

Introduction

The capital of India, New Delhi has a population of 257,803, but the much larger metro area has a population of more than 26 million. The city is very diverse and has cultural taste from ranging from Chinese , Italian , French and more.

Objectives

Where is best Chinese Cuisine in New Delhi City? Where is the highest concentrations of Chinese Restaurant Market? What areas have the least number of restaurants? Where is the best place to stay if you want Chinese Cuisine ? What areas have the highest rated restaurants in New Delhi?

Data

New Delhi Restaurants data List Locality Restaurant Name Rating 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 : Foursquare API Description : Using this API we will get all the venues in each neighborhood.

Approach

Collect Delhi City data from Zomato Kaggle dataset Use Foursquare API to find all venues for each neighborhood. Filter all venues that are nearby by locality. Use aggregative rating for each restaurant to find the best places. Visualize the ranking of neighborhoods using folium library (Python)

```
In [1]: import pandas as pd
import numpy as np
import requests # Library to handle requests
from pandas.io.json import json_normalize # transform 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
```

Solving environment: done

Package Plan

environment location: /opt/conda/envs/Python36

added / updated specs:
- folium=0.5.0

The following packages will be downloaded:

package	build			
python_abi-3.6	1_cp36m	4 KB	conda-forge	
branca-0.4.1	py_0	26 KB	conda-forge	
ca-certificates-2020.6.20	hecda079_0	145 KB	conda-forge	
vincent-0.4.4	py_1	28 KB	conda-forge	
openssl-1.1.1g	h516909a_1	2.1 MB	conda-forge	
folium-0.5.0	py_0	45 KB	conda-forge	
altair-4.1.0	py_1	614 KB	conda-forge	
certifi-2020.6.20	py36h9f0ad1d_0	151 KB	conda-forge	
				Total: 3.1 MB

The following NEW packages will be INSTALLED:

altair:	4.1.0-py_1	conda-forge
branca:	0.4.1-py_0	conda-forge
folium:	0.5.0-py_0	conda-forge
python_abi:	3.6-1_cp36m	conda-forge
vincent:	0.4.4-py_1	conda-forge

The following packages will be UPDATED:

certifi:	2020.6.20-py36_0	---> 2020.6.20-py36h9f0ad1d_0
_0 conda-forge		
openssl:	1.1.1g-h7b6447c_0	---> 1.1.1g-h516909a_1
conda-forge		

The following packages will be DOWNGRADED:

ca-certificates:	2020.6.24-0	---> 2020.6.20-hecda079_0
conda-forge		

Downloading and Extracting Packages

python_abi-3.6	4 KB	##### #	10
0%			
branca-0.4.1	26 KB	##### #	10
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ca-certificates-2020	145 KB	##### #	10
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vincent-0.4.4	28 KB	##### #	10
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openssl-1.1.1g	2.1 MB	##### #	10
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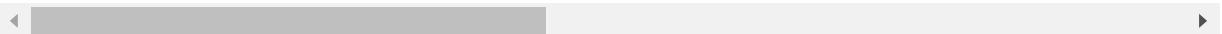
```
folium-0.5.0      | 45 KB     | #####| 10
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altair-4.1.0      | 614 KB    | #####| 10
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certifi-2020.6.20 | 151 KB    | #####| 10
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Preparing transaction: done
Verifying transaction: done
Executing transaction: done
Collecting geocoder
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b929a4227c952630ebaf0d729f6317eb09cbceccbab/geocoder-1.38.1-py2.py3-none-any.
whl (98kB)
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n3.6/site-packages (from geocoder) (2.21.0)
Collecting ratelim (from geocoder)
  Downloading https://files.pythonhosted.org/packages/f2/98/7e6d147fd16a10a5f
821db6e25f192265d6ecca3d82957a4fdd592cad49c/ratelim-0.1.6-py2.py3-none-any.wh
l
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6/site-packages (from geocoder) (7.0)
Requirement already satisfied: six in /opt/conda/envs/Python36/lib/python3.6/
site-packages (from geocoder) (1.12.0)
Requirement already satisfied: certifi>=2017.4.17 in /opt/conda/envs/Python3
6/lib/python3.6/site-packages (from requests->geocoder) (2020.6.20)
Requirement already satisfied: idna<2.9,>=2.5 in /opt/conda/envs/Python36/li
b/python3.6/site-packages (from requests->geocoder) (2.8)
Requirement already satisfied: urllib3<1.25,>=1.21.1 in /opt/conda/envs/Pytho
n36/lib/python3.6/site-packages (from requests->geocoder) (1.24.1)
Requirement already satisfied: chardet<3.1.0,>=3.0.2 in /opt/conda/envs/Pytho
n36/lib/python3.6/site-packages (from requests->geocoder) (3.0.4)
Requirement already satisfied: decorator in /opt/conda/envs/Python36/lib/pyth
on3.6/site-packages (from ratelim->geocoder) (4.3.2)
Installing collected packages: ratelim, geocoder
Successfully installed geocoder-1.38.1 ratelim-0.1.6
```

```
In [2]: df = pd.read_csv('https://raw.githubusercontent.com/haanjankur/Capstone-Proje
ct---The-Battle-of-Neighborhoods/master/zomato.csv',encoding='ISO-8859-1')
df.head()
```

Out[2]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	LocalityVerbose	Longitude
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenue...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.0275
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...	121.0141
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...	121.0568
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...	121.0564
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...	121.0575

5 rows × 21 columns



```
In [3]: 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[3]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude
0	18287358	Food Cloud	1	New Delhi	Aaya Nagar, New Delhi	Aaya Nagar	Aaya Nagar, New Delhi	0.000000	0.000000
1	18216944	Burger.in	1	New Delhi	84, Near Honda Showroom, Adchini, New Delhi	Adchini	Adchini, New Delhi	77.196923	28.535382
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
3	18384127	Dilli Ka Dhaba	1	New Delhi	66 A, Ground Floor, Sri Aurobindo Marg, Adchin...	Adchini	Adchini, New Delhi	77.198033	28.537547
4	582	Govardhan	1	New Delhi	84, Adjacent Hero Motor Bike Showroom, Main Me...	Adchini	Adchini, New Delhi	77.196924	28.535523

5 rows × 21 columns

```
In [4]: df_Res= df_NDLS[df_NDLS.Longitude !=0.000000][['Restaurant Name','Locality','Longitude','Latitude','Cuisines','Aggregate rating','Rating text','Votes']]
```

```
In [5]: df_Res = df_Res[df_Res['Aggregate rating'] !=0.0]
```

In [6]: df_Res.head()

Out[6]:

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

```
In [7]: 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[7]: Make this Notebook Trusted to load map: File -> Trust Notebook

In [9]: df_Res.head()

Out[9]:

	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

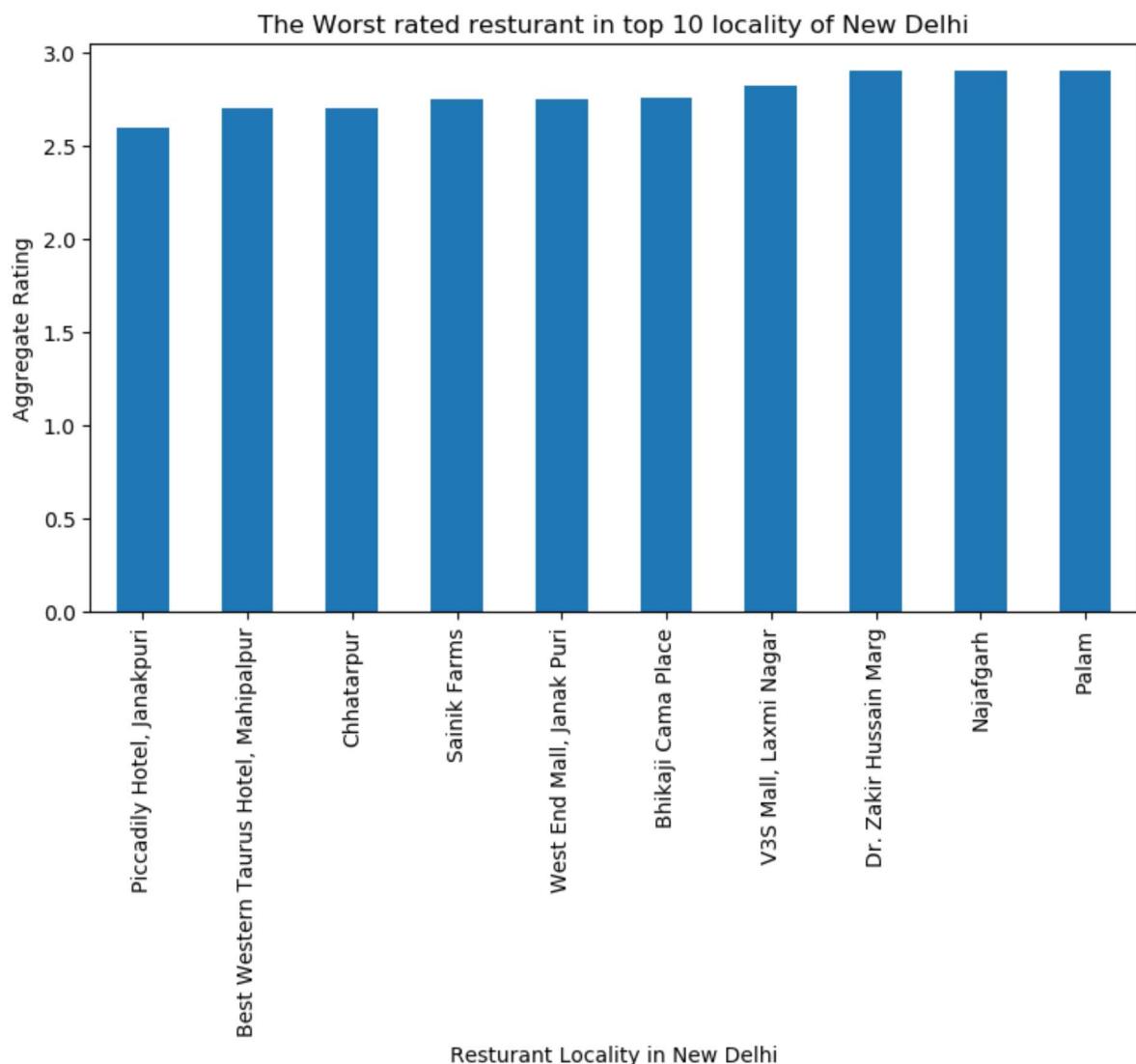
```
In [11]: import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The Worst rated restaurant in top 10 locality of New Delhi')
#On x-axis

#giving a bar plot

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

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

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

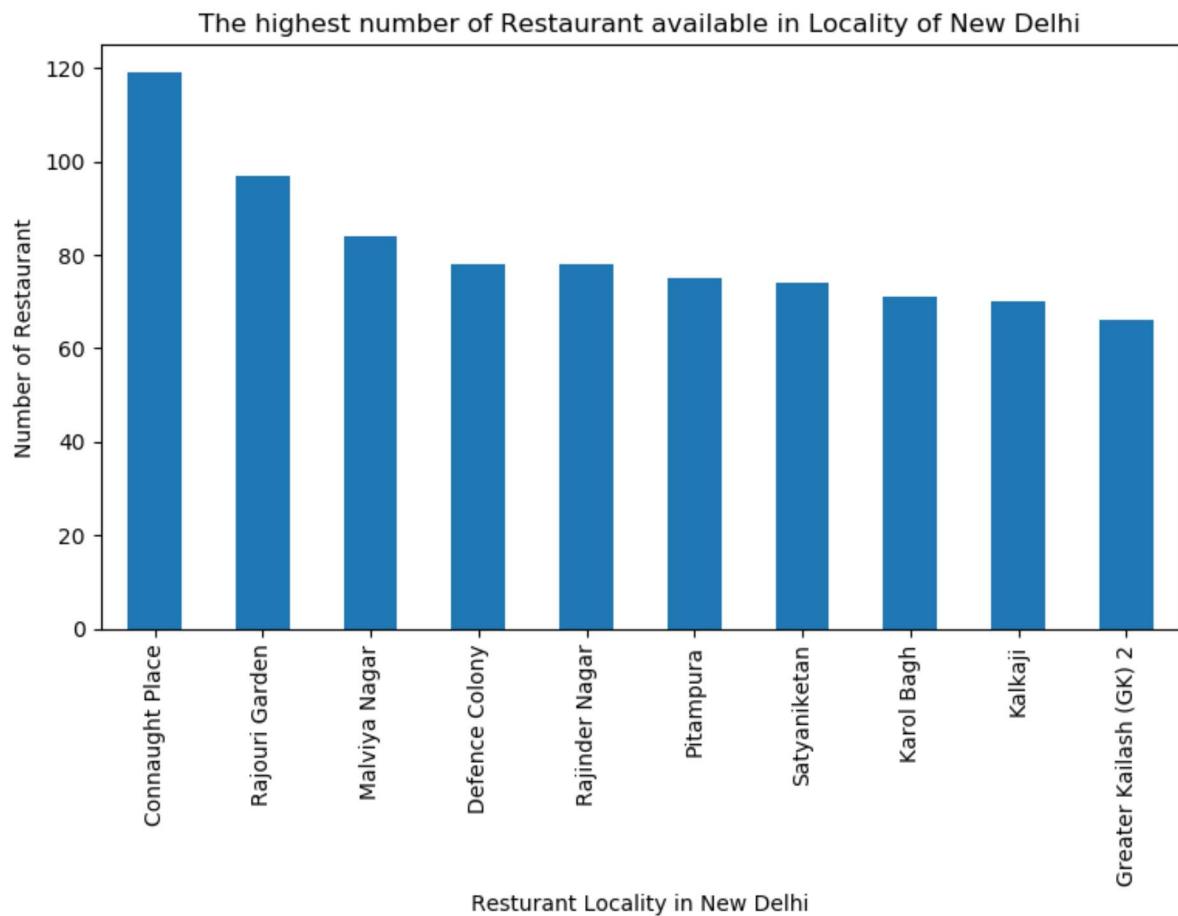


```
In [12]: import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The highest number of Restaurant available in Locality of New Delhi')
#On x-axis

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

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

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

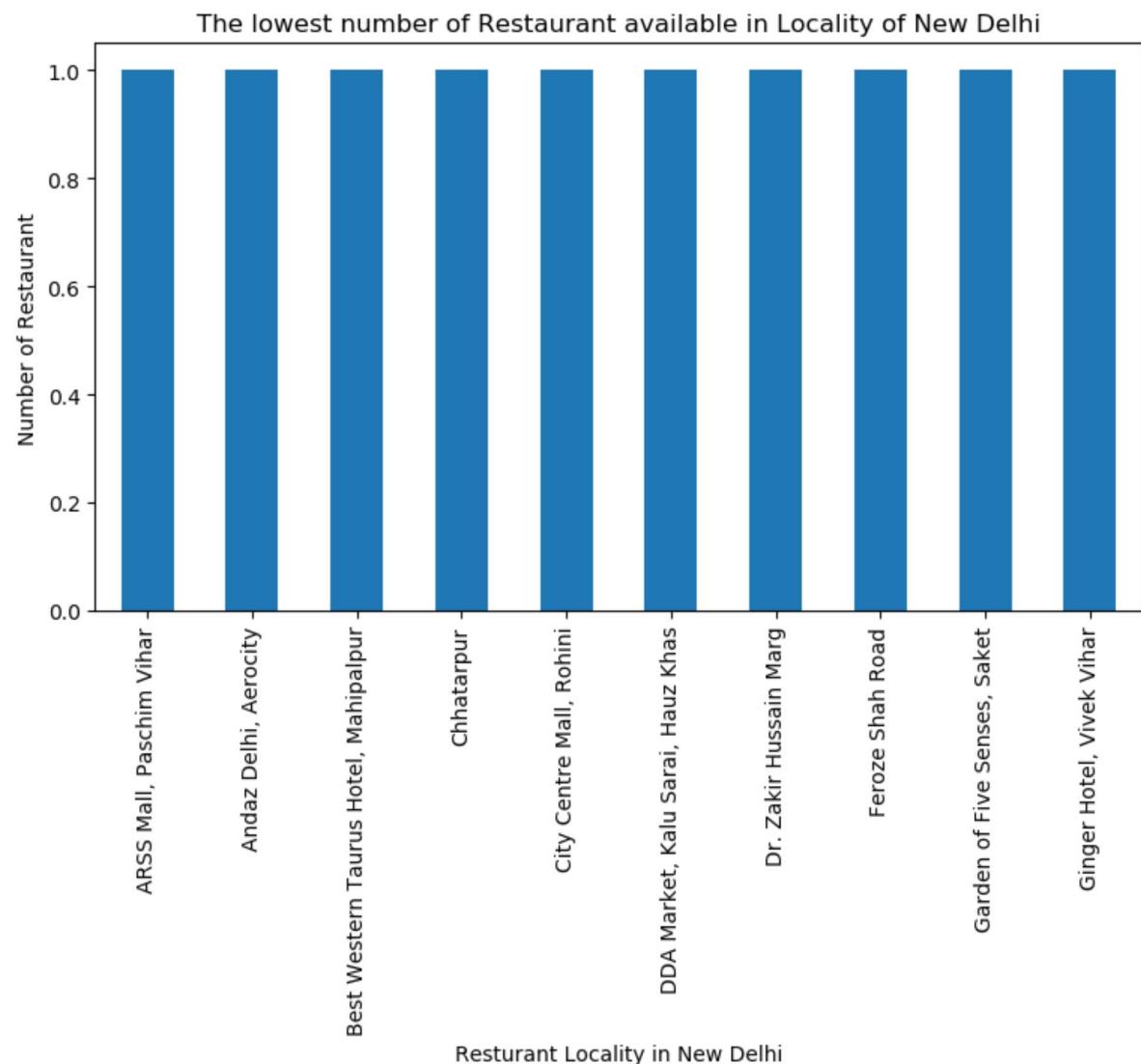


```
In [13]: import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The lowest number of Restaurant available in Locality of New Delhi')
)
#On x-axis

#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()
```

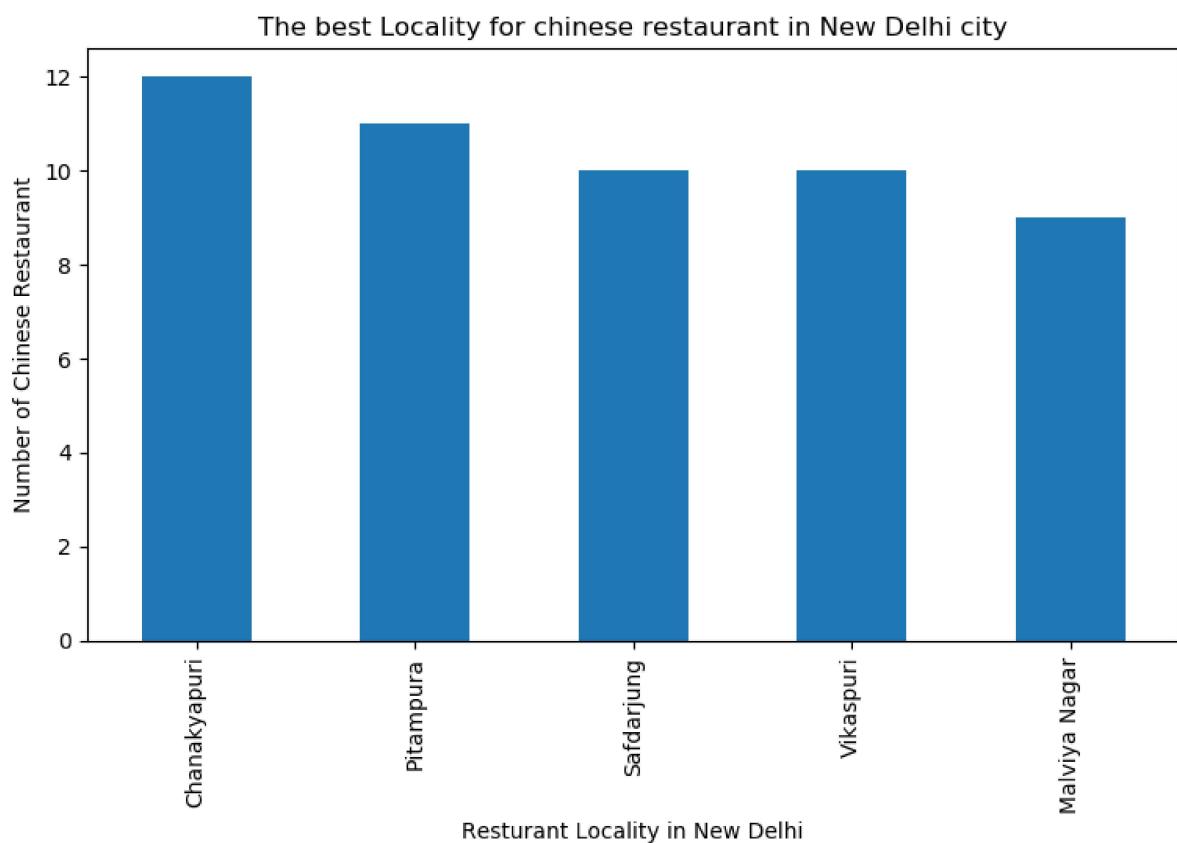


```
In [14]: import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The best Locality for chinese restaurant in New Delhi city')
#On x-axis

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

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

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

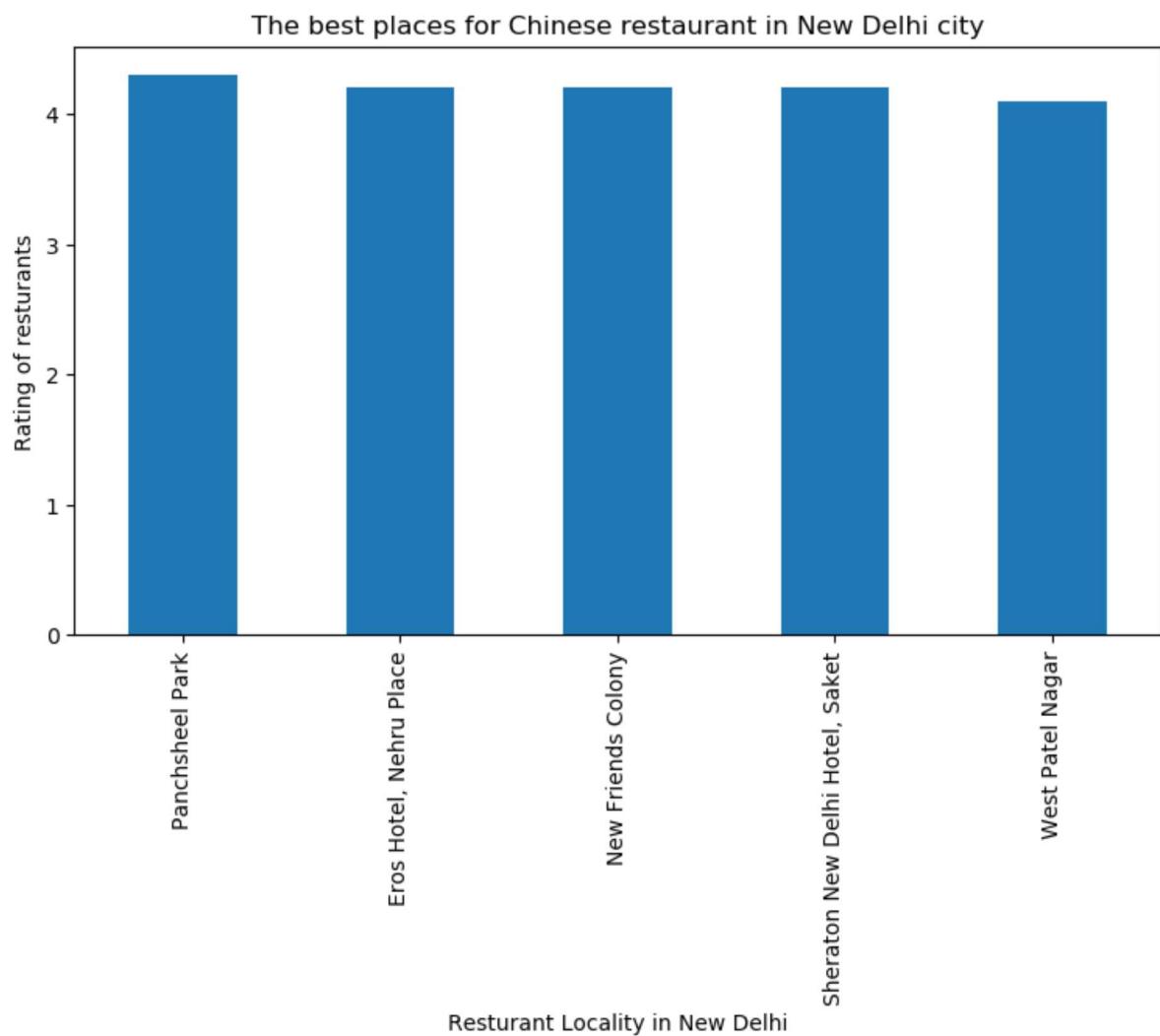


```
In [15]: import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('The best places for Chinese restaurant in New Delhi city')
#On x-axis

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

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

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



```
In [16]: 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 [17]: 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[17]:

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

In [18]: df_final.shape

Out[18]: (240, 8)

```
In [19]: ## Define Foursquare Credentials and Version
CLIENT_ID = 'ES3ZXR1ALGY0Q0YQVMG0RUMA000WTUNG4K1C2JN5C2J001AZ' # Foursquare ID
CLIENT_SECRET = 'H3VNVPVCUTEX4NP23B4ANBLXWZKKIZ0VM4NKN0IQRYPYXPTW' # Foursquare Secret
VERSION = '20180605' # Foursquare API version

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

Your credentails:

```
CLIENT_ID: ES3ZXR1ALGY0Q0YQVMG0RUMA000WTUNG4K1C2JN5C2J001AZ
CLIENT_SECRET:H3VNVPVCUTEX4NP23B4ANBLXWZKKIZ0VM4NKN0IQRYPYXPTW
```

```
In [20]: ## create a function to repeat the same process to all the Locality in New Delhi

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

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

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

        # make the GET request
        results = requests.get(url).json()["response"]["groups"][0]["items"]

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

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

    return(nearby_venues)
```

```
In [21]: # 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
Piccadilly 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 [22]: new_Delhi_venues.head()

Out[22]:

	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	Pizza Hut	28.670321	77.103853	Pizza Place
2	ARSS Mall, Paschim Vihar	28.668945	77.101544	Café Coffee Day	28.670009	77.102480	Coffee Shop
3	ARSS Mall, Paschim Vihar	28.668945	77.101544	Baljeet's Amritsari Koolcha	28.665768	77.100481	Indian Restaurant
4	ARSS Mall, Paschim Vihar	28.668945	77.101544	Little Chef	28.670000	77.101459	Chinese Restaurant

```
In [23]: new_Delhi_venues.groupby('Locality').count()
```

Out[23]:

	Locality Latitude	Locality Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Locality						
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
Aggarwal City Mall, Pitampura	4	4	4	4	4	4
Aggarwal City Plaza, Rohini	8	8	8	8	8	8
Alaknanda	4	4	4	4	4	4
Ambience Mall, Vasant Kunj	46	46	46	46	46	46
Anand Lok	12	12	12	12	12	12
Anand Vihar	6	6	6	6	6	6
Andaz Delhi, Aerocity	24	24	24	24	24	24
Ansal Plaza Mall, Khel Gaon Marg	7	7	7	7	7	7
Asaf Ali Road	6	6	6	6	6	6
Ashok Vihar Phase 1	8	8	8	8	8	8
Ashok Vihar Phase 2	7	7	7	7	7	7
Ashok Vihar Phase 3	4	4	4	4	4	4
Barakhamba Road	13	13	13	13	13	13
Basant Lok Market, Vasant Vihar	26	26	26	26	26	26
Bellagio, Ashok Vihar Phase 2	7	7	7	7	7	7
Best Western Taurus Hotel, Mahipalpur	8	8	8	8	8	8
Bhikaji Cama Place	15	15	15	15	15	15
Chanakyapuri	5	5	5	5	5	5
Chander Nagar	2	2	2	2	2	2
Chandni Chowk	18	18	18	18	18	18
Chawri Bazar	6	6	6	6	6	6
Chhatarpur	6	6	6	6	6	6
Chittaranjan Park	4	4	4	4	4	4
City Centre Mall, Rohini	10	10	10	10	10	10
City Square Mall, Rajouri Garden	23	23	23	23	23	23
Civil Lines	5	5	5	5	5	5
...
The Leela Ambience Convention Hotel	5	5	5	5	5	5

Locality	Locality Latitude	Locality Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Locality						
The Leela Palace, Chanakyapuri	13	13	13	13	13	13
The Lodhi, Lodhi Road	14	14	14	14	14	14
The Park, Connaught Place	28	28	28	28	28	28
The Suryaa New Delhi, New Friends Colony	21	21	21	21	21	21
The Taj Mahal Hotel, Mansingh Road	6	6	6	6	6	6
The Taj Palace Hotel, Chanakyapuri	34	34	34	34	34	34
The Uppal, Aerocity	4	4	4	4	4	4
The Village Restaurant Complex, Khel Gaon Marg	11	11	11	11	11	11
Tilak Nagar	5	5	5	5	5	5
Tughlakabad Institutional Area	6	6	6	6	6	6
Uday Park	8	8	8	8	8	8
Unity One Mall, Janakpuri	6	6	6	6	6	6
Uttam Nagar	4	4	4	4	4	4
V3S Mall, Laxmi Nagar	17	17	17	17	17	17
Vasant Kunj	8	8	8	8	8	8
Vasant Square Mall, Vasant Kunj	10	10	10	10	10	10
Vasant Vihar	29	29	29	29	29	29
Vasundhara Enclave	1	1	1	1	1	1
Vijay Nagar	12	12	12	12	12	12
Vikas Marg	5	5	5	5	5	5
Vikaspuri	4	4	4	4	4	4
Vivek Vihar	5	5	5	5	5	5
Wazirpur	1	1	1	1	1	1
West End Mall, Janak Puri	16	16	16	16	16	16
West Gate Mall, Rajouri Garden	17	17	17	17	17	17
West Patel Nagar	4	4	4	4	4	4
Worldmark 1, Aerocity	29	29	29	29	29	29
Yusuf Sarai	12	12	12	12	12	12
ibis New Delhi, Aerocity	27	27	27	27	27	27

240 rows × 6 columns

```
In [24]: print('There are {} uniques categories.'.format(len(new_Delhi_venues['Venue Category'].unique())))
```

There are 212 uniques categories.

```
In [25]: ## 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[25]:

	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Food Court	Airport Lounge	Airport Service	Airp Termii
0	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0
1	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0
2	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0
3	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0
4	ARSS Mall, Paschim Vihar	0	0	0	0	0	0	0	0	0

5 rows × 213 columns



```
In [26]: New_Delhi_grouped = new_Delhi_onehot.groupby('Locality').mean().reset_index()
New_Delhi_grouped
```

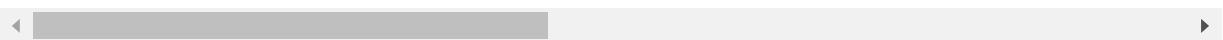
Out[26]:

	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Food Court	Airport Lounge	Ai Se
0	ARSS Mall, Paschim Vihar	0.111111	0.000000	0.0	0.0	0.0	0.0	0.000000	
1	Adchini	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
2	Aditya Mega Mall, Karkardooma	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
3	Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.0	0.142857	
4	Aggarwal City Mall, Pitampura	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
5	Aggarwal City Plaza, Rohini	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
6	Alaknanda	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
7	Ambience Mall, Vasant Kunj	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
8	Anand Lok	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
9	Anand Vihar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
10	Andaz Delhi, Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
11	Ansal Plaza Mall, Khel Gaon Marg	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
12	Asaf Ali Road	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
13	Ashok Vihar Phase 1	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
14	Ashok Vihar Phase 2	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
15	Ashok Vihar Phase 3	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
16	Barakhamba Road	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
17	Basant Lok Market, Vasant Vihar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
18	Bellagio, Ashok Vihar Phase 2	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
19	Best Western Taurus Hotel, Mahipalpur	0.000000	0.125000	0.0	0.0	0.0	0.0	0.000000	
20	Bhikaji Cama Place	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
21	Chanakyapuri	0.000000	0.000000	0.0	0.2	0.0	0.0	0.000000	

	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Food Court	Airport Lounge	Ai Se
22	Chander Nagar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
23	Chandni Chowk	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
24	Chawri Bazar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
25	Chhatarpur	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
26	Chittaranjan Park	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
27	City Centre Mall, Rohini	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
28	City Square Mall, Rajouri Garden	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
29	Civil Lines	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
...
210	The Leela Ambience Convention Hotel	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
211	The Leela Palace, Chanakyapuri	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
212	The Lodhi, Lodhi Road	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
213	The Park, Connaught Place	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
214	The Suryaa New Delhi, New Friends Colony	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
215	The Taj Mahal Hotel, Mansingh Road	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
216	The Taj Palace Hotel, Chanakyapuri	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
217	The Uppal, Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
218	The Village Restaurant Complex, Khel Gaon Marg	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
219	Tilak Nagar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	

	Locality	ATM	Accessories Store	Afghan Restaurant	African Restaurant	Airport	Airport Food Court	Airport Lounge	Ai Se
220	Tughlakabad Institutional Area	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
221	Uday Park	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
222	Unity One Mall, Janakpuri	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
223	Uttam Nagar	0.500000	0.000000	0.0	0.0	0.0	0.0	0.000000	
224	V3S Mall, Laxmi Nagar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
225	Vasant Kunj	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
226	Vasant Square Mall, Vasant Kunj	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
227	Vasant Vihar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
228	Vasundhara Enclave	1.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
229	Vijay Nagar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
230	Vikas Marg	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
231	Vikaspuri	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
232	Vivek Vihar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
233	Wazirpur	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
234	West End Mall, Janak Puri	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
235	West Gate Mall, Rajouri Garden	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
236	West Patel Nagar	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	
237	Worldmark 1, Aerocity	0.000000	0.034483	0.0	0.0	0.0	0.0	0.000000	
238	Yusuf Sarai	0.083333	0.000000	0.0	0.0	0.0	0.0	0.000000	
239	ibis New Delhi, Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.0	0.000000	

240 rows × 213 columns



In [27]: New_Delhi_grouped.shape

Out[27]: (240, 213)

In [28]: *## 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	Coffee Shop	0.11
3	Pizza Place	0.11
4	Multicuisine Indian Restaurant	0.11

----Adchini----

	venue	freq
0	Indian Restaurant	0.33
1	Café	0.33
2	Parsi Restaurant	0.17
3	Pub	0.17
4	ATM	0.00

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

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

----Aerocity----

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

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

	venue	freq
0	Café	0.25
1	Department Store	0.25
2	Pizza Place	0.25
3	Indian Restaurant	0.25
4	Nightlife Spot	0.00

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

	venue	freq
0	Fast Food Restaurant	0.12
1	Pizza Place	0.12
2	Indian Restaurant	0.12
3	Shopping Mall	0.12
4	Food Truck	0.12

----Alaknanda----

	venue	freq
0	Market	0.25

1	Coffee Shop	0.25
2	Food & Drink Shop	0.25
3	Steakhouse	0.25
4	Nightclub	0.00

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

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

----Anand Lok----

	venue	freq
0	Café	0.17
1	Stadium	0.17
2	Coffee Shop	0.08
3	Metro Station	0.08
4	Bank	0.08

----Anand Vihar----

	venue	freq
0	Café	0.33
1	South Indian Restaurant	0.17
2	Bank	0.17
3	Burger Joint	0.17
4	Burrito Place	0.17

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

	venue	freq
0	Hotel	0.38
1	Coffee Shop	0.08
2	Bakery	0.04
3	Bed & Breakfast	0.04
4	Thai Restaurant	0.04

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

	venue	freq
0	Fast Food Restaurant	0.14
1	Japanese Restaurant	0.14
2	Department Store	0.14
3	Karaoke Bar	0.14
4	Market	0.14

----Asaf Ali Road----

	venue	freq
0	Asian Restaurant	0.17
1	Hostel	0.17
2	Theme Park	0.17
3	Hotel	0.17

4 Indian Restaurant 0.17

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

	venue	freq
0	Pizza Place	0.12
1	Market	0.12
2	Dessert Shop	0.12
3	Bank	0.12
4	BBQ Joint	0.12

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

	venue	freq
0	Pizza Place	0.14
1	Coffee Shop	0.14
2	South Indian Restaurant	0.14
3	Sandwich Place	0.14
4	Asian Restaurant	0.14

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

	venue	freq
0	Pizza Place	0.25
1	South Indian Restaurant	0.25
2	Fast Food Restaurant	0.25
3	Garden	0.25
4	Jazz Club	0.00

----Barakhamba Road----

	venue	freq
0	Theater	0.15
1	Café	0.15
2	Bakery	0.15
3	Indian Restaurant	0.15
4	Hotel	0.08

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

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

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

	venue	freq
0	Pizza Place	0.14
1	Coffee Shop	0.14
2	South Indian Restaurant	0.14
3	Sandwich Place	0.14
4	Asian Restaurant	0.14

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

	venue	freq
0	Hotel	0.25
1	Shoe Store	0.12
2	Bed & Breakfast	0.12
3	Hotel Bar	0.12
4	Italian Restaurant	0.12

----Bhikaji Cama Place----

	venue	freq
0	Lounge	0.13
1	Hotel	0.13
2	Chinese Restaurant	0.07
3	Breakfast Spot	0.07
4	Asian Restaurant	0.07

----Chanakyapuri----

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

----Chander Nagar----

	venue	freq
0	Pizza Place	0.5
1	Fast Food Restaurant	0.5
2	Motel	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

----Chandni Chowk----

	venue	freq
0	Indian Restaurant	0.28
1	Snack Place	0.17
2	Dessert Shop	0.11
3	Market	0.11
4	Train Station	0.06

----Chawri Bazar----

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

----Chhatarpur----

	venue	freq
0	Luggage Store	0.17

1	Donut Shop	0.17
2	Indian Restaurant	0.17
3	Japanese Restaurant	0.17
4	Hotel	0.17

----Chittaranjan Park----

	venue	freq
0	Market	0.50
1	Ice Cream Shop	0.25
2	Chinese Restaurant	0.25
3	ATM	0.00
4	Moving Target	0.00

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

	venue	freq
0	Shopping Mall	0.3
1	Department Store	0.2
2	Café	0.1
3	Indian Restaurant	0.1
4	Multiplex	0.1

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

	venue	freq
0	Fast Food Restaurant	0.22
1	Indian Restaurant	0.13
2	Café	0.13
3	Pizza Place	0.04
4	Hookah Bar	0.04

----Civil Lines----

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

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

	venue	freq
0	Café	0.19
1	Italian Restaurant	0.05
2	Grocery Store	0.05
3	Middle Eastern Restaurant	0.05
4	Nightclub	0.05

----Connaught Place----

	venue	freq
0	Indian Restaurant	0.15
1	Café	0.11
2	Bar	0.08
3	Chinese Restaurant	0.06

4 Coffee Shop 0.05

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

	venue	freq
0	Pharmacy	0.25
1	Market	0.25
2	Food Court	0.25
3	Clothing Store	0.25
4	Mughlai Restaurant	0.00

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

	venue	freq
0	Pizza Place	0.4
1	Indian Restaurant	0.4
2	Hotel	0.2
3	Nightclub	0.0
4	Movie Theater	0.0

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

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

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

	venue	freq
0	Hotel	0.38
1	Department Store	0.08
2	Restaurant	0.08
3	Asian Restaurant	0.08
4	Liquor Store	0.08

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

	venue	freq
0	Indian Restaurant	0.18
1	Fast Food Restaurant	0.18
2	Coffee Shop	0.12
3	Diner	0.06
4	Liquor Store	0.06

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

	venue	freq
0	Event Space	0.25
1	Coffee Shop	0.25
2	Chinese Restaurant	0.25
3	Nightclub	0.25
4	North Indian Restaurant	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	Clothing Store	0.07
4	Shopping Mall	0.07

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

	venue	freq
0	Indian Restaurant	0.13
1	Lounge	0.06
2	Clothing Store	0.06
3	Café	0.06
4	Bar	0.06

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

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

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

	venue	freq
0	Indian Restaurant	0.27
1	Fast Food Restaurant	0.18
2	Women's Store	0.09
3	Market	0.09
4	Pizza Place	0.09

----Daryaganj----

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

----Defence Colony----

	venue	freq
0	Italian Restaurant	0.21

1	Indian Restaurant	0.16
2	Bakery	0.11
3	Café	0.11
4	Coffee Shop	0.05

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

	venue	freq
0	Café	0.36
1	North Indian Restaurant	0.09
2	Restaurant	0.09
3	Fast Food Restaurant	0.09
4	Chinese Restaurant	0.09

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

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

----Dilshad Garden----

	venue	freq
0	Indian Restaurant	0.4
1	Afghan Restaurant	0.2
2	Juice Bar	0.2
3	Gym	0.2
4	ATM	0.0

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

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

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

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

----East Patel Nagar----

	venue	freq
0	Pizza Place	0.14
1	Fast Food Restaurant	0.07
2	Hotel	0.07
3	Bar	0.07

4 Café 0.07

----East of Kailash----

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

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

		venue	freq
0	Indian Restaurant	0.09	
1	Fast Food Restaurant	0.06	
2	Coffee Shop	0.06	
3	Bar	0.06	
4	Hotel	0.06	

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

		venue	freq
0	Fast Food Restaurant	0.11	
1	Coffee Shop	0.11	
2	Dessert Shop	0.04	
3	Chinese Restaurant	0.04	
4	Gastropub	0.04	

----Essex Farms----

		venue	freq
0	Playground	0.2	
1	Comedy Club	0.2	
2	Coffee Shop	0.2	
3	Nightclub	0.2	
4	Event Space	0.2	

----Feroze Shah Road----

		venue	freq
0	Indian Restaurant	0.67	
1	Park	0.33	
2	Nightclub	0.00	
3	Movie Theater	0.00	
4	Moving Target	0.00	

----Friends Colony----

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

----GTB Nagar----

	venue	freq
0	Pizza Place	0.33
1	Food Truck	0.33
2	Juice Bar	0.33
3	Nightlife Spot	0.00
4	Moving Target	0.00

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

	venue	freq
0	Coffee Shop	0.29
1	Italian Restaurant	0.14
2	Asian Restaurant	0.14
3	Pub	0.14
4	Café	0.14

----Geeta Colony----

	venue	freq
0	Mobile Phone Shop	0.5
1	Burger Joint	0.5
2	ATM	0.0
3	Nightclub	0.0
4	Moving Target	0.0

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

	venue	freq
0	Hotel	0.33
1	Indian Restaurant	0.17
2	BBQ Joint	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	Bakery	0.2
4	Food & Drink Shop	0.2

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

	venue	freq
0	Indian Restaurant	0.14
1	Café	0.09
2	Market	0.09
3	Australian Restaurant	0.05
4	Hotel	0.05

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

	venue	freq
0	Italian Restaurant	0.08

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1 Chinese Restaurant 0.08
2 Indian Restaurant 0.08
3 Restaurant 0.08
4 Asian Restaurant 0.08

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

	venue	freq
0	Restaurant	0.14
1	Café	0.14
2	Sandwich Place	0.07
3	Trail	0.07
4	Bakery	0.07

----Green Park----

	venue	freq
0	Indian Restaurant	0.17
1	Coffee Shop	0.14
2	Chinese Restaurant	0.10
3	Donut Shop	0.07
4	Pizza Place	0.07

----Gujranwala Town----

	venue	freq
0	Snack Place	0.25
1	Shopping Mall	0.25
2	Bakery	0.25
3	Gym	0.25
4	ATM	0.00

----Hauz Khas----

	venue	freq
0	Chinese Restaurant	0.11
1	Dessert Shop	0.11
2	Coffee Shop	0.11
3	Bistro	0.07
4	Bar	0.07

----Hauz Khas Village----

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

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

	venue	freq
0	Hotel	0.31
1	Bed & Breakfast	0.07
2	Coffee Shop	0.07
3	Hotel Bar	0.07

4 Japanese Restaurant 0.03

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

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

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

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

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

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

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

	venue	freq
0	Pizza Place	0.15
1	Hotel	0.08
2	Café	0.08
3	Fast Food Restaurant	0.08
4	Breakfast Spot	0.08

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

	venue	freq
0	Hotel	0.17
1	Spa	0.10
2	Restaurant	0.07
3	Italian Restaurant	0.07
4	Chinese Restaurant	0.07

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

	venue	freq
0	Lounge	0.13
1	Hotel	0.13
2	Chinese Restaurant	0.07
3	Breakfast Spot	0.07
4	Asian Restaurant	0.07

----INA----

		venue	freq
0	Train Station	0.17	
1	Market	0.17	
2	Dim Sum Restaurant	0.17	
3	Northeast Indian Restaurant	0.17	
4	Spa	0.17	

----IP Extension----

		venue	freq
0	Indian Restaurant	0.2	
1	Pizza Place	0.1	
2	Market	0.1	
3	Café	0.1	
4	Food	0.1	

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

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

----ITO----

		venue	freq
0	Plaza	0.12	
1	Udupi Restaurant	0.12	
2	Café	0.12	
3	Art Museum	0.12	
4	Clothing Store	0.12	

----India Gate----

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

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

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

----JNU----

		venue	freq
0	Indian Restaurant	0.2	

1	Shopping Mall	0.2
2	Airport Food Court	0.2
3	Clothing Store	0.2
4	Café	0.2

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

	venue	freq
0	Hotel	0.33
1	Hotel Bar	0.07
2	Coffee Shop	0.07
3	Gym / Fitness Center	0.04
4	Bakery	0.04

----Jail Road----

	venue	freq
0	Indian Restaurant	0.29
1	Indian Sweet Shop	0.14
2	Ice Cream Shop	0.14
3	Food Court	0.14
4	Fried Chicken Joint	0.14

----Jama Masjid----

	venue	freq
0	Indian Restaurant	0.38
1	Snack Place	0.12
2	Frozen Yogurt Shop	0.12
3	Mosque	0.12
4	Flea Market	0.12

----Janakpuri----

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

----Jangpura----

	venue	freq
0	Fast Food Restaurant	0.14
1	BBQ Joint	0.14
2	Sandwich Place	0.14
3	Food	0.14
4	Chinese Restaurant	0.14

----Janpath----

	venue	freq
0	Indian Restaurant	0.14
1	Italian Restaurant	0.08
2	Coffee Shop	0.08
3	Lounge	0.05

4	Café	0.05
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----Jasola----

	venue	freq
0	Soccer Field	0.25
1	Soccer Stadium	0.25
2	Café	0.25
3	Pizza Place	0.25
4	Jazz Club	0.00

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

	venue	freq
0	Pizza Place	0.12
1	Fast Food Restaurant	0.12
2	Hotel	0.06
3	Smoke Shop	0.06
4	Bar	0.06

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

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

----Jor Bagh----

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

----Kailash Colony----

	venue	freq
0	Department Store	0.18
1	Indian Restaurant	0.12
2	Light Rail Station	0.12
3	Bar	0.12
4	Afghan Restaurant	0.06

----Kalkaji----

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

----Kamla Nagar----

	venue	freq
0	Fast Food Restaurant	0.14
1	Breakfast Spot	0.14
2	Dumpling Restaurant	0.09
3	Coffee Shop	0.09
4	Indian Restaurant	0.09

----Kapashera----

	venue	freq
0	Food Truck	0.25
1	Food Court	0.25
2	Music Store	0.25
3	Andhra Restaurant	0.25
4	ATM	0.00

----Karampura----

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

----Karkardooma----

	venue	freq
0	Pizza Place	0.25
1	Plaza	0.25
2	Food Truck	0.25
3	Train Station	0.25
4	Nightclub	0.00

----Karol Bagh----

	venue	freq
0	Indian Restaurant	0.26
1	Fast Food Restaurant	0.16
2	Hotel	0.11
3	Sandwich Place	0.05
4	Restaurant	0.05

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

	venue	freq
0	Café	0.21
1	Indian Restaurant	0.16
2	Market	0.11
3	Women's Store	0.05
4	Bakery	0.05

----Kashmiri Gate----

	venue	freq
0	Fast Food Restaurant	0.17

1	Pizza Place	0.17
2	American Restaurant	0.17
3	Bus Station	0.17
4	Metro Station	0.17

----Khan Market----

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

----Kirti Nagar----

	venue	freq
0	ATM	0.17
1	Convenience Store	0.17
2	Indian Restaurant	0.17
3	Pizza Place	0.17
4	Bakery	0.17

----Krishna Nagar----

	venue	freq
0	Pizza Place	0.50
1	Fast Food Restaurant	0.25
2	Accessories Store	0.25
3	Whisky Bar	0.00
4	Vietnamese Restaurant	0.00

----Lado Sarai----

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

----Lajpat Nagar 1----

	venue	freq
0	Market	0.14
1	Indian Restaurant	0.14
2	Coffee Shop	0.14
3	Cocktail Bar	0.14
4	Arcade	0.14

----Lajpat Nagar 2----

	venue	freq
0	Pizza Place	0.08
1	Market	0.08
2	Donut Shop	0.08
3	Coffee Shop	0.08

4 Fast Food Restaurant 0.08

----Lajpat Nagar 4----

	venue	freq
0	Market	0.18
1	Indian Restaurant	0.18
2	Café	0.18
3	Coffee Shop	0.09
4	Fast Food Restaurant	0.09

----Lawrence Road----

	venue	freq
0	Pharmacy	0.33
1	Convenience Store	0.17
2	Department Store	0.17
3	Basketball Court	0.17
4	Light Rail Station	0.17

----Laxmi Nagar----

	venue	freq
0	Café	0.17
1	Convenience Store	0.17
2	Indian Restaurant	0.17
3	Pizza Place	0.17
4	Arcade	0.17

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

	venue	freq
0	Hotel	0.25
1	Restaurant	0.12
2	Indian Restaurant	0.12
3	Chinese Restaurant	0.06
4	Cocktail Bar	0.06

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

	venue	freq
0	Hotel	0.33
1	Hotel Bar	0.07
2	Coffee Shop	0.07
3	Gym / Fitness Center	0.04
4	Bakery	0.04

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

	venue	freq
0	Indian Restaurant	0.4
1	Pizza Place	0.2
2	Soccer Stadium	0.2
3	Fast Food Restaurant	0.2
4	Neighborhood	0.0

----Lodhi Colony----

	venue	freq
0	Indian Restaurant	0.15
1	Deli / Bodega	0.08
2	Asian Restaurant	0.08
3	Modern European Restaurant	0.08
4	Flea Market	0.08

----Lodhi Road----

	venue	freq
0	Japanese Restaurant	0.06
1	Asian Restaurant	0.06
2	Pedestrian Plaza	0.06
3	Flea Market	0.06
4	Chinese Restaurant	0.06

----MG Road----

	venue	freq
0	Furniture / Home Store	0.33
1	Indian Restaurant	0.33
2	Art Museum	0.33
3	Nightlife Spot	0.00
4	Movie Theater	0.00

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

	venue	freq
0	Indian Restaurant	0.12
1	Lounge	0.07
2	Clothing Store	0.07
3	Bar	0.07
4	Chinese Restaurant	0.05

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

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

----Mahipalpur----

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

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

	venue	freq
0	Indian Restaurant	0.25

1	Hotel	0.25
2	Light Rail Station	0.25
3	Chinese Restaurant	0.25
4	ATM	0.00

----Majnu ka Tila----

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

----Malviya Nagar----

	venue	freq
0	Coffee Shop	0.2
1	Asian Restaurant	0.1
2	Pizza Place	0.1
3	Donut Shop	0.1
4	Convenience Store	0.1

----Mandi House----

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

----Mathura Road----

	venue	freq
0	Indian Sweet Shop	0.33
1	Breakfast Spot	0.33
2	Light Rail Station	0.33
3	Nightlife Spot	0.00
4	Moving Target	0.00

----Mayapuri Phase 2----

	venue	freq
0	Garden	0.33
1	Auto Garage	0.33
2	Restaurant	0.33
3	Nightclub	0.00
4	Movie Theater	0.00

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

	venue	freq
0	Indian Restaurant	0.4
1	Pizza Place	0.2
2	Gym / Fitness Center	0.2
3	Bistro	0.2

4	Nightclub	0.0
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----Mayur Vihar Phase 2----

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

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

	venue	freq
0	Hotel	1.0
1	ATM	0.0
2	Nightlife Spot	0.0
3	Movie Theater	0.0
4	Moving Target	0.0

----Mehrauli----

	venue	freq
0	Thai Restaurant	0.3
1	Bar	0.2
2	Historic Site	0.2
3	Lounge	0.1
4	Monument / Landmark	0.1

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

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

----Model Town 1----

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

----Model Town 2----

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

----Model Town ----

	venue	freq
0	Park	0.50
1	Indian Restaurant	0.25
2	Chinese Restaurant	0.25
3	ATM	0.00
4	Nightlife Spot	0.00

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

	venue	freq
0	Metro Station	0.17
1	Shopping Mall	0.17
2	Moving Target	0.08
3	Train Station	0.08
4	Fast Food Restaurant	0.08

----Moti Bagh----

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

----Moti Nagar----

	venue	freq
0	Fried Chicken Joint	0.5
1	Metro Station	0.5
2	ATM	0.0
3	Nightclub	0.0
4	Moving Target	0.0

----Mukherjee Nagar----

	venue	freq
0	Bakery	1.0
1	ATM	0.0
2	Nightclub	0.0
3	Movie Theater	0.0
4	Moving Target	0.0

----Munirka----

	venue	freq
0	Indian Restaurant	0.29
1	Pizza Place	0.14
2	Department Store	0.14
3	Pharmacy	0.14
4	Bakery	0.14

----Najafgarh----

	venue	freq
0	Discount Store	0.33

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1 Food & Drink Shop 0.33
2 Electronics Store 0.33
3 ATM 0.00
4 Nightlife Spot 0.00

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----Naraina----

	venue	freq
0	Pizza Place	0.25
1	Café	0.25
2	Indian Restaurant	0.25
3	Snack Place	0.25
4	Movie Theater	0.00

----Nehru Place----

	venue	freq
0	Fast Food Restaurant	0.06
1	Coffee Shop	0.06
2	Bar	0.06
3	Indian Restaurant	0.06
4	Hotel	0.06

----Netaji Subhash Place----

	venue	freq
0	Indian Restaurant	0.18
1	Fast Food Restaurant	0.18
2	Coffee Shop	0.12
3	Diner	0.06
4	Liquor Store	0.06

----New Friends Colony----

	venue	freq
0	Café	0.24
1	Pizza Place	0.06
2	Sandwich Place	0.06
3	Indian Restaurant	0.06
4	Hotel	0.06

----Nizamuddin----

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

----Okhla Phase 1----

	venue	freq
0	Cosmetics Shop	0.5
1	Spa	0.5
2	Nightclub	0.0
3	Movie Theater	0.0

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4 Moving Target 0.0
```

----Okhla Phase 2----

	venue	freq
0	Restaurant	0.5
1	Hotel	0.5
2	Nightlife Spot	0.0
3	Movie Theater	0.0
4	Moving Target	0.0

----PVR Anupam Complex----

	venue	freq
0	Café	0.2
1	Coffee Shop	0.2
2	Multiplex	0.2
3	Lounge	0.2
4	Pizza Place	0.2

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

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

----Paharganj----

	venue	freq
0	Hotel	0.38
1	Indian Restaurant	0.10
2	Restaurant	0.08
3	Café	0.05
4	Bar	0.03

----Palam----

	venue	freq
0	Pharmacy	0.5
1	Bar	0.5
2	Nightclub	0.0
3	Movie Theater	0.0
4	Moving Target	0.0

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

	venue	freq
0	Golf Course	0.25
1	Bakery	0.25
2	Light Rail Station	0.25
3	Campground	0.25
4	ATM	0.00

----Panchsheel Park----

	venue	freq
0	Hobby Shop	0.17
1	Pizza Place	0.17
2	Bar	0.17
3	American Restaurant	0.17
4	Event Space	0.17

----Pandara Road Market----

	venue	freq
0	Indian Restaurant	0.31
1	Snack Place	0.06
2	Art Gallery	0.06
3	Cafeteria	0.06
4	Food & Drink Shop	0.06

----Pandav Nagar----

	venue	freq
0	Dessert Shop	0.22
1	Metro Station	0.11
2	Convenience Store	0.11
3	Park	0.11
4	Food & Drink Shop	0.11

----Paschim Vihar----

	venue	freq
0	Pizza Place	0.12
1	Coffee Shop	0.12
2	Garden	0.12
3	Multicuisine Indian Restaurant	0.12
4	Sandwich Place	0.12

----Patparganj----

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

----Piccadilly Hotel, Janakpuri----

	venue	freq
0	Chinese Restaurant	0.20
1	Sandwich Place	0.13
2	Indian Restaurant	0.13
3	Pizza Place	0.07
4	Fast Food Restaurant	0.07

----Pitampura---

	venue	freq
0	Gym	0.25

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1           Market  0.12
2       Snack Place  0.12
3 Indian Restaurant  0.12
4   Ice Cream Shop  0.12

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----Pragati Maidan----

	venue	freq
0	Pool	0.25
1	Historic Site	0.12
2	History Museum	0.12
3	Café	0.12
4	Art Museum	0.12

----Prashant Vihar----

	venue	freq
0	Indian Restaurant	0.38
1	Pizza Place	0.25
2	Airport	0.12
3	Shopping Mall	0.12
4	Multiplex	0.12

----Preet Vihar----

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

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

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

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

	venue	freq
0	Hotel	0.35
1	Coffee Shop	0.08
2	Hotel Bar	0.08
3	Lounge	0.04
4	Shopping Mall	0.04

----Punjabi Bagh----

	venue	freq
0	Chinese Restaurant	0.14
1	Garden Center	0.14
2	Convenience Store	0.14
3	Indian Restaurant	0.14

4 Donut Shop 0.14

----Qutab Institutional Area----

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

----R K Puram----

	venue	freq
0	Thai Restaurant	0.1
1	Comfort Food Restaurant	0.1
2	Asian Restaurant	0.1
3	Coffee Shop	0.1
4	Café	0.1

----Race Course----

	venue	freq
0	Women's Store	0.2
1	Food	0.2
2	Racetrack	0.2
3	History Museum	0.2
4	Gym / Fitness Center	0.2

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

	venue	freq
0	Hotel	0.25
1	Thai Restaurant	0.12
2	Plaza	0.12
3	Spa	0.12
4	Hotel Bar	0.12

----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	Multicuisine Indian Restaurant	0.1
3	Spa	0.1
4	Bar	0.1

----Rajinder Nagar----

	venue	freq
0	Pizza Place	0.14
1	Food & Drink Shop	0.14
2	Bakery	0.14
3	Sandwich Place	0.14
4	Gym / Fitness Center	0.14

----Rajouri Garden----

	venue	freq
0	Indian Restaurant	0.18
1	Café	0.18
2	Bakery	0.18
3	Fast Food Restaurant	0.09
4	Diner	0.09

----Rohini----

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

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

	venue	freq
0	Hotel	0.33
1	Hotel Bar	0.07
2	Coffee Shop	0.07
3	Gym / Fitness Center	0.04
4	Bakery	0.04

----SDA----

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

----Safdarjung----

	venue	freq
0	Indian Restaurant	0.2
1	Café	0.1
2	Restaurant	0.1
3	Jazz Club	0.1
4	Nightclub	0.1

----Sainik Farms----

	venue	freq
0	Asian Restaurant	0.4

1	Indian Restaurant	0.2
2	Pub	0.2
3	Bakery	0.2
4	ATM	0.0

----Saket----

	venue	freq
0	Convenience Store	0.22
1	Coffee Shop	0.11
2	Multiplex	0.11
3	Falafel Restaurant	0.11
4	Lounge	0.11

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

	venue	freq
0	Multiplex	0.15
1	Coffee Shop	0.15
2	Asian Restaurant	0.08
3	Comfort Food Restaurant	0.08
4	Thai Restaurant	0.08

----Sarita Vihar----

	venue	freq
0	Café	0.67
1	Arcade	0.33
2	ATM	0.00
3	Moving Target	0.00
4	Mughlai Restaurant	0.00

----Sarojini Nagar----

	venue	freq
0	Fast Food Restaurant	0.50
1	Pizza Place	0.25
2	Snack Place	0.25
3	Pedestrian Plaza	0.00
4	Performing Arts Venue	0.00

----Satyaniketan----

	venue	freq
0	Café	0.29
1	Snack Place	0.14
2	Bistro	0.14
3	Plaza	0.14
4	Deli / Bodega	0.14

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

	venue	freq
0	Train Station	0.33
1	Light Rail Station	0.33
2	Farmers Market	0.33
3	ATM	0.00

4	Nightclub	0.00
---	-----------	------

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

	venue	freq
0	Indian Restaurant	0.13
1	Lounge	0.06
2	Clothing Store	0.06
3	Café	0.06
4	Bar	0.06

----Shahdara----

	venue	freq
0	Park	0.33
1	Mobile Phone Shop	0.33
2	Chocolate Shop	0.33
3	ATM	0.00
4	Nightclub	0.00

----Shahpur Jat----

	venue	freq
0	Bar	0.29
1	Furniture / Home Store	0.14
2	Indian Restaurant	0.14
3	Stadium	0.14
4	Chinese Restaurant	0.14

----Shakarpur----

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

----Shalimar Bagh----

	venue	freq
0	Convenience Store	0.17
1	Pizza Place	0.17
2	Coffee Shop	0.17
3	Hotel	0.17
4	Bakery	0.17

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

	venue	freq
0	Hotel	0.19
1	Spa	0.12
2	Italian Restaurant	0.08
3	Indian Restaurant	0.08
4	Chinese Restaurant	0.08

----Shanti Niketan Marg----

	venue	freq
0	Café	0.2
1	Convenience Store	0.2
2	Pizza Place	0.2
3	Gourmet Shop	0.2
4	Bakery	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	0.16
1	Clothing Store	0.08
2	Bar	0.06
3	Chinese Restaurant	0.05
4	Donut Shop	0.05

----South Extension 1----

	venue	freq
0	Coffee Shop	0.23
1	Indian Restaurant	0.23
2	Pizza Place	0.15
3	Bridal Shop	0.08
4	Fast Food Restaurant	0.08

----South Extension 2----

	venue	freq
0	Coffee Shop	0.20
1	Pizza Place	0.13
2	Indian Restaurant	0.13
3	Market	0.13
4	Clothing Store	0.13

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

	venue	freq
0	Indian Restaurant	0.12
1	Lounge	0.07
2	Clothing Store	0.07
3	Bar	0.07
4	Chinese Restaurant	0.06

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

	venue	freq
0	Fast Food Restaurant	0.11

1	Breakfast Spot	0.11
2	Pizza Place	0.07
3	Dumpling Restaurant	0.07
4	Dessert Shop	0.07

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

	venue	freq
0	Hotel	0.29
1	Department Store	0.12
2	Restaurant	0.12
3	American Restaurant	0.06
4	Bakery	0.06

----Subhash Nagar----

	venue	freq
0	Pizza Place	0.17
1	Skating Rink	0.17
2	Park	0.17
3	Multiplex	0.17
4	Sculpture Garden	0.17

----Sunder Nagar----

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

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

	venue	freq
0	Coffee Shop	0.21
1	Café	0.14
2	Airport Terminal	0.14
3	Airport Service	0.14
4	Rest Area	0.07

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

	venue	freq
0	Café	0.17
1	Fast Food Restaurant	0.17
2	Indian Restaurant	0.12
3	Hotel	0.04
4	Nightclub	0.04

----Tagore Garden----

	venue	freq
0	BBQ Joint	0.12
1	Clothing Store	0.12
2	Garden	0.12
3	Indian Restaurant	0.12

4 Pizza Place 0.12

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

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

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

	venue	freq
0	Nightclub	0.20
1	Indian Restaurant	0.20
2	Café	0.07
3	Chinese Restaurant	0.07
4	Mediterranean Restaurant	0.07

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

	venue	freq
0	Hotel	0.22
1	North Indian Restaurant	0.11
2	Hotel Bar	0.11
3	Breakfast Spot	0.11
4	Mediterranean Restaurant	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	Restaurant	0.04
4	Beer Garden	0.04

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

	venue	freq
0	Hotel	0.13
1	Italian Restaurant	0.10
2	Indian Restaurant	0.10
3	Coffee Shop	0.06
4	Café	0.06

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

	venue	freq
0	Café	0.21
1	Pizza Place	0.05
2	Sandwich Place	0.05
3	Indian Restaurant	0.05
4	Hotel	0.05

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

	venue	freq
0	Indian Restaurant	0.29
1	Bakery	0.29
2	North Indian Restaurant	0.14
3	Hotel Bar	0.14
4	Asian Restaurant	0.14

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

	venue	freq
0	Pizza Place	0.2
1	Indian Restaurant	0.2
2	Shopping Mall	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	Seafood Restaurant	0.08
4	French Restaurant	0.08

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

	venue	freq
0	Indian Restaurant	0.14
1	Chinese Restaurant	0.14
2	Pizza Place	0.07
3	Hotel	0.07
4	Spa	0.07

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

	venue	freq
0	Hotel	0.18
1	Italian Restaurant	0.07
2	Coffee Shop	0.07
3	Spa	0.07
4	Mediterranean Restaurant	0.07

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

	venue	freq
0	Café	0.19
1	Italian Restaurant	0.05
2	Grocery Store	0.05
3	Middle Eastern Restaurant	0.05
4	Nightclub	0.05

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

	venue	freq
0	Chinese Restaurant	0.17

1	Restaurant	0.17
2	Indian Restaurant	0.17
3	Japanese Restaurant	0.17
4	Hotel Bar	0.17

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

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

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

	venue	freq
0	Hotel	0.75
1	Indian Restaurant	0.25
2	ATM	0.00
3	Nightclub	0.00
4	Movie Theater	0.00

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

	venue	freq
0	Bar	0.18
1	Hotel	0.09
2	Coffee Shop	0.09
3	Australian Restaurant	0.09
4	Stadium	0.09

----Tilak Nagar----

	venue	freq
0	Fast Food Restaurant	0.4
1	Restaurant	0.2
2	Indian Restaurant	0.2
3	Ice Cream Shop	0.2
4	ATM	0.0

----Tughlakabad Institutional Area----

	venue	freq
0	Market	0.17
1	Bar	0.17
2	Hotel	0.17
3	Steakhouse	0.17
4	Chinese Restaurant	0.17

----Uday Park----

	venue	freq
0	Café	0.12
1	Metro Station	0.12
2	Pizza Place	0.12
3	Park	0.12

```
4      Bank  0.12
```

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

	venue	freq
0	Sandwich Place	0.33
1	Pizza Place	0.17
2	Indian Restaurant	0.17
3	Coffee Shop	0.17
4	Chinese Restaurant	0.17

----Uttam Nagar----

	venue	freq
0	ATM	0.5
1	Indian Restaurant	0.5
2	Wings Joint	0.0
3	Whisky Bar	0.0
4	Motel	0.0

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

	venue	freq
0	Gift Shop	0.06
1	Bakery	0.06
2	Dessert Shop	0.06
3	Office	0.06
4	Fast Food Restaurant	0.06

----Vasant Kunj----

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

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

	venue	freq
0	Pizza Place	0.1
1	Spa	0.1
2	Café	0.1
3	Fast Food Restaurant	0.1
4	Sandwich Place	0.1

----Vasant Vihar----

	venue	freq
0	Café	0.14
1	Fast Food Restaurant	0.10
2	Coffee Shop	0.07
3	Chinese Restaurant	0.07
4	Restaurant	0.07

----Vasundhara Enclave----

	venue	freq
0	ATM	1.0
1	Mosque	0.0
2	Movie Theater	0.0
3	Moving Target	0.0
4	Mughlai Restaurant	0.0

----Vijay Nagar----

	venue	freq
0	Café	0.33
1	Tea Room	0.08
2	North Indian Restaurant	0.08
3	Chinese Restaurant	0.08
4	Fast Food Restaurant	0.08

----Vikas Marg----

	venue	freq
0	Café	0.2
1	South Indian Restaurant	0.2
2	Bank	0.2
3	Burger Joint	0.2
4	Burrito Place	0.2

----Vikaspuri----

	venue	freq
0	Beer Garden	0.25
1	Fast Food Restaurant	0.25
2	Pizza Place	0.25
3	Indian Restaurant	0.25
4	Pet Store	0.00

----Vivek Vihar----

	venue	freq
0	Juice Bar	0.4
1	Department Store	0.2
2	Bed & Breakfast	0.2
3	Athletics & Sports	0.2
4	Nightlife Spot	0.0

----Wazirpur----

	venue	freq
0	Bank	1.0
1	ATM	0.0
2	Nightclub	0.0
3	Movie Theater	0.0
4	Moving Target	0.0

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

	venue	freq
0	Chinese Restaurant	0.19

1	Indian Restaurant	0.12
2	Sandwich Place	0.12
3	Pizza Place	0.06
4	BBQ Joint	0.06

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

	venue	freq
0	Fast Food Restaurant	0.18
1	Café	0.18
2	Snack Place	0.06
3	Gym / Fitness Center	0.06
4	Shopping Mall	0.06

----West Patel Nagar----

	venue	freq
0	Pizza Place	0.25
1	Park	0.25
2	Juice Bar	0.25
3	Metro Station	0.25
4	Nightclub	0.00

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

	venue	freq
0	Hotel	0.31
1	Bed & Breakfast	0.07
2	Coffee Shop	0.07
3	Hotel Bar	0.07
4	Japanese Restaurant	0.03

----Yusuf Sarai----

	venue	freq
0	Indian Restaurant	0.17
1	Coffee Shop	0.17
2	ATM	0.08
3	Asian Restaurant	0.08
4	Ice Cream Shop	0.08

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

	venue	freq
0	Hotel	0.33
1	Hotel Bar	0.07
2	Coffee Shop	0.07
3	Gym / Fitness Center	0.04
4	Bakery	0.04

```
In [29]: ## 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 [30]: *## 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[30]:

	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	
0	ARSS Mall, Paschim Vihar	Indian Restaurant	Sandwich Place	Chinese Restaurant	Coffee Shop	Market	Multicuisine Indian Restaurant	I
1	Adchini	Indian Restaurant	Café	Parsi Restaurant	Pub	English Restaurant	Food Truck	
2	Aditya Mega Mall, Karkardooma	Indian Restaurant	Shopping Mall	Pizza Place	Multiplex	Hotel	Café	
3	Aerocity	Hotel	Rental Car Location	Coffee Shop	Airport Lounge	Fast Food Restaurant	Airport Terminal	F
4	Aggarwal City Mall, Pitampura	Indian Restaurant	Pizza Place	Department Store	Café	English Restaurant	Food Truck	
5	Aggarwal City Plaza, Rohini	Indian Restaurant	Shopping Mall	Pizza Place	Fast Food Restaurant	Sandwich Place	Multiplex	Gy
6	Alaknanda	Coffee Shop	Food & Drink Shop	Steakhouse	Market	Women's Store	Falafel Restaurant	
7	Ambience Mall, Vasant Kunj	Coffee Shop	Asian Restaurant	Italian Restaurant	Fast Food Restaurant	Clothing Store	Café	Sh
8	Anand Lok	Stadium	Café	Metro Station	Music Venue	Hotel	Dessert Shop	(
9	Anand Vihar	Café	South Indian Restaurant	Bank	Burger Joint	Burrito Place	Women's Store	
10	Andaz Delhi, Aerocity	Hotel	Coffee Shop	Bakery	Japanese Restaurant	Gym / Fitness Center	Lounge	
11	Ansal Plaza Mall, Khel Gaon Marg	Department Store	Japanese Restaurant	Sporting Goods Shop	Karaoke Bar	Electronics Store	Fast Food Restaurant	
12	Asaf Ali Road	Indian Restaurant	Hotel	Movie Theater	Hostel	Theme Park	Asian Restaurant	E
13	Ashok Vihar Phase 1	Indian Restaurant	Market	Pizza Place	Dessert Shop	Snack Place	Bank	
14	Ashok Vihar Phase 2	Indian Restaurant	Asian Restaurant	Snack Place	Coffee Shop	Pizza Place	South Indian Restaurant	
15	Ashok Vihar Phase 3	Pizza Place	South Indian Restaurant	Garden	Fast Food Restaurant	Women's Store	Event Space	
16	Barakhamba Road	Indian Restaurant	Theater	Bakery	Café	Hotel	Pool	
17	Basant Lok Market, Vasant Vihar	Café	Fast Food Restaurant	Restaurant	Pizza Place	Coffee Shop	Chinese Restaurant	I

	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
18	Bellagio, Ashok Vihar Phase 2	Indian Restaurant	Asian Restaurant	Snack Place	Coffee Shop	Pizza Place	South Indian Restaurant
19	Best Western Taurus Hotel, Mahipalpur	Hotel	Indian Restaurant	Hotel Bar	Italian Restaurant	Bed & Breakfast	Shoe Store
20	Bhikaji Cama Place	Hotel	Lounge	Modern European Restaurant	Gym / Fitness Center	Nightclub	Chinese Restaurant
21	Chanakyapuri	Concert Hall	African Restaurant	Trail	Café	Park	Department Store
22	Chander Nagar	Pizza Place	Fast Food Restaurant	Fried Chicken Joint	Food Truck	Food Court	Food & Drink Shop
23	Chandni Chowk	Indian Restaurant	Snack Place	Market	Dessert Shop	Train Station	Jewelry Store
24	Chawri Bazar	Indian Restaurant	Hardware Store	Paper / Office Supplies Store	Fast Food Restaurant	Light Rail Station	Snack Place
25	Chhatarpur	Indian Restaurant	Luggage Store	Hotel	Japanese Restaurant	Donut Shop	Light Rail Station
26	Chittaranjan Park	Market	Ice Cream Shop	Chinese Restaurant	Event Space	French Restaurant	Food Truck
27	City Centre Mall, Rohini	Shopping Mall	Department Store	Indian Restaurant	Multiplex	Fast Food Restaurant	Café
28	City Square Mall, Rajouri Garden	Fast Food Restaurant	Indian Restaurant	Café	Shopping Mall	Gym / Fitness Center	Multiplex
29	Civil Lines	Coffee Shop	Chinese Restaurant	Burger Joint	Light Rail Station	Smoke Shop	Women's Store
...
210	The Leela Ambience Convention Hotel	Indian Restaurant	Shopping Mall	Pizza Place	Hotel	Café	English Restaurant
211	The Leela Palace, Chanakyapuri	Indian Restaurant	Northeast Indian Restaurant	French Restaurant	Breakfast Spot	Spa	Gym / Fitness Center
212	The Lodhi, Lodhi Road	Indian Restaurant	Chinese Restaurant	Arts & Crafts Store	Hotel	Light Rail Station	Pizza Place
213	The Park, Connaught Place	Hotel	Restaurant	Mediterranean Restaurant	Italian Restaurant	Spa	Coffee Shop
214	The Suryaa New Delhi, New Friends Colony	Café	Indian Restaurant	Nightclub	Sandwich Place	Fast Food Restaurant	Middle Eastern Restaurant

	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
215	The Taj Mahal Hotel, Mansingh Road	Indian Restaurant	Hotel Bar	Japanese Restaurant	Pool	Chinese Restaurant	Restaurant
216	The Taj Palace Hotel, Chanakyapuri	Indian Restaurant	Hotel	Café	Chinese Restaurant	North Indian Restaurant	Tea Room
217	The Uppal, Aerocity	Hotel	Indian Restaurant	English Restaurant	French Restaurant	Food Truck	Food Court
218	The Village Restaurant Complex, Khel Gaon Marg	Bar	Indian Restaurant	Stadium	Theater	Chinese Restaurant	Karaoke Bar
219	Tilak Nagar	Fast Food Restaurant	Indian Restaurant	Restaurant	Ice Cream Shop	African Restaurant	Event Space
220	Tughlakabad Institutional Area	Restaurant	Hotel	Bar	Chinese Restaurant	Steakhouse	Market
221	Uday Park	Park	Pizza Place	Bank	Metro Station	Fast Food Restaurant	Café
222	Unity One Mall, Janakpuri	Sandwich Place	Indian Restaurant	Pizza Place	Coffee Shop	Chinese Restaurant	English Restaurant
223	Uttam Nagar	Indian Restaurant	ATM	Whisky Bar	Concert Hall	French Restaurant	Food Truck
224	V3S Mall, Laxmi Nagar	Indian Restaurant	Arcade	Shopping Mall	Fast Food Restaurant	Multiplex	Bakery
225	Vasant Kunj	Spa	Fast Food Restaurant	Vegetarian / Vegan Restaurant	Bar	Pizza Place	Dessert Shop
226	Vasant Square Mall, Vasant Kunj	Bank	Spa	Fast Food Restaurant	Vegetarian / Vegan Restaurant	Dessert Shop	Café
227	Vasant Vihar	Café	Fast Food Restaurant	Chinese Restaurant	Restaurant	Coffee Shop	Asian Restaurant
228	Vasundhara Enclave	ATM	Frozen Yogurt Shop	French Restaurant	Food Truck	Food Court	Food & Drink Shop
229	Vijay Nagar	Café	Coffee Shop	Cheese Shop	Chinese Restaurant	Fast Food Restaurant	North Indian Restaurant
230	Vikas Marg	South Indian Restaurant	Bank	Burger Joint	Café	Burrito Place	Women's Store
231	Vikaspuri	Indian Restaurant	Fast Food Restaurant	Beer Garden	Pizza Place	Cosmetics Shop	Deli / Bodega
232	Vivek Vihar	Juice Bar	Bed & Breakfast	Department Store	Athletics & Sports	Women's Store	Falafel Restaurant

	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
233	Wazirpur	Bank	Women's Store	Falafel Restaurant	Fried Chicken Joint	French Restaurant	Food Truck
234	West End Mall, Janak Puri	Chinese Restaurant	Indian Restaurant	Sandwich Place	Fast Food Restaurant	Metro Station	BBQ Joint
235	West Gate Mall, Rajouri Garden	Fast Food Restaurant	Café	Indian Restaurant	American Restaurant	Shopping Mall	Snack Place
236	West Patel Nagar	Pizza Place	Park	Metro Station	Juice Bar	Women's Store	Event Space
237	Worldmark 1, Aerocity	Hotel	Hotel Bar	Coffee Shop	Bed & Breakfast	Bakery	Italian Restaurant
238	Yusuf Sarai	Indian Restaurant	Coffee Shop	Park	Asian Restaurant	Bar	Hotel
239	ibis New Delhi, Aerocity	Hotel	Hotel Bar	Coffee Shop	Bakery	Italian Restaurant	Japanese Restaurant

240 rows × 11 columns



```
In [37]: ## 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[37]: (240,)

In [38]: # add clustering labels

```
New_Delhi_merged = df_final.head(240)
New_Delhi_merged['Cluster Labels'] = kmeans.labels_

# merge New_Delhi_grouped with df_Chinese to add Latitude/Longitude for each Locality
New_Delhi_merged = New_Delhi_merged.join(Locality_venues_sorted.set_index('Locality'), on='Locality')

New_Delhi_merged.head()
```

/opt/conda/envs/Python36/lib/python3.6/site-packages/ipykernel/_main_.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>
app.launch_new_instance()

Out[38]:

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

```
In [39]: # 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['L
ng'], 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[39]: Make this Notebook Trusted to load map: File -> Trust Notebook

```
In [40]: ## 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[40]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster_Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
0	28.668945	3.100000	Average	117	0	Indian Restaurant	Sandwich Place	Chinese Restaurant
2	28.656131	3.275000	Average, Good	434	0	Indian Restaurant	Shopping Mall	Pizza Place
5	28.700516	3.040000	Average, Good, Poor	594	0	Indian Restaurant	Shopping Mall	Pizza Place
12	28.641698	3.050000	Average	17	0	Indian Restaurant	Hotel	Motel
13	28.690182	3.090000	Average, Good, Poor	971	0	Indian Restaurant	Market	Pizza Place
14	28.693969	3.378571	Average, Good	2343	0	Indian Restaurant	Asian Restaurant	Snack Place
18	28.696302	3.300000	Average, Good	415	0	Indian Restaurant	Asian Restaurant	Snack Place
22	28.654105	3.085714	Average	80	0	Pizza Place	Fast Food Restaurant	Fried Chicken Joint
23	28.656414	3.358182	Average, Good, Very Good	6668	0	Indian Restaurant	Snack Place	Mark
24	28.649658	3.800000	Average, Excellent, Good, Very Good	1410	0	Indian Restaurant	Hardware Store	Paper Office Supplies Store
28	28.650254	3.166667	Average, Good	1217	0	Fast Food Restaurant	Indian Restaurant	Cafe
33	28.657388	3.320000	Average, Good	636	0	Indian Restaurant	Pizza Place	Hotels
36	28.692546	3.480000	Average, Good	948	0	Indian Restaurant	Fast Food Restaurant	Coffee Shop
42	28.576161	2.983333	Average, Good, Poor	542	0	Indian Restaurant	Fast Food Restaurant	Shopping Mall
43	28.643320	3.287500	Average, Good, Poor, Very Good	2570	0	Indian Restaurant	Hotel	Hospital
47	28.681582	3.046875	Average, Good, Poor	1224	0	Indian Restaurant	Afghan Restaurant	Juice Bar

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Mo Common Ven
49	28.602169	2.900000	Average	7	0	Indian Restaurant	Golf Course	Italian Restaurant
55	28.617102	4.200000	Very Good	3010	0	Indian Restaurant	Park	English Restaurant
61	28.668181	3.400000	Average	33	0	Indian Restaurant	Bakery	Food Drink Sh
71	28.641003	3.650000	Average, Good	367	0	Indian Restaurant	Asian Restaurant	Ho
77	28.631728	3.060714	Average, Good, Poor, Very Good	1650	0	Indian Restaurant	Café	Shop Servi
80	28.611614	3.366667	Average, Good	291	0	Indian Restaurant	National Park	Governme Buildi
84	28.630942	3.122000	Average, Good, Poor, Very Good	1738	0	Indian Restaurant	Pizza Place	Indi Sweet Sh
85	28.648885	3.561111	Average, Good, Very Good	7411	0	Indian Restaurant	Metro Station	Flea Mark
92	28.584294	3.100000	Average	35	0	Indian Restaurant	Bakery	Mel Stati
94	28.538153	3.117143	Average, Good, Poor	3642	0	Fast Food Restaurant	Market	Indi Restaura
97	28.662972	3.533333	Average, Very Good	293	0	Indian Restaurant	Vegetarian / Vegan Restaurant	Movi Targ
99	28.648795	3.238028	Average, Good, Poor, Very Good	7282	0	Indian Restaurant	Fast Food Restaurant	Ho
103	28.652501	3.080000	Average, Good, Poor	2196	0	Indian Restaurant	Pizza Place	Bake
104	28.656263	3.097619	Average, Good	965	0	Pizza Place	Accessories Store	Fast Fo Restaura
113	28.541242	2.984615	Average	817	0	Indian Restaurant	Pizza Place	Socc Stadi
116	28.486576	2.950000	Average	8	0	Indian Restaurant	Art Museum	Furnitur Home Stc
118	28.646549	3.200000	Average	20	0	Indian Restaurant	Restaurant	Ho

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Mo Common Ven
126	28.602860	2.973214	Average, Good, Poor	1831	0	Indian Restaurant	Bistro	Gyr Fitne Cenl
133	28.708185	3.344444	Average, Good, Very Good	568	0	Park	Indian Restaurant	Chine Restaura
138	28.556145	3.040909	Average, Good, Poor	637	0	Indian Restaurant	Bakery	Departme Stc
142	28.693270	3.519149	Average, Good, Very Good	7642	0	Indian Restaurant	Fast Food Restaurant	Coffee Sh
144	28.591092	3.200000	Average, Good, Poor	993	0	Indian Restaurant	Pizza Place	Pa
153	28.608055	3.860000	Average, Good, Very Good	7978	0	Indian Restaurant	Art Gallery	Food Drink Sh
156	28.630734	3.185714	Average, Good	244	0	Indian Restaurant	Dessert Shop	Gift Sh
160	28.712975	3.066667	Average	121	0	Indian Restaurant	Pizza Place	Shoppi M
165	28.539464	2.900000	Average	14	0	Indian Restaurant	Restaurant	Food Tru
173	28.714176	3.352083	Average, Good, Poor, Very Good	4514	0	Indian Restaurant	Fast Food Restaurant	Multipl
176	28.562460	3.269231	Average, Good, Poor, Very Good	8739	0	Indian Restaurant	Jazz Club	Gre Restaura
177	28.511482	2.750000	Average, Poor	107	0	Asian Restaurant	Indian Restaurant	Bake
181	28.571849	3.316667	Average, Good	472	0	Fast Food Restaurant	Snack Place	Pizza Pla
193	28.569983	3.133333	Average, Good, Poor	988	0	Indian Restaurant	Coffee Shop	Pizza Pla
199	28.601779	3.700000	Average, Good, Very Good	964	0	Indian Restaurant	Hotel	Itali Restaura
204	28.597038	3.533333	Average, Good, Very Good	902	0	Indian Restaurant	Nightclub	Itali Restaura
209	28.631362	3.537500	Average, Good	1666	0	Indian Restaurant	Bakery	Hotel B

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Mo Common Veni
219	28.638846	3.048148	Average, Good	290	0	Fast Food Restaurant	Indian Restaurant	Restaura
222	28.628988	3.260000	Average, Good, Poor	239	0	Sandwich Place	Indian Restaurant	Pizza Pla
223	28.619954	2.905714	Average, Poor	242	0	Indian Restaurant	ATM	Whisky B
231	28.637492	3.062264	Average, Good, Poor	1253	0	Indian Restaurant	Fast Food Restaurant	Be Gard



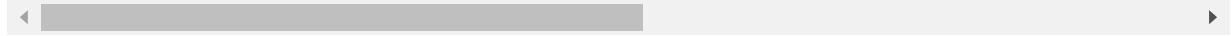
```
In [41]: ## Examine Clusters
```

```
## 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[41]:

		Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd M Comn Ven
3	28.553077	3.200000	Average		59	1	Hotel	Rental Car Location	Coffee S
10	28.554807	3.000000	Average		4	1	Hotel	Coffee Shop	Bak
19	28.548827	2.700000	Average		9	1	Hotel	Indian Restaurant	Hotel
35	28.590297	3.350000	Average, Good		127	1	Hotel	Indian Restaurant	Ameri Restau
56	28.570246	4.050000	Average, Excellent		1949	1	Hotel	Gym	Neighbor
60	28.665829	4.000000	Very Good		756	1	Hotel	Indian Restaurant	BBQ J
69	28.550327	3.300000	Average		30	1	Hotel	Hotel Bar	Coffee S
70	28.590654	3.550000	Average, Good		302	1	Hotel	Restaurant	Inc Restau
83	28.552895	3.300000	Average		15	1	Hotel	Hotel Bar	Coffee S
111	28.618772	3.666667	Average, Good, Very Good		725	1	Hotel	Indian Restaurant	Restau
112	28.552036	3.500000	Good		26	1	Hotel	Hotel Bar	Coffee S
119	28.545033	2.960000	Average, Good		259	1	Hotel	Indian Restaurant	Ameri Restau
120	28.673708	3.133333	Average		113	1	Indian Restaurant	Hotel	Chin Restau
128	28.608252	2.945000	Average, Good		406	1	Hotel	Women's Store	Eng Restau
146	28.535040	3.175000	Average, Good		60	1	Restaurant	Hotel	Wome Si
149	28.642910	2.996552	Average, Good, Poor, Very Good		2850	1	Hotel	Indian Restaurant	Restau
162	28.725814	3.050000	Average		50	1	Hotel	Café	Wome Si
163	28.552711	3.100000	Average		7	1	Hotel	Hotel Bar	Coffee S
168	28.543814	3.950000	Average, Excellent, Good, Very Good		1225	1	Hotel	Indian Restaurant	Ameri Restau

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd M Comn Ven
169	28.667261	3.200000	Average	76	1	Hotel	Indian Restaurant	Food Tr
174	28.550802	3.250000	Average, Good	34	1	Hotel	Hotel Bar	Coffee S
197	28.592724	2.985714	Average	560	1	Hotel	Department Store	Restau
205	28.600171	3.714286	Average, Good, Very Good	1733	1	Hotel	Chinese Restaurant	Hotel
217	28.535183	3.066667	Average	37	1	Hotel	Indian Restaurant	Eng Restau
237	28.550257	3.220000	Average, Good	77	1	Hotel	Hotel Bar	Coffee S
239	28.551398	3.100000	Average	9	1	Hotel	Hotel Bar	Coffee S



In [42]: *## 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[42]:

		Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Cor
6	28.527088	3.117391	Average, Good, Poor	1012	2	Coffee Shop	Food & Drink Shop	Steak	
7	28.541298	3.425000	Average, Good, Very Good	2460	2	Coffee Shop	Asian Restaurant	Rest	
8	28.555599	3.800000	Average, Very Good	2411	2	Stadium	Café	Metro	\$
11	28.562580	3.750000	Average, Good, Very Good	875	2	Department Store	Japanese Restaurant	S	Goods
15	28.691136	3.390909	Average, Good, Very Good	485	2	Pizza Place	South Indian Restaurant	G	
17	28.557846	3.220000	Average, Good, Poor	1875	2	Café	Fast Food Restaurant	Rest	
20	28.568193	2.755556	Average, Poor	339	2	Hotel	Lounge	M	Eur Rest
25	28.495624	2.700000	Average	23	2	Indian Restaurant	Luggage Store		
26	28.538688	3.130303	Average, Good, Poor	2578	2	Market	Ice Cream Shop	Ci	Rest
27	28.716874	3.400000	Average	134	2	Shopping Mall	Department Store		Rest
29	28.681233	3.300000	Average, Good, Very Good	769	2	Coffee Shop	Chinese Restaurant	Burge	
31	28.632091	3.779832	Average, Excellent, Good, Very Good	128107	2	Indian Restaurant	Café		
32	28.718351	3.150000	Average, Good	494	2	Pharmacy	Food Court	Clothing	
34	28.720602	3.600000	Good	119	2	Light Rail Station	Asian Restaurant		
37	28.541903	3.000000	Average	4	2	Coffee Shop	Chinese Restaurant	Event	
38	28.702961	3.225000	Average, Good	168	2	Shopping Mall	Convenience Store	Veget	Rest
39	28.543269	3.650000	Good	201	2	Coffee Shop	Asian Restaurant	Rest	
40	28.528657	3.700000	Average, Good, Very Good	5920	2	Indian Restaurant	Bar	L	

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Cor
41	28.542647	3.761538	Average, Good, Very Good	1946	2	Coffee Shop	Asian Restaurant	Rest
44	28.574288	3.496154	Average, Good, Poor, Very Good	15579	2	Italian Restaurant	Indian Restaurant	
46	28.573241	3.225000	Average, Good, Poor	1106	2	Train Station	Northeast Indian Restaurant	
48	28.630149	2.950000	Average, Good, Poor	471	2	Indian Restaurant	Chinese Restaurant	Sar
50	28.645084	3.235000	Average, Good, Poor, Very Good	2578	2	Pizza Place	Chinese Restaurant	Metro S
51	28.557166	3.080000	Average, Very Good	1120	2	Temple	Hotel	Fast Rest
52	28.551417	3.505000	Average, Good, Very Good	7446	2	Indian Restaurant		Bar
53	28.549856	3.720000	Average, Good, Very Good	352	2	Coffee Shop	Fast Food Restaurant	Rest
54	28.543798	3.500000	Average, Good	502	2	Comedy Club	Playground	Coffee
57	28.699837	3.376471	Average, Good, Very Good	2460	2	Pizza Place	Food Truck	Jui
58	28.514237	4.200000	Very Good	1561	2	Coffee Shop	Café	Rest
59	28.654883	3.053846	Average, Good	262	2	Mobile Phone Shop	Burger Joint	Wc
...
187	28.629634	2.942857	Average	151	2	Snack Place	Coffee Shop	Lig
188	28.707685	3.168182	Average, Good, Very Good	1668	2	Pizza Place	Convenience Store	
189	28.620715	3.880000	Average, Good, Very Good	626	2	Hotel	Spa	Rest
191	28.522279	3.100000	Average	14	2	Thai Restaurant	Café	Whis
192	28.526856	4.066667	Very Good	802	2	Indian Restaurant	Clothing Store	

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Cor
194	28.566717	3.303125	Average, Good, Very Good	2411	2	Coffee Shop	Indian Restaurant	Pizza
195	28.527731	3.450000	Average, Good	396	2	Indian Restaurant	Bar	L
196	28.680905	3.320000	Average, Good	286	2	Fast Food Restaurant	Breakfast Spot	Coffee
198	28.636712	3.023529	Average, Poor	185	2	Skating Rink	Park	Pizza
200	28.564288	3.200000	Average	6	2	Coffee Shop	Airport Terminal	S
202	28.646593	3.280952	Average, Good, Very Good	1624	2	Indian Restaurant	Clothing Store	G
203	28.601187	3.633333	Average, Good	1018	2	Café	Coffee Shop	
206	28.538993	3.450000	Average, Good	242	2	Coffee Shop	Fast Food Restaurant	Clothing
207	28.625445	3.600000	Average, Good, Very Good	843	2	Hotel	Indian Restaurant	Rest
211	28.579556	3.780000	Good	709	2	Indian Restaurant	Northeast Indian Restaurant	F Rest
212	28.592147	3.350000	Average, Good	189	2	Indian Restaurant	Chinese Restaurant	Arts &
213	28.623619	3.466667	Average, Good	1141	2	Hotel	Restaurant	Mediterr Rest
215	28.605069	3.785714	Average, Good, Very Good	1976	2	Indian Restaurant	Hotel Bar	Jap Rest
216	28.594859	3.800000	Good, Very Good	287	2	Indian Restaurant	Hotel	
218	28.552403	3.833333	Good, Very Good	1133	2	Bar	Indian Restaurant	St
220	28.523519	3.700000	Good	281	2	Restaurant	Hotel	
224	28.636921	2.819231	Average, Good, Poor	2265	2	Indian Restaurant	Arcade	Shoppin
225	28.524070	3.686364	Average, Good, Very Good	4001	2	Spa	Fast Food Restaurant	Veget Rest
226	28.525054	3.322222	Average, Good	1940	2	Bank	Spa	Fas Rest

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Cor
227	28.559704	3.278261	Average, Good, Very Good	1043	2	Café	Fast Food Restaurant	Cl Rest
228	28.596073	3.052941	Average, Good	305	2	ATM	Frozen Yogurt Shop	F Rest
232	28.667344	3.077273	Average, Good, Poor	939	2	Juice Bar	Bed & Breakfast	Depa
234	28.630044	2.750000	Average, Poor	238	2	Chinese Restaurant	Indian Restaurant	Sar
236	28.648177	3.675000	Average, Good, Very Good	876	2	Pizza Place	Park	Metro S
238	28.559928	3.075000	Average, Good	923	2	Indian Restaurant	Coffee Shop	

126 rows × 15 columns

In [43]: *## 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[43]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
233	28.695096	3.05	Average	86	3	Bank	Women's Store	Falafel Restaurant



In [44]: *## 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[44]:

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd M Comr Ver
1	28.537063	3.292308	Average, Good, Poor, Very Good	1560	4	Indian Restaurant	Café	Pi Restaur
4	28.690020	3.033333	Average	126	4	Indian Restaurant	Pizza Place	Departm St
9	28.659870	3.281481	Average, Good	1309	4	Café	South Indian Restaurant	B
16	28.630440	3.208333	Average, Good, Poor	1779	4	Indian Restaurant	Theater	Bak
21	28.589797	3.085714	Average, Good, Poor	1617	4	Concert Hall	African Restaurant	T
30	28.561898	3.100000	Average, Good	1514	4	Café	Indian Restaurant	Nightc
45	28.696802	3.296296	Average, Excellent, Good, Poor, Very Good	19479	4	Café	Light Rail Station	Restaur
82	28.548371	3.137500	Average, Good, Poor	609	4	Indian Restaurant	Shopping Mall	Air Food C
86	28.624632	3.315217	Average, Excellent, Good, Poor, Very Good	4011	4	Café	Gym	P
89	28.539003	3.150000	Average, Good, Poor	893	4	Soccer Field	Pizza Place	Soc Stad
100	28.556869	4.500000	Excellent	524	4	Café	Indian Restaurant	Mail
108	28.563827	3.800000	Good, Very Good	1092	4	Indian Restaurant	Market	C
110	28.635391	3.040385	Average, Good, Poor, Very Good	2442	4	Indian Restaurant	Arcade	Groc St
123	28.626791	3.250000	Average	57	4	Theater	Indian Restaurant	Bak
127	28.619410	3.134615	Average, Good, Poor	1648	4	Wings Joint	Ice Cream Shop	Juice

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd M Comr Ver
135	28.579641	3.180000	Average, Good	202	4	Pizza Place	Department Store	Sci Inc Restaur
140	28.627959	3.004167	Average	326	4	Indian Restaurant	Café	Pizza Pl
143	28.564494	3.140625	Average, Good, Very Good	1548	4	Café	Indian Restaurant	Sandw Pl
147	28.523307	3.430769	Average, Good, Poor, Very Good	2412	4	Pizza Place	Coffee Shop	Multip
171	28.639604	3.056410	Average, Good, Poor, Very Good	5168	4	Pizza Place	Food & Drink Shop	Bak
172	28.644281	3.626804	Average, Excellent, Good, Poor, Very Good	25637	4	Indian Restaurant	Bakery	C
175	28.546931	3.223077	Average, Good	606	4	Café	Indian Restaurant	Chin Restaur
180	28.534499	3.000000	Average, Good, Poor	173	4	Café	Arcade	Eng Restaur
182	28.587918	3.541892	Average, Excellent, Good, Poor, Very Good	16386	4	Café	Indian Restaurant	Bi
190	28.577107	3.100000	Average	114	4	Convenience Store	Pizza Place	Bak
201	28.651299	3.500000	Average, Good	479	4	Fast Food Restaurant	Café	Inc Restaur
208	28.562469	2.971429	Average, Good, Poor	486	4	Café	Indian Restaurant	Pl
210	28.661133	3.775000	Good, Very Good	460	4	Indian Restaurant	Shopping Mall	Pizza Pl
214	28.561105	3.425000	Average, Good	246	4	Café	Indian Restaurant	Nightc
221	28.560593	3.733333	Average, Good, Very Good	615	4	Park	Pizza Place	Bi

	Lat	Agg_Rating	Comments	No_of_Votes	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd M Comr Ver
229	28.692519	3.606452	Average, Excellent, Good, Very Good	12271	4	Café	Coffee Shop	Chinese SI
230	28.658041	3.400000	Average	19	4	South Indian Restaurant	Bank	Burji
235	28.652978	3.500000	Good	178	4	Fast Food Restaurant	Café	Inc Restaur

Conclusion

Chanakyapuri, Pitampura, Safdarjung best neighborhoods for Chinese cuisine. Panchsheel park and Nehru place have the best Chinese Restaurant. Connaught place, Rajouri garden and Malviya nagar are the best places to eat. Greater kailash, Feroze shah road, Saket have best rated restaurants in New Delhi.