack Place	Restaurant
30	28.561898	3.100000	Average, Good	1514	4	Café	Pizza Place	Lounge	Chinese Restaurant	Fast Food Restaurant	Coffee Shop
31	28.632091	3.779832	Average, Excellent, Good, Very Good	128107	4	Indian Restaurant	Café	Bar	Chinese Restaurant	Coffee Shop	Lounge
32	28.718351	3.150000	Average, Good	494	4	Pharmacy	Food Court	American Restaurant	Café	Clothing Store	BBQ Joint
39	28.543269	3.650000	Good	201	4	Coffee Shop	Café	Fast Food Restaurant	Clothing Store	Asian Restaurant	Italian Restaurant
40	28.528657	3.700000	Average, Good, Very Good	5920	4	Indian Restaurant	Bar	Clothing Store	Café	Lounge	Chinese Restaurant
41	28.542647	3.761538	Average, Good, Very Good	1946	4	Coffee Shop	Café	Fast Food Restaurant	Clothing Store	Asian Restaurant	Italian Restaurant

	Lat	Agg_Rating	Average, Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
45	28.696802	3.296298	Average, Excellent, Good, Poor, Very Good	19479	4	Café	Pizza Place	Coffee Shop	Chinese Restaurant	Central Mall	Fast Food Restaurant
58	28.514237	4.200000	Very Good	1561	4	Coffee Shop	Garden	Pub	Café	Mediterranean Restaurant	Asian Restaurant
62	28.550319	3.701562	Average, Excellent, Good, Very Good	10511	4	Indian Restaurant	Hotel	Café	Market	Australian Restaurant	Donut Shop
63	28.535531	3.553030	Average, Excellent, Good, Poor, Very Good	13894	4	Asian Restaurant	Indian Restaurant	Chinese Restaurant	Sandwich Place	Café	Italian Restaurant
64	28.538014	3.475000	Average, Good	369	4	Café	Restaurant	Indian Restaurant	Trail	Food Court	Sandwich Place
68	28.554275	3.845833	Average, Excellent, Good, Very Good	32573	4	Café	Indian Restaurant	Restaurant	Italian Restaurant	Bar	Bakery
75	28.569040	3.800000	Good, Very Good	1513	4	Lounge	Fast Food Restaurant	Café	Bakery	Chinese Restaurant	Gym/Fitness Center
78	28.597665	3.733333	Average, Good, Very Good	3121	4	Hotel	Indian Restaurant	Café	Chinese Restaurant	Restaurant	
79	28.631930	3.300000	Average, Good	168	4	Historic Site	Performing Arts Venue	Plaza	Udupi Restaurant	Fast Food Restaurant	Clothing Store
81	28.536611	3.380000	Average, Excellent	883	4	Café	Restaurant	Pizza Place	Ice Cream Shop	Chinese Restaurant	Asian Restaurant
82	28.548371	3.137500	Average, Good, Poor	609	4	Café	Indian Restaurant	Shopping Mall	Clothing Store	Women's Store	Fashion/Chic Jewelry
86	28.624632	3.315217	Average, Excellent, Good, Poor, Very Good	4011	4	Café	Park	Bakery	Gym	Women's Store	Fast Food Restaurant
88	28.626322	3.587500	Average, Excellent, Good, Very Good	9119	4	Indian Restaurant	Coffee Shop	Italian Restaurant	Café	Lounge	Fast Food Restaurant
89	28.539003	3.150000	Average, Good, Poor	893	4	Pizza Place	Café	Restaurant	Soccer Stadium	Dim Sum Restaurant	Fashion/Chic Jewelry
...
127	28.619410	3.134615	Average, Good, Poor	1648	4	Wings Joint	Ice Cream Shop	Juice Bar	Sandwich Place	Café	Women's Store
129	28.523047	2.925000	Average	26	4	Thai Restaurant	Bar	Monument / Landmark	Boutique	Whisky Bar	Lounge
143	28.564494	3.140625	Average, Good, Very Good	1548	4	Café	Indian Restaurant	Plaza	Movie Theater	Sandwich Place	Fast Food Restaurant
147	28.523307	3.430769	Average, Good, Poor, Very Good	2412	4	Multiplex	Pizza Place	Coffee Shop	Fast Food Restaurant	Tea Room	Cafe
148	28.642402	3.195652	Average, Good	2177	4	Shopping Mall	Coffee Shop	Multiplex	Fast Food Restaurant	Donut Shop	Restaurant
159	28.613748	3.900000	Average, Excellent	2313	4	Pool	Museum	Hockey Arena	History Museum	Art Museum	Historical Site
166	28.569093	3.175000	Average, Good, Poor, Very Good	2772	4	Thai Restaurant	Coffee Shop	Multiplex	Café	Asian Restaurant	Shopping Mall
175	28.546931	3.223077	Average, Good	606	4	Café	Indian Restaurant	Coffee Shop	Beer Garden	Sandwich Place	Market
178	28.520095	3.256250	Average, Good, Poor, Very Good	3917	4	Indian Restaurant	Convenience Store	Café	Pizza Place	Coffee Shop	Multiplex

	Lat	Agg_Rating	Average Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
179	28.572117	3.871429	Average, Good, Very Good	1871							
180	28.534499	3.000000	Average, Good, Poor	173	4	Café	Park	Women's Store	Frozen Yogurt Shop	Fried Chicken Joint	Fre Restaur
182	28.587918	3.541892	Average, Excellent, Good, Poor, Very Good	16386	4	Café	Indian Restaurant	Bistro	Plaza	Deli / Bodega	Sn Pl
184	28.528743	3.764000	Average, Excellent, Good, Poor, Very Good	9054	4	Indian Restaurant	Bar	Clothing Store	Café	Lounge	Chin Restaur
190	28.577107	3.100000	Average	114	4	Pizza Place	Convenience Store	Gourmet Shop	Bakery	Café	Fast Fi Restaur
191	28.522279	3.100000	Average	14	4	Thai Restaurant	Whisky Bar	Italian Restaurant	Café	Historic Site	Mal
192	28.526856	4.066667	Very Good	802	4	Indian Restaurant	Clothing Store	Bar	Café	Hotel	De Si
195	28.527731	3.450000	Average, Good	396	4	Indian Restaurant	Bar	Clothing Store	Lounge	Shopping Mall	C
200	28.564288	3.200000	Average	6	4	Coffee Shop	Café	Pizza Place	Burger Joint	Airport	Air Ser
201	28.651299	3.500000	Average, Good	479	4	Fast Food Restaurant	Indian Restaurant	Café	American Restaurant	Multiplex	Restaur
203	28.601187	3.633333	Average, Good	1018	4	Café	Coffee Shop	Bar	Chinese Restaurant	Asian Restaurant	Inc Restaur
207	28.625445	3.600000	Average, Good, Very Good	843	4	Indian Restaurant	Hotel	Café	Italian Restaurant	Mediterranean Restaurant	Lou
208	28.562469	2.971429	Average, Good, Poor	486	4	Café	Nightclub	Pizza Place	Lounge	Fast Food Restaurant	1 Restaur
210	28.661133	3.775000	Good, Very Good	460	4	Indian Restaurant	Café	Shopping Mall	Park	Hotel	Fre Restaur
214	28.561105	3.425000	Average, Good	246	4	Café	Pizza Place	Lounge	Chinese Restaurant	Fast Food Restaurant	Co Si
216	28.594859	3.800000	Good, Very Good	287	4	Hotel	Indian Restaurant	Café	Chinese Restaurant	Restaurant	
221	28.560593	3.733333	Average, Good, Very Good	615	4	Fast Food Restaurant	Park	Metro Station	Music Venue	Market	C
227	28.559704	3.278261	Average, Good, Very Good	1043	4	Café	Fast Food Restaurant	Restaurant	Chinese Restaurant	Pizza Place	Co Si
229	28.692519	3.606452	Average, Excellent, Good, Very Good	12271	4	Café	Indian Restaurant	Fast Food Restaurant	Cheese Shop	Chinese Restaurant	Cloth St
230	28.658041	3.400000	Average	19	4	Pharmacy	Convenience Store	Park	Burger Joint	Burrito Place	Des Si
234	28.630044	2.750000	Average, Poor	238	4	Sandwich Place	Indian Restaurant	Chinese Restaurant	Pizza Place	Restaurant	Fast Fi Restaur

72 rows × 15 columns



Conclusion:

Karol bagh,Kamla nagar ,Hauz Khas are some of the best neighborhoods for South Indian cuisine. Feroze Shah Road,Hauz Khas Village,janpath have the best South Indian Restaurant. Cannaught place, Rajouri garden, Malviya nagar are the best places for edible person. Greater kailash, Feroze shah road, Saket have best restaurants in New Delhi. ##### Cluster 1: It is most recommended for Fast Food Restaurants & Chinese Restaurants. ##### Cluster 2: It is most recommended for Hotels and Indian Restaurants. ##### Cluster 3 and Cluster 5: It is most recommended for Pizza and Cafe. ##### Cluster 4: It is most recommended for the Indian and Italian Restaurants.

