Capstone Project — The Battle of Neighbourhoods

Introduction New Delhi is the capital city of India. The city itself has a population of 257,803. From different parts of India many people goes to Delhi for different purposes like construction work, IT Job, Business, Travel with family,Students etc.. First thing which people encounter in which area they will stay. Now staying in an area depends on different aspects too like availability for food,most importantly if you are foodie, budget and bviously other amenities. So, we need to build this code to check which area is best for different category of people.For example, most north indian persons like chinese food so they can easily get the exact recommendation according to their need.

With it's diverse culture , comes diverse food items,ethnicity. There are many restaurants in New Delhi City, each belonging to different categories like Chinese , Italian , French etc. So as part of this project , we will list and visualise all major parts of New Delhi City .

Questions that can be asked using the above mentioned datasets

What is best location for Chinese food ? Which area is having large number of north indian foods ? Which area is not having sufficient restaurants ? Best place to stay as per chinese cuisine selection ? In New delhi what are the best restaurants?

For this project we need the following data :

New Delhi Resturants data that contains list Locality, Resturant name,Rating along with their latitude and longitude. Data source : https://www.kaggle.com/shrutimehta/zomato-restaurants-data Description : This data set contains the required information. And we will use this data set to explore various locality of new delhi city. Nearby places in each locality of new delhi city. Data source : https://developer.foursquare.com/ Description : By using this api we will get all the venues in each neighborhood.

Approach

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

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

!conda install -c conda-forge folium=0.5.0 --yes # uncomment this line if you haven't complet
import folium # map rendering library
! pip install geocoder
import geocoder
```

```
/bin/bash: conda: command not found
Collecting geocoder
  Downloading https://files.pythonhosted.org/packages/4f/6b/13166c909ad2f2d76b929a4227c9
     |████████████████████████████████| 102kB 2.3MB/s
Requirement already satisfied: six in /usr/local/lib/python3.6/dist-packages (from geocc
Requirement already satisfied: click in /usr/local/lib/python3.6/dist-packages (from gec
Requirement already satisfied: future in /usr/local/lib/python3.6/dist-packages (from ge
Collecting ratelim
  Downloading https://files.pythonhosted.org/packages/f2/98/7e6d147fd16a10a5f821db6e25f1
Requirement already satisfied: requests in /usr/local/lib/python3.6/dist-packages (from
Requirement already satisfied: decorator in /usr/local/lib/python3.6/dist-packages (fron
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.6/dist-packa
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.6/dist-packag
Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 in /usr/local/lib
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.6/dist-packages (1
Installing collected packages: ratelim, geocoder
Successfully installed geocoder-1.38.1 ratelim-0.1.6
```

Reading Restaurant data from CSV file

```
df = pd.read_csv('https://raw.githubusercontent.com/haanjiankur/Capstone-Project---The-Battle
df.head()
```

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Lo
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	12
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...	12
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas,	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	12

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

Need to clean unwanted data

```
df_Res= df_NDLS[df_NDLS.Longitude !=0.000000][['Restaurant Name','Locality','Longitude','Lati
```

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

```
df_Res.head()
```

	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

Restaurant cluster visibility through Map view

```
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)

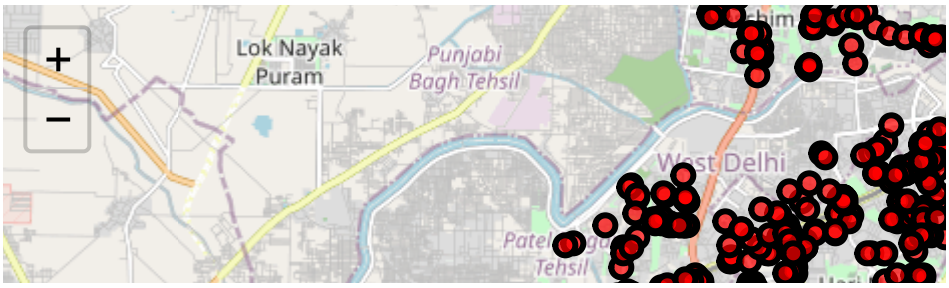
kmeans = KMeans(n_clusters=5, random_state=0).fit(Z)

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
    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
```




```
df_Res.head()
```

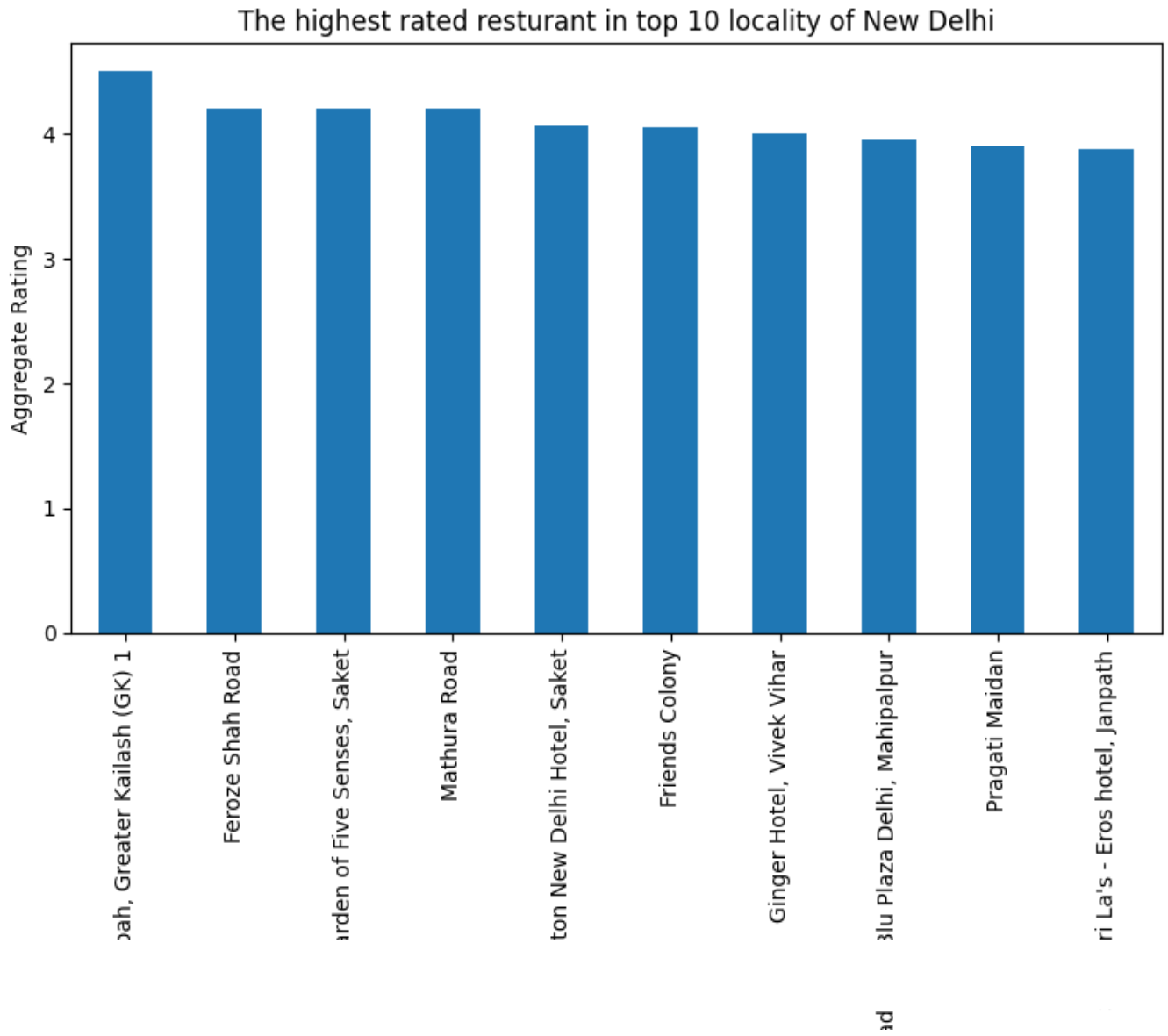
	Restaurant Name	Locality	Longitude	Latitude	Cuisines	Aggregate rating	Rating text	Votes	Clu
1	Burger.in	Adchini	77.196923	28.535382	Fast Food	3.2	Average	46	
2	Days of the Raj	Adchini	77.197475	28.535493	North Indian, Seafood, Continental	3.4	Average	45	
	Dilli Ka				South Indian				

Explore places having best restaurant in new delhi-Sorting as per Rating

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

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

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



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

Now need to find places having worst restaurants

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

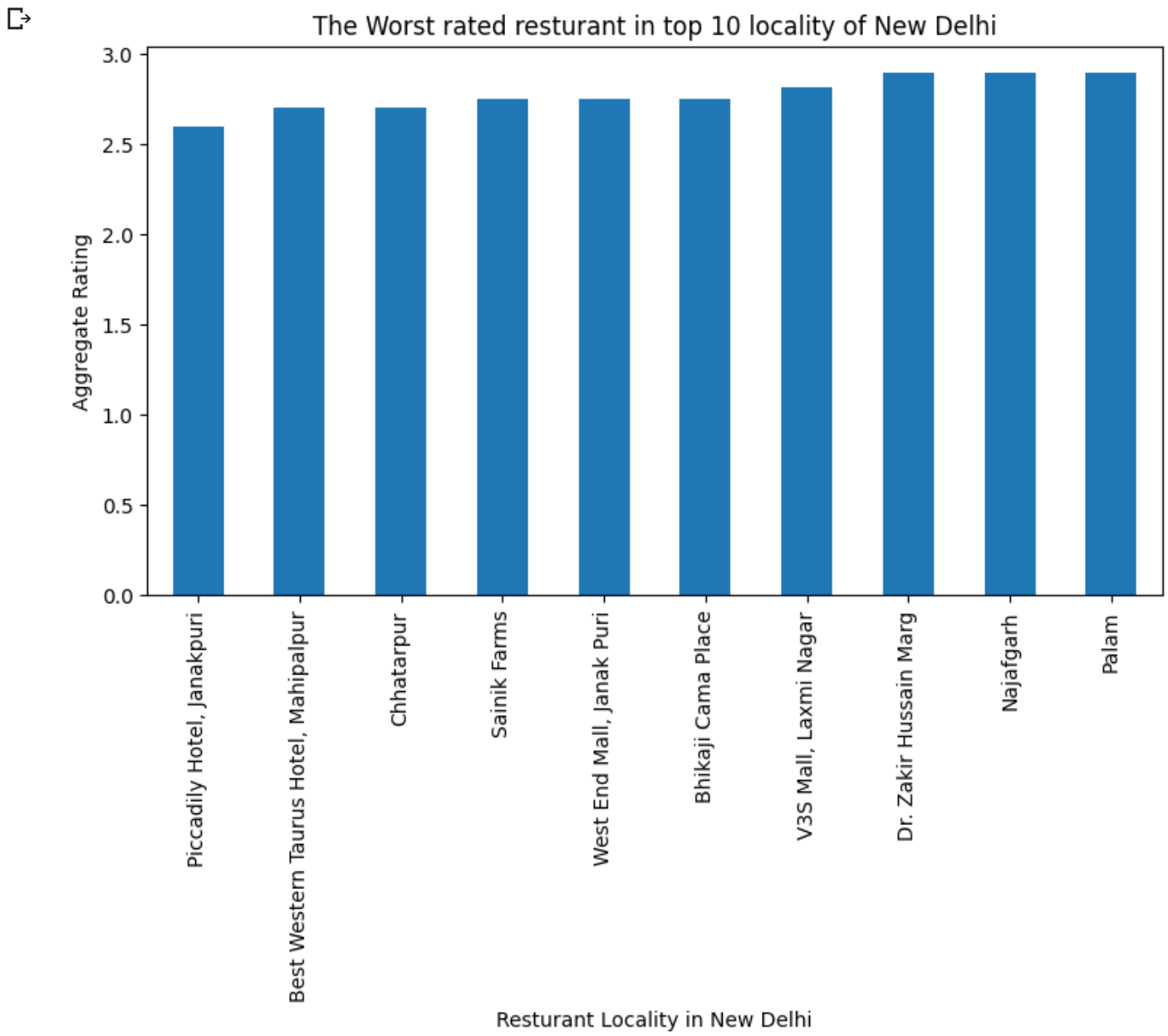
#giving a bar plot

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

plt.xlabel('Resturant Locality in New Delhi')
```

```
#On y-axis
plt.ylabel('Aggregate Rating')

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



Now explore places for Foodies

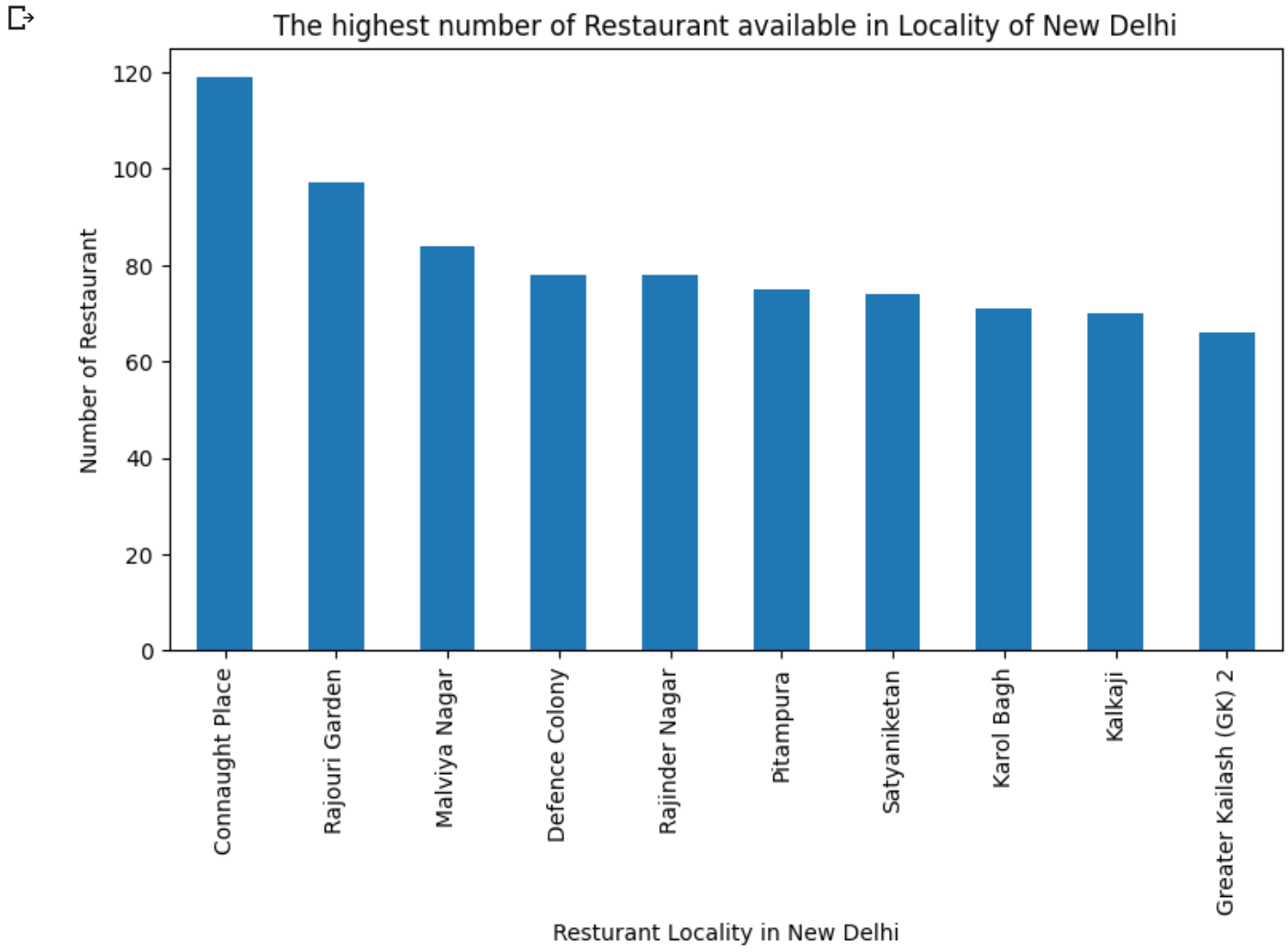
```
import matplotlib.pyplot as plt
```

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

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

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

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



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

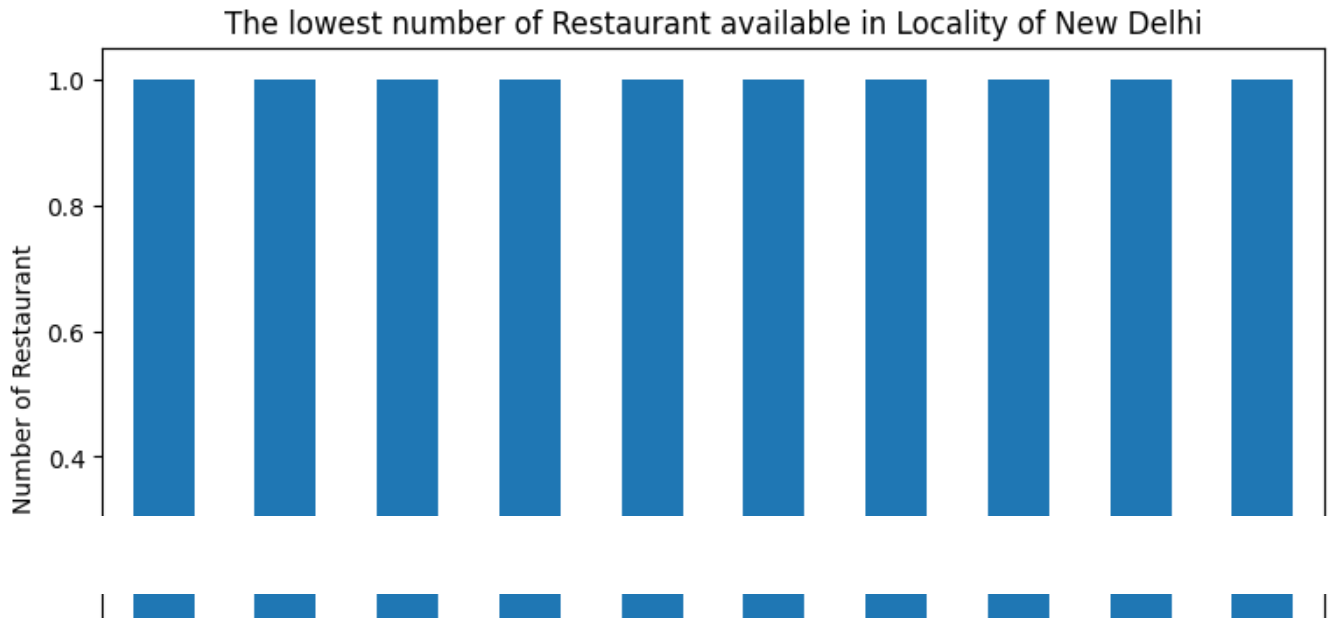
Now opposite! Places not suitable for foodies.

```
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

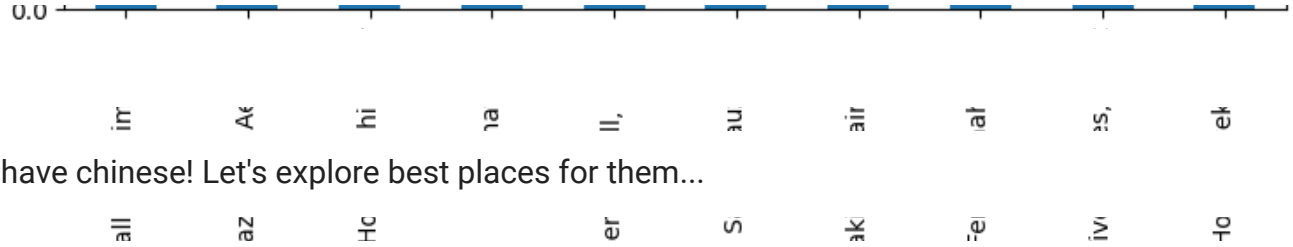
#giving a bar plot
df_Res.groupby('Locality')['Restaurant Name'].count().nsmallest(10).plot(kind='bar')

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

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



Want to have chinese! Let's explore the best area for that.



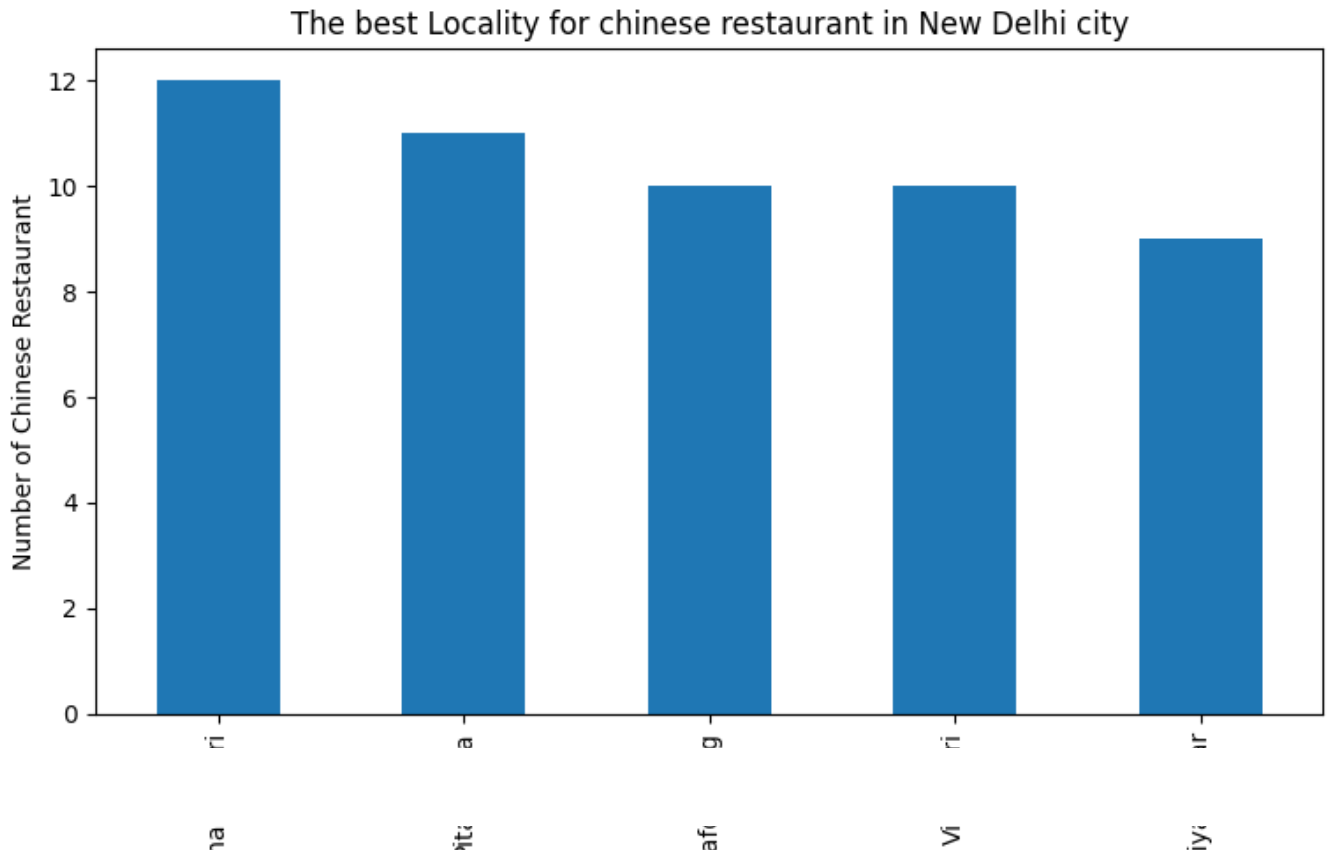
Want to have chinese! Let's explore best places for them...


```
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'].c

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

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



Chanakyapuri is the best place for Chinese restaurant.

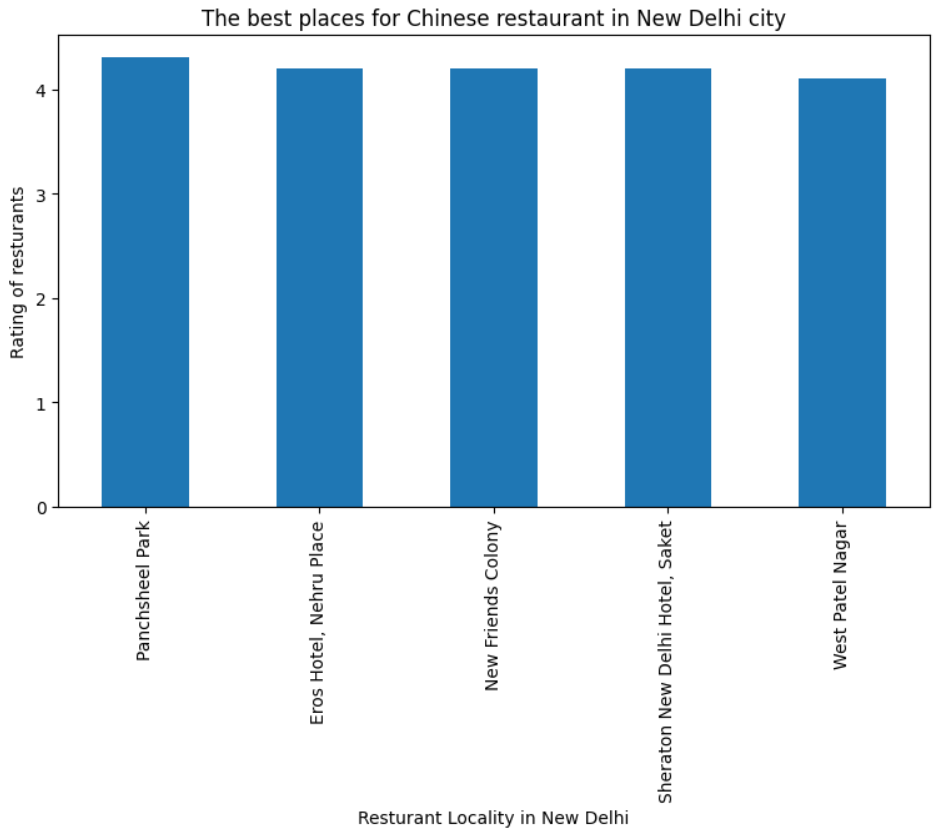
Now need to find best chinese restaurants

```
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'].

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

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



Panchsheel park is best Chinese resturants.

Based on locality let's group the data

```
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_Cuisi


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

	Locality	Lat	Lng	No_of_Restaurant	Cusines	Agg_Rating	Comment
0	ARSS Mall, Paschim Vihar	28.668945	77.101544	1	North Indian, South Indian, Chinese, Mithai, F...	3.100000	Averag
1	Adchini	28.537063	77.197808	13	Fast Food, North Indian, Seafood, Continental,...	3.292308	Averag Good Poo Ver

```
df_final.shape
```

```
(240, 8)
```

Define Foursquare Credentials and Version

```
## Define Foursquare Credentials and Version
CLIENT_ID = 'ES3ZXR1ALGY0Q0YQVMG0RUMAO00WTUNG4K1C2JN5C2J0O1AZ' # Foursquare ID
CLIENT_SECRET = 'H3VNVPRCUTEX4NP23B4ANBLXWZKKIZ0VM4NKN0IQRYPYXPTW' # Foursquare Secret
VERSION = '20180605' # Foursquare API version

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

```
Your credentails:
CLIENT_ID: ES3ZXR1ALGY0Q0YQVMG0RUMAO00WTUNG4K1C2JN5C2J0O1AZ
CLIENT_SECRET:H3VNVPRCUTEX4NP23B4ANBLXWZKKIZ0VM4NKN0IQRYPYXPTW
```

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

```
## 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=
            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)
```

find the venues in all New Delhi Locality

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

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

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

```
new_Delhi_venues.head()
```

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

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

Locality	Locality Latitude	Locality Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
ARSS Mall, Paschim Vihar	9	9	9	9	9	9
Adchini	5	5	5	5	5	5
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
...	...	...	...	...	...	...
West Gate Mall, Rajouri Garden	17	17	17	17	17	17

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

```
There are 209 uniques categories.
```

```
## 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
new_Delhi_onehot = new_Delhi_onehot[column_list]

new_Delhi_onehot.head()
```

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

5 rows × 210 columns

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

	Locality	ATM	Accessories Store	African Restaurant	Airport	Airport Food Court	Airport Lounge	Airport Service
0	ARSS Mall, Paschim Vihar	0.111111	0.000000	0.0	0.0	0.0	0.000000	0.0
1	Adchini	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0
2	Aditya Mega Mall, Karkardooma	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0
3	Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.142857	0.0
4	Aggarwal City Mall, Pitampura	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0
...	...	...	...	...	...	...	...	...
234	West Gate Mall, Rajouri Garden	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0
235	West Patel Nagar	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0
236	Worldmark 1, Aerocity	0.000000	0.034483	0.0	0.0	0.0	0.000000	0.0
237	Yusuf Sarai	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0
238	ibis New Delhi, Aerocity	0.000000	0.000000	0.0	0.0	0.0	0.000000	0.0

239 rows × 210 columns

```
New_Delhi_grouped.shape
```

```
(239, 210)
```

```
## 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_venue
    print('\n')
```

```
----ARSS Mall, Paschim Vihar----
               venue  freq
0   Indian Restaurant  0.22
1                 ATM  0.11
2         Coffee Shop  0.11
3      Sandwich Place  0.11
4  Chinese Restaurant  0.11


----Adchini----
              venue  freq
0  Indian Restaurant   0.4
1              Café   0.4
2               Pub   0.2
3               ATM   0.0
4     Nightlife Spot   0.0


----Aditya Mega Mall, Karkardooma----
              venue  freq
0        Pizza Place   0.2
1  Indian Restaurant   0.2
2          Multiplex   0.2
3      Shopping Mall   0.2
4             Hotel   0.1


----Aerocity----
                 venue  freq
0                Hotel  0.29
1   Rental Car Location  0.14
2  Fast Food Restaurant  0.14
3          Coffee Shop  0.14
4        Airport Lounge  0.14


----Aggarwal City Mall, Pitampura----
                    venue  freq
0       Chinese Restaurant  0.25
1             Pizza Place  0.25
2                   Café  0.25
3         Department Store  0.25
4  North Indian Restaurant  0.00


----Aggarwal City Plaza, Rohini----
                 venue  freq
0          Pizza Place  0.14
1            Multiplex  0.14
2        Ice Cream Shop  0.14
3           Bus Station  0.14
4  Gym / Fitness Center  0.14


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


----Ambience Mall, Vasant Kunj----
                  venue  freq
0           Coffee Shop  0.09
1  Fast Food Restaurant  0.07
2                 Café  0.07
3         Shopping Mall  0.07
4      Asian Restaurant  0.07


----Anand Lok----
          venue  freq
0       Stadium  0.18
1          Café  0.18
2  Dessert Shop  0.09
3         Hotel  0.09
4   Golf Course  0.09


----Anand Vihar----
           venue  freq
0           Café   0.4
1       Pharmacy   0.2
2   Burger Joint   0.2
3  Burrito Place   0.2
4            ATM   0.0


----Andaz Delhi, Aerocity----
            venue  freq
0           Hotel  0.38
1     Coffee Shop  0.08
2             Spa  0.08
3  Breakfast Spot  0.04
4       Gastropub  0.04


----Ansal Plaza Mall, Khel Gaon Marg----
                   venue  freq
0            Snack Place   0.2
1   Fast Food Restaurant   0.2
2  Performing Arts Venue   0.2
3    Japanese Restaurant   0.2
4            Karaoke Bar   0.2


----Asaf Ali Road----
               venue  freq
0  Indian Restaurant  0.25
1             Hotel  0.25
2            Hostel  0.25
3      Movie Theater  0.25
4                ATM  0.00
```

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----Ashok Vihar Phase 1----
         venue  freq
0  Pizza Place  0.14
1       Market  0.14
2   Smoke Shop  0.14
3    BBQ Joint  0.14
4  Snack Place  0.14


----Ashok Vihar Phase 2----
                    venue  freq
0  South Indian Restaurant  0.17
1              Coffee Shop  0.17
2              Pizza Place  0.17
3            Sandwich Place  0.17
4         Asian Restaurant  0.17


----Ashok Vihar Phase 3----
                    venue  freq
0                  Garden   0.2
1  South Indian Restaurant   0.2
2           Shopping Mall   0.2
3             Pizza Place   0.2
4        Indian Restaurant   0.2


----Barakhamba Road----
               venue  freq
0             Bakery  0.15
1               Café  0.15
2            Theater  0.15
3  Indian Restaurant  0.15
4          Nightclub  0.08


----Basant Lok Market, Vasant Vihar----
                venue  freq
0                Café  0.15
1         Coffee Shop  0.07
2  Chinese Restaurant  0.07
3         Pizza Place  0.07
4          Restaurant  0.07


----Bellagio, Ashok Vihar Phase 2----
                    venue  freq
0  South Indian Restaurant  0.17
1              Coffee Shop  0.17
2              Pizza Place  0.17
3            Sandwich Place  0.17
4         Asian Restaurant  0.17


----Best Western Taurus Hotel, Mahipalpur----
                venue  freq
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                venue  freq
0               Hotel  0.45
1  Italian Restaurant  0.09
2   Accessories Store  0.09
3   Indian Restaurant  0.09
4          Shoe Store  0.09


----Bhikaji Cama Place----
                  venue  freq
0                Lounge  0.17
1                 Hotel  0.17
2  Fast Food Restaurant  0.08
3    Chinese Restaurant  0.08
4        Breakfast Spot  0.08


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


----Chander Nagar----
                           venue  freq
0                    Pizza Place   1.0
1            Indie Movie Theater   0.0
2             Mughlai Restaurant   0.0
3  Multicuisine Indian Restaurant   0.0
4                      Multiplex   0.0


----Chandni Chowk----
                          venue  freq
0             Indian Restaurant  0.26
1                   Snack Place  0.21
2                  Dessert Shop  0.16
3                        Market  0.11
4  Paper / Office Supplies Store  0.05


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


----Chhatarpur----
                venue  freq
0    Indian Restaurant  0.25
1  Japanese Restaurant  0.25
2           Donut Shop  0.25
```

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3                Hotel  0.25
4                  ATM  0.00


----Chittaranjan Park----
                        venue  freq
0                      Market   0.4
1           Indian Restaurant   0.2
2                        Park   0.2
3          Chinese Restaurant   0.2
4  Northeast Indian Restaurant   0.0


----City Centre Mall, Rohini----
              venue  freq
0      Shopping Mall  0.33
1   Department Store  0.22
2  Indian Restaurant  0.11
3                Gym  0.11
4              Café  0.11


----City Square Mall, Rajouri Garden----
                  venue  freq
0  Fast Food Restaurant  0.17
1     Indian Restaurant  0.13
2                 Café  0.13
3         Shopping Mall  0.09
4                 Diner  0.04


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


----Community Centre, New Friends Colony----
                      venue  freq
0                      Café  0.15
1       Fast Food Restaurant  0.10
2  Middle Eastern Restaurant  0.10
3                     Plaza  0.05
4                     Hotel  0.05


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

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----Crescent Square Mall, Rohini----
            venue  freq
0        Pharmacy  0.17
1             Pub  0.17
2      Food Court  0.17
3      Restaurant  0.17
4  Clothing Store  0.17


----Cross River Mall, Karkardooma----
                venue  freq
0         Pizza Place   0.4
1   Indian Restaurant   0.4
2               Hotel   0.2
3      Nightlife Spot   0.0
4  Mughlai Restaurant   0.0


----Crowne Plaza Hotel, Rohini----
                  venue  freq
0      Asian Restaurant  0.14
1                 Hotel  0.14
2  Fast Food Restaurant  0.14
3           Theme Park  0.14
4    Light Rail Station  0.14


----Crowne Plaza, Mayur Vihar Phase 1----
               venue  freq
0              Hotel  0.38
1        Pizza Place  0.08
2   Department Store  0.08
3  Indian Restaurant  0.08
4         Restaurant  0.08


----D Mall, Netaji Subhash Place----
                  venue  freq
0  Fast Food Restaurant  0.21
1     Indian Restaurant  0.16
2           Coffee Shop  0.11
3         Shopping Mall  0.11
4             Multiplex  0.05


----DDA Market, Kalu Sarai, Hauz Khas----
                        venue  freq
0          Chinese Restaurant  0.25
1                 Coffee Shop  0.25
2                 Event Space  0.25
3                   Nightclub  0.25
4  Northeast Indian Restaurant  0.00


----DLF City Centre Mall, Shalimar Bagh----
                          venue  freq
0                 Shopping Mall  0.33
1                     Multiplex  0.17
```

```
1                    Multiplex  0.17
2              Convenience Store  0.17
3  Vegetarian / Vegan Restaurant  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                 Café  0.07
3         Shopping Mall  0.07
4      Asian Restaurant  0.07


----DLF Place Mall, Saket----
                venue  freq
0   Indian Restaurant  0.12
1      Clothing Store  0.07
2                 Bar  0.07
3             Lounge  0.07
4  Chinese Restaurant  0.05


----DLF Promenade Mall, Vasant Kunj----
                  venue  freq
0           Coffee Shop  0.09
1  Fast Food Restaurant  0.07
2                 Café  0.07
3         Shopping Mall  0.07
4      Asian Restaurant  0.07


----DLF South Square, Sarojini Nagar----
                  venue  freq
0     Indian Restaurant  0.23
1         Women's Store  0.15
2  Fast Food Restaurant  0.15
3         Shopping Mall  0.08
4                Market  0.08


----Daryaganj----
               venue  freq
0  Indian Restaurant  0.31
1              Hotel  0.15
2         Restaurant  0.15
3             Hostel  0.15
4   Asian Restaurant  0.08


----Defence Colony----
                     venue  freq
0       Italian Restaurant  0.17
1        Indian Restaurant  0.17
2                  Bakery  0.11
3                  Market  0.06
4  South Indian Restaurant  0.06
```