

Capstone Project - The Battle of Neighborhoods (Week - 2)

Table of contents

- [Introduction: Business Problem](#)
- [Data](#)
- [Methodology](#)
- [Analysis](#)
- [Results and Discussion](#)
- [Conclusion](#)

Introduction: Business Problem

In this project we will try to find the best Indian restaurant in the New York City with the help of foursquare data. New York City is a large and ethnically diverse metropolis. It is the largest city in the United States with a long history of international immigration. New York City accounting for over 40% of the population of New York State and a slightly lower percentage of the New York metropolitan area, home to approximately 23.6 million. Over the last decade the city has been growing faster than the region. The New York region continues to be by far the leading metropolitan gateway for legal immigrants admitted into the United States. Throughout its history, New York City has been a major point of entry for immigrants; the term "melting pot" was coined to describe densely populated immigrant neighborhoods on the Lower East Side. As many as 800 languages are spoken in New York, making it the most linguistically diverse city in the world. English remains the most widely spoken language, although there are areas in the outer boroughs in which up to 25% of people speak English as an alternate language, and/or have limited or no English language fluency. English is least spoken in neighborhoods such as Flushing, Sunset Park, and Corona. With it's diverse culture , comes diverse food items. There are many resturants in New york City, each belonging to different categories like Chinese , Indian , French etc. So as part of this project , we will list and visualize all major parts of New York City that has great indian resturants.

Data

For this project we need the following data :

New York City data that contains list Boroughs, Neighborhoods along with their latitude and longitude. Data source : https://cocl.us/new_york_dataset (https://cocl.us/new_york_dataset) Description : This data set contains the required information. And we will use this data set to explore various neighborhoods of new york city. Indian resturants in each neighborhood of new york city. Data source : Fousquare API Description : By using this api we will get all the venues in each neighborhood. We can filter these venues to get only indian resturants. GeoSpace data Data source : <https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm> (<https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm>) Description : By using this geo space data we will get the New york Borough boundaries that will help us visualize choropleth map.

```
In [2]: #import the libraries

import pandas as pd
import numpy as np
import requests
import os

pd.set_option('display.max_columns', None)
pd.set_option('display.max_rows', None)

from bs4 import BeautifulSoup

!conda install -c conda-forge geocoder --yes
import geocoder

!conda install -c conda-forge geopy --yes
from geopy.geocoders import Nominatim # convert an address into latitude and longitude values

!conda install -c conda-forge folium=0.5.0 --yes
import folium # map rendering library

import matplotlib.pyplot as plt
import matplotlib.cm as cm
import matplotlib.colors as colors
%matplotlib inline
```

Solving environment: done

Package Plan

environment location: /opt/conda/envs/Python36

added / updated specs:

- geocoder

The following packages will be downloaded:

package	build		
ca-certificates-2019.6.16	hecc5488_0	145 KB	conda-forge
ratelim-0.1.6	py_2	6 KB	conda-forge
geocoder-1.38.1	py_1	53 KB	conda-forge
certifi-2019.6.16	py36_1	149 KB	conda-forge
openssl-1.1.1c	h516909a_0	2.1 MB	conda-forge
Total:		2.5 MB	

The following NEW packages will be INSTALLED:

geocoder:	1.38.1-py_1	conda-forge
ratelim:	0.1.6-py_2	conda-forge

The following packages will be UPDATED:

ca-certificates:	2019.5.15-0	--> 2019.6.16-hecc5488_0	c
conda-forge			
certifi:	2019.6.16-py36_1	--> 2019.6.16-py36_1	c
conda-forge			

The following packages will be DOWNGRADED:

openssl:	1.1.1c-h7b6447c_1	--> 1.1.1c-h516909a_0	c
conda-forge			

Downloading and Extracting Packages

ca-certificates-2019	145 KB	#####	10
0%			
ratelim-0.1.6	6 KB	#####	10
0%			
geocoder-1.38.1	53 KB	#####	10
0%			
certifi-2019.6.16	149 KB	#####	10
0%			
openssl-1.1.1c	2.1 MB	#####	10
0%			

Preparing transaction: done

Verifying transaction: done

Executing transaction: done

Solving environment: done

Package Plan

environment location: /opt/conda/envs/Python36

added / updated specs:

- geopy

The following packages will be downloaded:

package	build		
-----	-----		
geopy-1.20.0	py_0	57 KB	conda-forge
geographiclib-1.49	py_0	32 KB	conda-forge
-----	-----		
Total:		90 KB	

The following NEW packages will be INSTALLED:

geographiclib: 1.49-py_0 conda-forge
 geopy: 1.20.0-py_0 conda-forge

Downloading and Extracting Packages

geopy-1.20.0 | 57 KB | ##### | 10
 0%

geographiclib-1.49 | 32 KB | ##### | 10
 0%

Preparing transaction: done

Verifying transaction: done

Executing transaction: done

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		
-----	-----		
branca-0.3.1	py_0	25 KB	conda-forge
vincent-0.4.4	py_1	28 KB	conda-forge
altair-3.2.0	py36_0	770 KB	conda-forge
folium-0.5.0	py_0	45 KB	conda-forge
-----	-----		
Total:		868 KB	

The following NEW packages will be INSTALLED:

altair: 3.2.0-py36_0 conda-forge
 branca: 0.3.1-py_0 conda-forge
 folium: 0.5.0-py_0 conda-forge
 vincent: 0.4.4-py_1 conda-forge

Downloading and Extracting Packages

```

branca-0.3.1      | 25 KB      | ##### | 10
0%
vincent-0.4.4     | 28 KB      | ##### | 10
0%
altair-3.2.0      | 770 KB     | ##### | 10
0%
folium-0.5.0      | 45 KB      | ##### | 10
0%
Preparing transaction: done
Verifying transaction: done
Executing transaction: done

```

```

In [3]: def geo_location(address):
        # get geo location of address
        geolocator = Nominatim(user_agent="ny_explorer")
        location = geolocator.geocode(address)
        latitude = location.latitude
        longitude = location.longitude
        return latitude, longitude

```

```

In [18]: def get_venues(lat,lng):

    #set variables
    radius=1000
    LIMIT=100
    CLIENT_ID = 'J3PZI23KVV0DAYF2FMAH5A4FGWFN3D00VUON52PCIVCIYRXZ' # your Four
square ID
    CLIENT_SECRET = 'VNMPFPD0SN0MT4R2YT5COKI2QPRS4TXWLXFF0LIUHSGSX5BF' # your
Foursquare Secret
    VERSION = '20180605' # Foursquare API version

    #url to fetch data from foursquare api
    url = 'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_s
ecret={}&v={}&ll={},{}&radius={}&limit={}'.format(
        CLIENT_ID,
        CLIENT_SECRET,
        VERSION,
        lat,
        lng,
        radius,
        LIMIT)

    # get all the data
    results = requests.get(url).json()
    venue_data=results["response"]["groups"][0]['items']
    venue_details=[]
    for row in venue_data:
        try:
            venue_id=row['venue']['id']
            venue_name=row['venue']['name']
            venue_category=row['venue']['categories'][0]['name']
            venue_details.append([venue_id,venue_name,venue_category])
        except KeyError:
            pass

    column_names=['ID','Name','Category']
    df = pd.DataFrame(venue_details,columns=column_names)
    return df

```

```

In [19]: def get_venue_details(venue_id):

    CLIENT_ID = 'J3PZI23KWV0DAYF2FMAH5A4FGWFN3D00VUON52PCIVCIYRXZ' # your Four
square ID
    CLIENT_SECRET = 'VNMPFPD0SN0MT4R2YT5COKI2QPRS4TXWLXFF0LIUHSGSX5BF' # your
Foursquare Secret
    VERSION = '20180605' # Foursquare API version

    #url to fetch data from foursquare api
    url = 'https://api.foursquare.com/v2/venues/{?}&client_id={}&client_secret
={}&v={}'.format(
        venue_id,
        CLIENT_ID,
        CLIENT_SECRET,
        VERSION)

    # get all the data
    results = requests.get(url).json()
    venue_data=results['response']['venue']
    venue_details=[]
    try:
        venue_id=venue_data['id']
        venue_name=venue_data['name']
        venue_likes=venue_data['likes']['count']
        venue_rating=venue_data['rating']
        venue_tips=venue_data['tips']['count']
        venue_details.append([venue_id,venue_name,venue_likes,venue_rating,ven
ue_tips])
    except KeyError:
        pass

    column_names=['ID','Name','Likes','Rating','Tips']
    df = pd.DataFrame(venue_details,columns=column_names)
    return df

```

Methodology

Collect the new york city data from https://cocl.us/new_york_dataset (https://cocl.us/new_york_dataset). Using FourSquare API we will find all venues for each neighborhood. Filter out all venues that are Indian Restaurants. Find rating , tips and like count for each Indian Restaurants using FourSquare API. Using rating for each restaurant , we will sort that data. Visualize the Ranking of neighborhoods using folium library(python).

Analysis

We will import the required libraries for python.

pandas and numpy for handling data. Request module using FourSquare API. geopy to get co-ordinates of City of New York. folium to visualize the results on a map.


```

In [20]: def get_new_york_data():
    url='https://cocl.us/new_york_dataset'
    resp=requests.get(url).json()
    # all data is present in features label
    features=resp['features']

    # define the dataframe columns
    column_names = ['Borough', 'Neighborhood', 'Latitude', 'Longitude']
    # instantiate the dataframe
    new_york_data = pd.DataFrame(columns=column_names)

    for data in features:
        borough = data['properties']['borough']
        neighborhood_name = data['properties']['name']

        neighborhood_latlon = data['geometry']['coordinates']
        neighborhood_lat = neighborhood_latlon[1]
        neighborhood_lon = neighborhood_latlon[0]

        new_york_data = new_york_data.append({'Borough': borough,
                                              'Neighborhood': neighborhood_name,
                                              'Latitude': neighborhood_lat,
                                              'Longitude': neighborhood_lon}, ignore_index=True)

    return new_york_data

```

```
In [21]: new_york_data=get_new_york_data()
```

```
In [22]: new_york_data.head()
```

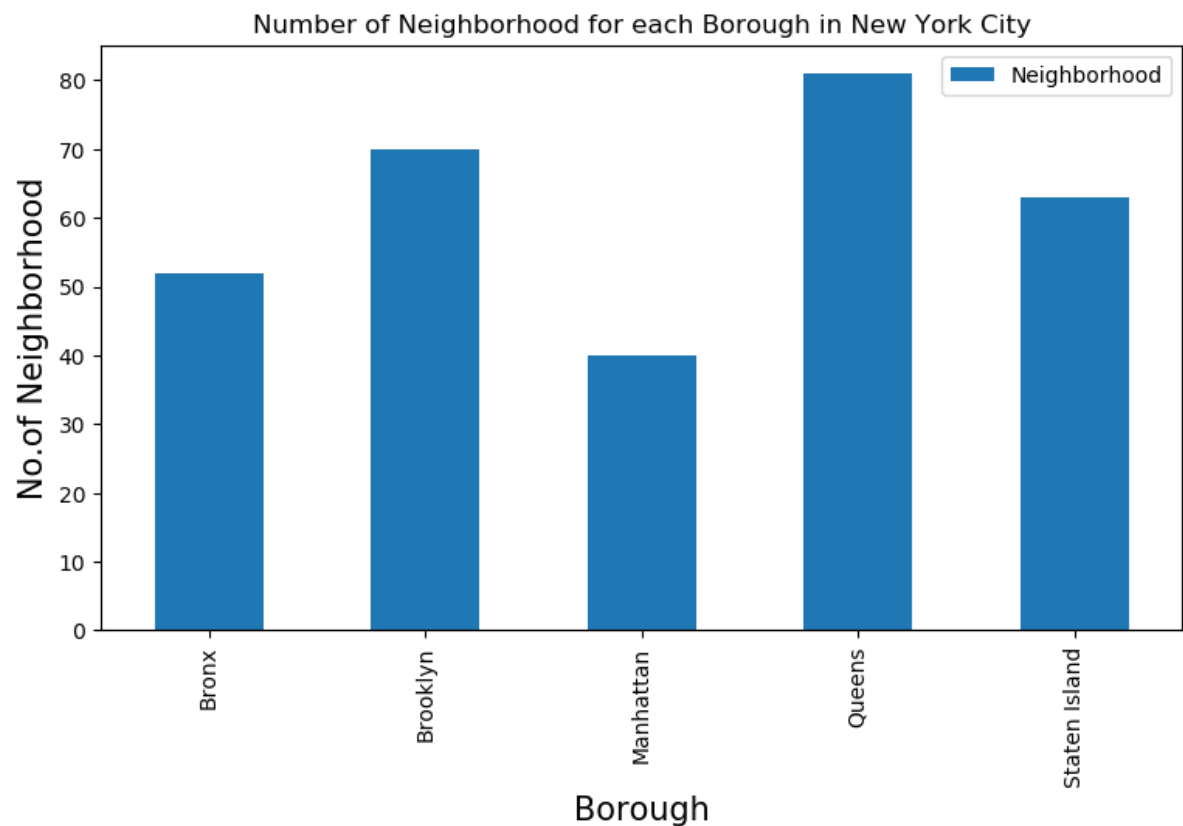
```
Out[22]:
```

	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585

```
In [23]: new_york_data.shape
```

```
Out[23]: (306, 4)
```

```
In [24]: plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('Number of Neighborhood for each Borough in New York City')
#On x-axis
plt.xlabel('Borough', fontsize = 15)
#On y-axis
plt.ylabel('No.of Neighborhood', fontsize=15)
#giving a bar plot
new_york_data.groupby('Borough')['Neighborhood'].count().plot(kind='bar')
#legend
plt.legend()
#displays the plot
plt.show()
```



```
In [28]: # prepare neighborhood list that contains indian restaurants
column_names=['Borough', 'Neighborhood', 'ID','Name']
indian_rest_ny=pd.DataFrame(columns=column_names)
count=1
for row in new_york_data.values.tolist():
    Borough, Neighborhood, Latitude, Longitude=row
    venues = get_venues(Latitude,Longitude)
    indian_restaurants=venues[venues['Category']=='Indian Restaurant']
    print('(',count, '/',len(new_york_data),')','Indian Restaurants in '+Neighborhood+', '+Borough+':'+str(len(indian_restaurants)))
    for restaurant_detail in indian_restaurants.values.tolist():
        id, name , category=restaurant_detail
        indian_rest_ny = indian_rest_ny.append({'Borough': Borough,
                                                'Neighborhood': Neighborhood,
                                                'ID': id,
                                                'Name' : name
                                                }, ignore_index=True)

    count+=1
```

(1 / 306) Indian Resturants in Wakefield, Bronx:0
(2 / 306) Indian Resturants in Co-op City, Bronx:0
(3 / 306) Indian Resturants in Eastchester, Bronx:0
(4 / 306) Indian Resturants in Fieldston, Bronx:0
(5 / 306) Indian Resturants in Riverdale, Bronx:0
(6 / 306) Indian Resturants in Kingsbridge, Bronx:0
(7 / 306) Indian Resturants in Marble Hill, Manhattan:0
(8 / 306) Indian Resturants in Woodlawn, Bronx:1
(9 / 306) Indian Resturants in Norwood, Bronx:0
(10 / 306) Indian Resturants in Williamsbridge, Bronx:1
(11 / 306) Indian Resturants in Baychester, Bronx:0
(12 / 306) Indian Resturants in Pelham Parkway, Bronx:0
(13 / 306) Indian Resturants in City Island, Bronx:0
(14 / 306) Indian Resturants in Bedford Park, Bronx:0
(15 / 306) Indian Resturants in University Heights, Bronx:0
(16 / 306) Indian Resturants in Morris Heights, Bronx:0
(17 / 306) Indian Resturants in Fordham, Bronx:0
(18 / 306) Indian Resturants in East Tremont, Bronx:0
(19 / 306) Indian Resturants in West Farms, Bronx:0
(20 / 306) Indian Resturants in High Bridge, Bronx:0
(21 / 306) Indian Resturants in Melrose, Bronx:0
(22 / 306) Indian Resturants in Mott Haven, Bronx:0
(23 / 306) Indian Resturants in Port Morris, Bronx:0
(24 / 306) Indian Resturants in Longwood, Bronx:0
(25 / 306) Indian Resturants in Hunts Point, Bronx:0
(26 / 306) Indian Resturants in Morrisania, Bronx:0
(27 / 306) Indian Resturants in Soundview, Bronx:0
(28 / 306) Indian Resturants in Clason Point, Bronx:0
(29 / 306) Indian Resturants in Throgs Neck, Bronx:0
(30 / 306) Indian Resturants in Country Club, Bronx:0
(31 / 306) Indian Resturants in Parkchester, Bronx:1
(32 / 306) Indian Resturants in Westchester Square, Bronx:0
(33 / 306) Indian Resturants in Van Nest, Bronx:0
(34 / 306) Indian Resturants in Morris Park, Bronx:0
(35 / 306) Indian Resturants in Belmont, Bronx:0
(36 / 306) Indian Resturants in Spuyten Duyvil, Bronx:1
(37 / 306) Indian Resturants in North Riverdale, Bronx:0
(38 / 306) Indian Resturants in Pelham Bay, Bronx:0
(39 / 306) Indian Resturants in Schuylerville, Bronx:0
(40 / 306) Indian Resturants in Edgewater Park, Bronx:0
(41 / 306) Indian Resturants in Castle Hill, Bronx:0
(42 / 306) Indian Resturants in Olinville, Bronx:0
(43 / 306) Indian Resturants in Pelham Gardens, Bronx:0
(44 / 306) Indian Resturants in Concourse, Bronx:1
(45 / 306) Indian Resturants in Unionport, Bronx:1
(46 / 306) Indian Resturants in Edenwald, Bronx:0
(47 / 306) Indian Resturants in Bay Ridge, Brooklyn:2
(48 / 306) Indian Resturants in Bensonhurst, Brooklyn:0
(49 / 306) Indian Resturants in Sunset Park, Brooklyn:0
(50 / 306) Indian Resturants in Greenpoint, Brooklyn:0
(51 / 306) Indian Resturants in Gravesend, Brooklyn:0
(52 / 306) Indian Resturants in Brighton Beach, Brooklyn:1
(53 / 306) Indian Resturants in Sheepshead Bay, Brooklyn:0
(54 / 306) Indian Resturants in Manhattan Terrace, Brooklyn:0
(55 / 306) Indian Resturants in Flatbush, Brooklyn:2
(56 / 306) Indian Resturants in Crown Heights, Brooklyn:0
(57 / 306) Indian Resturants in East Flatbush, Brooklyn:1

(58 / 306) Indian Resturants in Kensington, Brooklyn:2
 (59 / 306) Indian Resturants in Windsor Terrace, Brooklyn:0
 (60 / 306) Indian Resturants in Prospect Heights, Brooklyn:1
 (61 / 306) Indian Resturants in Brownsville, Brooklyn:0
 (62 / 306) Indian Resturants in Williamsburg, Brooklyn:0
 (63 / 306) Indian Resturants in Bushwick, Brooklyn:0
 (64 / 306) Indian Resturants in Bedford Stuyvesant, Brooklyn:0
 (65 / 306) Indian Resturants in Brooklyn Heights, Brooklyn:0
 (66 / 306) Indian Resturants in Cobble Hill, Brooklyn:0
 (67 / 306) Indian Resturants in Carroll Gardens, Brooklyn:0
 (68 / 306) Indian Resturants in Red Hook, Brooklyn:0
 (69 / 306) Indian Resturants in Gowanus, Brooklyn:1
 (70 / 306) Indian Resturants in Fort Greene, Brooklyn:1
 (71 / 306) Indian Resturants in Park Slope, Brooklyn:0
 (72 / 306) Indian Resturants in Cypress Hills, Brooklyn:0
 (73 / 306) Indian Resturants in East New York, Brooklyn:0
 (74 / 306) Indian Resturants in Starrett City, Brooklyn:0
 (75 / 306) Indian Resturants in Canarsie, Brooklyn:0
 (76 / 306) Indian Resturants in Flatlands, Brooklyn:0
 (77 / 306) Indian Resturants in Mill Island, Brooklyn:0
 (78 / 306) Indian Resturants in Manhattan Beach, Brooklyn:0
 (79 / 306) Indian Resturants in Coney Island, Brooklyn:0
 (80 / 306) Indian Resturants in Bath Beach, Brooklyn:0
 (81 / 306) Indian Resturants in Borough Park, Brooklyn:0
 (82 / 306) Indian Resturants in Dyker Heights, Brooklyn:0
 (83 / 306) Indian Resturants in Gerritsen Beach, Brooklyn:0
 (84 / 306) Indian Resturants in Marine Park, Brooklyn:0
 (85 / 306) Indian Resturants in Clinton Hill, Brooklyn:2
 (86 / 306) Indian Resturants in Sea Gate, Brooklyn:0
 (87 / 306) Indian Resturants in Downtown, Brooklyn:0
 (88 / 306) Indian Resturants in Boerum Hill, Brooklyn:0
 (89 / 306) Indian Resturants in Prospect Lefferts Gardens, Brooklyn:2
 (90 / 306) Indian Resturants in Ocean Hill, Brooklyn:2
 (91 / 306) Indian Resturants in City Line, Brooklyn:1
 (92 / 306) Indian Resturants in Bergen Beach, Brooklyn:0
 (93 / 306) Indian Resturants in Midwood, Brooklyn:0
 (94 / 306) Indian Resturants in Prospect Park South, Brooklyn:3
 (95 / 306) Indian Resturants in Georgetown, Brooklyn:0
 (96 / 306) Indian Resturants in East Williamsburg, Brooklyn:0
 (97 / 306) Indian Resturants in North Side, Brooklyn:1
 (98 / 306) Indian Resturants in South Side, Brooklyn:1
 (99 / 306) Indian Resturants in Ocean Parkway, Brooklyn:0
 (100 / 306) Indian Resturants in Fort Hamilton, Brooklyn:1
 (101 / 306) Indian Resturants in Chinatown, Manhattan:0
 (102 / 306) Indian Resturants in Washington Heights, Manhattan:1
 (103 / 306) Indian Resturants in Inwood, Manhattan:0
 (104 / 306) Indian Resturants in Hamilton Heights, Manhattan:2
 (105 / 306) Indian Resturants in Manhattanville, Manhattan:2
 (106 / 306) Indian Resturants in Central Harlem, Manhattan:2
 (107 / 306) Indian Resturants in East Harlem, Manhattan:1
 (108 / 306) Indian Resturants in Upper East Side, Manhattan:0
 (109 / 306) Indian Resturants in Yorkville, Manhattan:1
 (110 / 306) Indian Resturants in Lenox Hill, Manhattan:0
 (111 / 306) Indian Resturants in Roosevelt Island, Manhattan:1
 (112 / 306) Indian Resturants in Upper West Side, Manhattan:3
 (113 / 306) Indian Resturants in Lincoln Square, Manhattan:0
 (114 / 306) Indian Resturants in Clinton, Manhattan:0

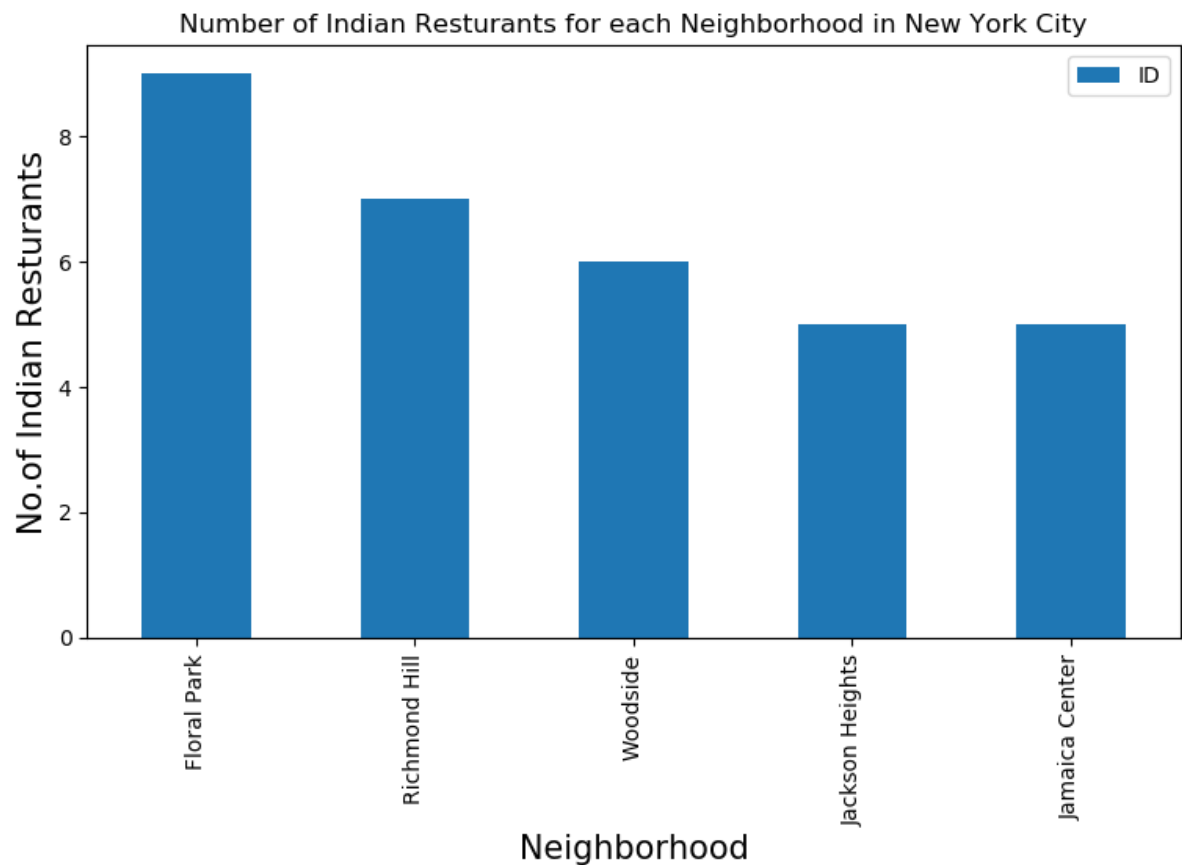
(115 / 306) Indian Resturants in Midtown, Manhattan:1
(116 / 306) Indian Resturants in Murray Hill, Manhattan:1
(117 / 306) Indian Resturants in Chelsea, Manhattan:1
(118 / 306) Indian Resturants in Greenwich Village, Manhattan:0
(119 / 306) Indian Resturants in East Village, Manhattan:0
(120 / 306) Indian Resturants in Lower East Side, Manhattan:0
(121 / 306) Indian Resturants in Tribeca, Manhattan:1
(122 / 306) Indian Resturants in Little Italy, Manhattan:0
(123 / 306) Indian Resturants in Soho, Manhattan:0
(124 / 306) Indian Resturants in West Village, Manhattan:2
(125 / 306) Indian Resturants in Manhattan Valley, Manhattan:5
(126 / 306) Indian Resturants in Morningside Heights, Manhattan:2
(127 / 306) Indian Resturants in Gramercy, Manhattan:3
(128 / 306) Indian Resturants in Battery Park City, Manhattan:0
(129 / 306) Indian Resturants in Financial District, Manhattan:1
(130 / 306) Indian Resturants in Astoria, Queens:1
(131 / 306) Indian Resturants in Woodside, Queens:6
(132 / 306) Indian Resturants in Jackson Heights, Queens:5
(133 / 306) Indian Resturants in Elmhurst, Queens:1
(134 / 306) Indian Resturants in Howard Beach, Queens:0
(135 / 306) Indian Resturants in Corona, Queens:0
(136 / 306) Indian Resturants in Forest Hills, Queens:0
(137 / 306) Indian Resturants in Kew Gardens, Queens:2
(138 / 306) Indian Resturants in Richmond Hill, Queens:7
(139 / 306) Indian Resturants in Flushing, Queens:0
(140 / 306) Indian Resturants in Long Island City, Queens:2
(141 / 306) Indian Resturants in Sunnyside, Queens:1
(142 / 306) Indian Resturants in East Elmhurst, Queens:0
(143 / 306) Indian Resturants in Maspeth, Queens:0
(144 / 306) Indian Resturants in Ridgewood, Queens:1
(145 / 306) Indian Resturants in Glendale, Queens:0
(146 / 306) Indian Resturants in Rego Park, Queens:1
(147 / 306) Indian Resturants in Woodhaven, Queens:1
(148 / 306) Indian Resturants in Ozone Park, Queens:1
(149 / 306) Indian Resturants in South Ozone Park, Queens:1
(150 / 306) Indian Resturants in College Point, Queens:0
(151 / 306) Indian Resturants in Whitestone, Queens:0
(152 / 306) Indian Resturants in Bayside, Queens:3
(153 / 306) Indian Resturants in Auburndale, Queens:0
(154 / 306) Indian Resturants in Little Neck, Queens:0
(155 / 306) Indian Resturants in Douglaston, Queens:0
(156 / 306) Indian Resturants in Glen Oaks, Queens:4
(157 / 306) Indian Resturants in Bellerose, Queens:1
(158 / 306) Indian Resturants in Kew Gardens Hills, Queens:1
(159 / 306) Indian Resturants in Fresh Meadows, Queens:1
(160 / 306) Indian Resturants in Briarwood, Queens:3
(161 / 306) Indian Resturants in Jamaica Center, Queens:5
(162 / 306) Indian Resturants in Oakland Gardens, Queens:0
(163 / 306) Indian Resturants in Queens Village, Queens:0
(164 / 306) Indian Resturants in Hollis, Queens:0
(165 / 306) Indian Resturants in South Jamaica, Queens:0
(166 / 306) Indian Resturants in St. Albans, Queens:0
(167 / 306) Indian Resturants in Rochdale, Queens:0
(168 / 306) Indian Resturants in Springfield Gardens, Queens:0
(169 / 306) Indian Resturants in Cambria Heights, Queens:0
(170 / 306) Indian Resturants in Rosedale, Queens:0
(171 / 306) Indian Resturants in Far Rockaway, Queens:0

(172 / 306) Indian Resturants in Broad Channel, Queens:0
(173 / 306) Indian Resturants in Breezy Point, Queens:0
(174 / 306) Indian Resturants in Steinway, Queens:1
(175 / 306) Indian Resturants in Beechhurst, Queens:0
(176 / 306) Indian Resturants in Bay Terrace, Queens:0
(177 / 306) Indian Resturants in Edgemere, Queens:0
(178 / 306) Indian Resturants in Arverne, Queens:0
(179 / 306) Indian Resturants in Rockaway Beach, Queens:0
(180 / 306) Indian Resturants in Neponsit, Queens:0
(181 / 306) Indian Resturants in Murray Hill, Queens:0
(182 / 306) Indian Resturants in Floral Park, Queens:9
(183 / 306) Indian Resturants in Holliswood, Queens:1
(184 / 306) Indian Resturants in Jamaica Estates, Queens:2
(185 / 306) Indian Resturants in Queensboro Hill, Queens:0
(186 / 306) Indian Resturants in Hillcrest, Queens:0
(187 / 306) Indian Resturants in Ravenswood, Queens:1
(188 / 306) Indian Resturants in Lindenwood, Queens:0
(189 / 306) Indian Resturants in Laurelton, Queens:0
(190 / 306) Indian Resturants in Lefrak City, Queens:0
(191 / 306) Indian Resturants in Belle Harbor, Queens:0
(192 / 306) Indian Resturants in Rockaway Park, Queens:0
(193 / 306) Indian Resturants in Somerville, Queens:0
(194 / 306) Indian Resturants in Brookville, Queens:0
(195 / 306) Indian Resturants in Bellaire, Queens:1
(196 / 306) Indian Resturants in North Corona, Queens:0
(197 / 306) Indian Resturants in Forest Hills Gardens, Queens:1
(198 / 306) Indian Resturants in St. George, Staten Island:0
(199 / 306) Indian Resturants in New Brighton, Staten Island:1
(200 / 306) Indian Resturants in Stapleton, Staten Island:0
(201 / 306) Indian Resturants in Rosebank, Staten Island:0
(202 / 306) Indian Resturants in West Brighton, Staten Island:0
(203 / 306) Indian Resturants in Grymes Hill, Staten Island:0
(204 / 306) Indian Resturants in Todt Hill, Staten Island:0
(205 / 306) Indian Resturants in South Beach, Staten Island:0
(206 / 306) Indian Resturants in Port Richmond, Staten Island:0
(207 / 306) Indian Resturants in Mariner's Harbor, Staten Island:0
(208 / 306) Indian Resturants in Port Ivory, Staten Island:0
(209 / 306) Indian Resturants in Castleton Corners, Staten Island:0
(210 / 306) Indian Resturants in New Springville, Staten Island:0
(211 / 306) Indian Resturants in Travis, Staten Island:0
(212 / 306) Indian Resturants in New Dorp, Staten Island:1
(213 / 306) Indian Resturants in Oakwood, Staten Island:0
(214 / 306) Indian Resturants in Great Kills, Staten Island:0
(215 / 306) Indian Resturants in Eltingville, Staten Island:0
(216 / 306) Indian Resturants in Annadale, Staten Island:0
(217 / 306) Indian Resturants in Woodrow, Staten Island:0
(218 / 306) Indian Resturants in Tottenville, Staten Island:0
(219 / 306) Indian Resturants in Tompkinsville, Staten Island:1
(220 / 306) Indian Resturants in Silver Lake, Staten Island:0
(221 / 306) Indian Resturants in Sunnyside, Staten Island:1
(222 / 306) Indian Resturants in Ditmas Park, Brooklyn:4
(223 / 306) Indian Resturants in Wingate, Brooklyn:0
(224 / 306) Indian Resturants in Rugby, Brooklyn:0
(225 / 306) Indian Resturants in Park Hill, Staten Island:1
(226 / 306) Indian Resturants in Westerleigh, Staten Island:0
(227 / 306) Indian Resturants in Graniteville, Staten Island:0
(228 / 306) Indian Resturants in Arlington, Staten Island:0

(229 / 306) Indian Resturants in Arrochar, Staten Island:0
(230 / 306) Indian Resturants in Grasmere, Staten Island:0
(231 / 306) Indian Resturants in Old Town, Staten Island:0
(232 / 306) Indian Resturants in Dongan Hills, Staten Island:0
(233 / 306) Indian Resturants in Midland Beach, Staten Island:0
(234 / 306) Indian Resturants in Grant City, Staten Island:2
(235 / 306) Indian Resturants in New Dorp Beach, Staten Island:0
(236 / 306) Indian Resturants in Bay Terrace, Staten Island:0
(237 / 306) Indian Resturants in Huguenot, Staten Island:0
(238 / 306) Indian Resturants in Pleasant Plains, Staten Island:0
(239 / 306) Indian Resturants in Butler Manor, Staten Island:0
(240 / 306) Indian Resturants in Charleston, Staten Island:0
(241 / 306) Indian Resturants in Rossville, Staten Island:0
(242 / 306) Indian Resturants in Arden Heights, Staten Island:0
(243 / 306) Indian Resturants in Greenridge, Staten Island:0
(244 / 306) Indian Resturants in Heartland Village, Staten Island:0
(245 / 306) Indian Resturants in Chelsea, Staten Island:0
(246 / 306) Indian Resturants in Bloomfield, Staten Island:0
(247 / 306) Indian Resturants in Bulls Head, Staten Island:0
(248 / 306) Indian Resturants in Carnegie Hill, Manhattan:2
(249 / 306) Indian Resturants in Noho, Manhattan:0
(250 / 306) Indian Resturants in Civic Center, Manhattan:1
(251 / 306) Indian Resturants in Midtown South, Manhattan:1
(252 / 306) Indian Resturants in Richmond Town, Staten Island:0
(253 / 306) Indian Resturants in Shore Acres, Staten Island:0
(254 / 306) Indian Resturants in Clifton, Staten Island:0
(255 / 306) Indian Resturants in Concord, Staten Island:1
(256 / 306) Indian Resturants in Emerson Hill, Staten Island:1
(257 / 306) Indian Resturants in Randall Manor, Staten Island:0
(258 / 306) Indian Resturants in Howland Hook, Staten Island:0
(259 / 306) Indian Resturants in Elm Park, Staten Island:0
(260 / 306) Indian Resturants in Remsen Village, Brooklyn:0
(261 / 306) Indian Resturants in New Lots, Brooklyn:0
(262 / 306) Indian Resturants in Paerdegat Basin, Brooklyn:0
(263 / 306) Indian Resturants in Mill Basin, Brooklyn:0
(264 / 306) Indian Resturants in Jamaica Hills, Queens:4
(265 / 306) Indian Resturants in Utopia, Queens:0
(266 / 306) Indian Resturants in Pomonok, Queens:0
(267 / 306) Indian Resturants in Astoria Heights, Queens:1
(268 / 306) Indian Resturants in Claremont Village, Bronx:0
(269 / 306) Indian Resturants in Concourse Village, Bronx:1
(270 / 306) Indian Resturants in Mount Eden, Bronx:0
(271 / 306) Indian Resturants in Mount Hope, Bronx:0
(272 / 306) Indian Resturants in Sutton Place, Manhattan:2
(273 / 306) Indian Resturants in Hunters Point, Queens:0
(274 / 306) Indian Resturants in Turtle Bay, Manhattan:3
(275 / 306) Indian Resturants in Tudor City, Manhattan:2
(276 / 306) Indian Resturants in Stuyvesant Town, Manhattan:0
(277 / 306) Indian Resturants in Flatiron, Manhattan:0
(278 / 306) Indian Resturants in Sunnyside Gardens, Queens:1
(279 / 306) Indian Resturants in Blissville, Queens:1
(280 / 306) Indian Resturants in Fulton Ferry, Brooklyn:0
(281 / 306) Indian Resturants in Vinegar Hill, Brooklyn:0
(282 / 306) Indian Resturants in Weeksville, Brooklyn:0
(283 / 306) Indian Resturants in Broadway Junction, Brooklyn:0
(284 / 306) Indian Resturants in Dumbo, Brooklyn:0
(285 / 306) Indian Resturants in Manor Heights, Staten Island:0


```
( 286 / 306 ) Indian Resturants in Willowbrook, Staten Island:0
( 287 / 306 ) Indian Resturants in Sandy Ground, Staten Island:0
( 288 / 306 ) Indian Resturants in Egbertville, Staten Island:0
( 289 / 306 ) Indian Resturants in Roxbury, Queens:0
( 290 / 306 ) Indian Resturants in Homecrest, Brooklyn:0
( 291 / 306 ) Indian Resturants in Middle Village, Queens:0
( 292 / 306 ) Indian Resturants in Prince's Bay, Staten Island:0
( 293 / 306 ) Indian Resturants in Lighthouse Hill, Staten Island:0
( 294 / 306 ) Indian Resturants in Richmond Valley, Staten Island:0
( 295 / 306 ) Indian Resturants in Malba, Queens:0
( 296 / 306 ) Indian Resturants in Highland Park, Brooklyn:0
( 297 / 306 ) Indian Resturants in Madison, Brooklyn:0
( 298 / 306 ) Indian Resturants in Bronxdale, Bronx:0
( 299 / 306 ) Indian Resturants in Allerton, Bronx:0
( 300 / 306 ) Indian Resturants in Kingsbridge Heights, Bronx:0
( 301 / 306 ) Indian Resturants in Erasmus, Brooklyn:1
( 302 / 306 ) Indian Resturants in Hudson Yards, Manhattan:0
( 303 / 306 ) Indian Resturants in Hammels, Queens:0
( 304 / 306 ) Indian Resturants in Bayswater, Queens:0
( 305 / 306 ) Indian Resturants in Queensbridge, Queens:2
( 306 / 306 ) Indian Resturants in Fox Hills, Staten Island:1
```

```
In [29]: plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('Number of Indian Resturants for each Neighborhood in New York City'
)
#On x-axis
plt.xlabel('Neighborhood', fontsize = 15)
#On y-axis
plt.ylabel('No.of Indian Resturants', fontsize=15)
#giving a bar plot
indian_rest_ny.groupby('Neighborhood')['ID'].count().nlargest(5).plot(kind='bar')
#Legend
plt.legend()
#displays the plot
plt.show()
```



```
In [30]: indian_rest_ny[indian_rest_ny['Neighborhood']=='Floral Park']
```

Out[30]:

	Borough	Neighborhood	ID	Name
109	Queens	Floral Park	4e4e3e22bd4101d0d7a5c2d1	Kerala Kitchen
110	Queens	Floral Park	527ffc0811d2d329d5e49abd	Jackson Diner
111	Queens	Floral Park	4b647b56f964a520c4b62ae3	Usha Foods & Usha Sweets
112	Queens	Floral Park	4b787c49f964a5209cd12ee3	Santoor Indian Restaurant
113	Queens	Floral Park	4c0c01e0bbc676b00d6b4cd5	Mumbai Xpress
114	Queens	Floral Park	4c76ff35a5676dcb72671721	Flavor Of India
115	Queens	Floral Park	4df0f39dd4c04d0392c853ea	Sagar Chinese
116	Queens	Floral Park	4cc642ed306e224b5bf2a76c	Shahi Darbar
117	Queens	Floral Park	4e6bfe1c7d8b2c711b17bbe5	Surya sweets and snacks

```
In [31]: # prepare neighborhood list that contains indian restaurants
column_names=['Borough', 'Neighborhood', 'ID','Name','Likes','Rating','Tips']
indian_rest_stats_ny=pd.DataFrame(columns=column_names)
count=1

for row in indian_rest_ny.values.tolist():
    Borough,Neighborhood,ID,Name=row
    try:
        venue_details=get_venue_details(ID)
        print(venue_details)
        id,name,likes,rating,tips=venue_details.values.tolist()[0]
    except IndexError:
        print('No data available for id=',ID)
        # we will assign 0 value for these restaurants as they may have been
        #recently opened or details does not exist in FourSquare Database
        id,name,likes,rating,tips=[0]*5
    print('(',count,'/',len(indian_rest_ny),')','processed')
    indian_rest_stats_ny = indian_rest_stats_ny.append({'Borough': Borough,
                                                         'Neighborhood': Neighborhood,
                                                         'ID': id,
                                                         'Name' : name,
                                                         'Likes' : likes,
                                                         'Rating' : rating,
                                                         'Tips' : tips
                                                         }, ignore_index=True)

    count+=1
```

```

      ID      Name  Likes  Rating  Tips
0  4c0448d9310fc9b6bf1dc761  Curry Spot      4      8.0    11
( 1 / 160 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 570c3a3fcd10eecd0d0434cd
( 2 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  4c194631838020a13e78e561  Melanies Roti Bar And Grill      3      6.3    2
( 3 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  4c04544df423a593ac83d116  Cumin Indian Cuisine     13      6.1    9
( 4 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  551b7f75498e86c00a0ed2e1  Hungry Bird      8      7.4    3
( 5 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  4c194631838020a13e78e561  Melanies Roti Bar And Grill      3      6.3    2
( 6 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  4b5a4dc8f964a520a2bb28e3  Taj Mahal      38      8.3    26
( 7 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  545835a1498e820edc6f636f  Bombay Grill     14      7.3    3
( 8 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  4af0d31bf964a5207ddf21e3  Pak Nasheman      9      7.6    4
( 9 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  52213c4211d295d4c57a607c  Ashoka Grill      8      7.3    14
( 10 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  564d283d498e6e851df79d87  Great Indian Curry      3      6.7    2
( 11 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  512a9ea9e4b004fb8eeb84e5  Silver Krust     12      8.3    3
( 12 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  4db0f4371e729fcc56497f20  Mashallah     19      7.7    7
( 13 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tip
s
0  4b718914f964a520c04b2de3  Madina Restaurant and Sweets     17      7.1    1
2
( 14 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  592e1dae345cbe0fc77cf6c9  Diwan Grill     13      8.7    5
( 15 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  52f18573498ec2c34e830ffd  Kanan's Indian Restaurant     23      7.9    8
( 16 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  57596dad498e732300496b23  Dosa Royale     70      8.6    21
( 17 / 160 ) processed

```

```

      ID      Name  Likes  Rating  Tips
0  568d3902498e619efcbc3f58  Spice & Grill     19      8.1    6

```

(18 / 160) processed

	ID	Name	Likes	Rating	Tips
0	57596dad498e732300496b23	Dosa Royale	70	8.6	21

(19 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4bb93b70cf2fc9b6fe64a002	Gandhi Fine Indian Cuisine	80	8.7	45

(20 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4ec80587d3e3e131f2e72835	Bayleaf	6	7.0	7

(21 / 160) processed

	ID	Name	Likes	Rating	Tips
0	5539753f498edbace4746b67	Tandoori Masala	12	8.3	2

(22 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4f6cae2ee4b0d4a5afcef5c0	Delhi Heights	22	8.2	8

(23 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 579e8145498ec3cf1ca04dd8

(24 / 160) processed

	ID	Name	Likes	Rating	Tips
0	519ff6c8498e1300ddcbd45c	Anarkali Indian Cuisine	14	7.9	8

(25 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4db0f4371e729fcc56497f20	Mashallah	19	7.7	7

(26 / 160) processed

	ID	Name	Likes	Rating	Tip
s	0 4b718914f964a520c04b2de3	Madina Restaurant and Sweets	17	7.1	1

(27 / 160) processed

	ID	Name	Likes	Rating	Tips
0	5631511b498e3d6d7e0a4df0	Tikka Indian Grill	94	8.7	26

(28 / 160) processed

	ID	Name	Likes	Rating	Tips
0	5631511b498e3d6d7e0a4df0	Tikka Indian Grill	94	8.7	26

(29 / 160) processed

	ID	Name	Likes	Rating	Tips
0	545835a1498e820edc6f636f	Bombay Grill	14	7.3	3

(30 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4ae7876ef964a5201eac21e3	Kismet Indian Restaurant	45	7.9	24

(31 / 160) processed

	ID	Name	Likes	Rating	\
0	54c2bd96498eaf5142e3fe92	Clove Indian Restaurant & Bar	29	7.6	

Tips

0 15

(32 / 160) processed

	ID	Name	Likes	Rating	Tips
0	5914ff32b23dfa207eca38de	Mumbai Masala	13	7.4	6

(33 / 160) processed

	ID	Name	Likes	Rating	Tips
0	529d382a11d2dd5ef107e641	Chapati House - NYC	73	8.0	18

(34 / 160) processed

	ID	Name	Likes	Rating	\
--	----	------	-------	--------	---

0 54c2bd96498eaf5142e3fe92 Clove Indian Restaurant & Bar 29 7.6

Tips

0 15

(35 / 160) processed

ID	Name	Likes	Rating	Tips
0 56d87f3d498ee215abee5724	Delhi Masala	13	8.6	3

(36 / 160) processed

ID	Name	Likes	Rating	\
0 54c2bd96498eaf5142e3fe92	Clove Indian Restaurant & Bar	29	7.6	

Tips

0 15

(37 / 160) processed

ID	Name	Likes	Rating	Tips
0 519fe6f5498e30595d370c44	Bawarchi	9	7.7	4

(38 / 160) processed

ID	Name	Likes	Rating	Tips
0 5272ca4511d22488f6895caf	Drunken Munkey	206	8.5	61

(39 / 160) processed

ID	Name	Likes	Rating	Tips
0 4fe4fb50c2eee335e4fea69d	Moti Mahal Delux	183	8.4	81

(40 / 160) processed

ID	Name	Likes	Rating	Tips
0 591890f43abcaf1ddca66e85	Ashoka	19	8.5	9

(41 / 160) processed

ID	Name	Likes	Rating	Tips
0 42489a80f964a5208b201fe3	Swagat	104	8.5	38

(42 / 160) processed

ID	Name	Likes	Rating	Tips
0 4b0dec08f964a520ae5223e3	Alachi Masala	18	7.6	17

(43 / 160) processed

ID	Name	Likes	Rating	Tips
0 49d91c12f964a520015e1fe3	The Kati Roll Company	832	8.8	257

(44 / 160) processed

ID	Name	Likes	Rating	Tips
0 59fcd48c464d6567ed2f5e37	The Kati Roll Company	15	8.8	2

(45 / 160) processed

ID	Name	Likes	Rating	Tips
0 4b4aab62f964a520978c26e3	Dil-e Punjab Deli	104	8.7	42

(46 / 160) processed

ID	Name	Likes	Rating	Tips
0 4bbb9dbded7776b0e1ad3e51	Tamarind TriBeCa	580	9.0	145

(47 / 160) processed

ID	Name	Likes	Rating	Tips
0 5b5a2c9e66f3cd002ca0aab5	The Drunken Munkey	20	8.7	3

(48 / 160) processed

ID	Name	Likes	Rating	Tips
0 591794df2be42556988e4a8e	Rahi	95	8.8	15

(49 / 160) processed

ID	Name	Likes	Rating	Tips
0 424de080f964a520ae201fe3	Manhattan Valley	42	7.9	30

(50 / 160) processed

ID	Name	Likes	Rating	Tips
0 4d24b812836f5481518645f7	Doaba Deli	41	7.4	13

(51 / 160) processed

ID	Name	Likes	Rating	Tips
----	------	-------	--------	------

ID	Name	Likes	Rating	Tips
0 538ba1f2498e279098e4210a	Awadh	47	8.0	13
(52 / 160) processed				
0 49c5ad0af964a5201b571fe3	Roti Roll	114	7.9	58
(53 / 160) processed				
0 4ad12c9df964a52040dd20e3	Aangan	35	7.4	14
(54 / 160) processed				
0 49c5ad0af964a5201b571fe3	Roti Roll	114	7.9	58
(55 / 160) processed				
0 529d382a11d2dd5ef107e641	Chapati House - NYC	73	8.0	18
(56 / 160) processed				
0 4a70a75bf964a52016d81fe3	Bhatti Indian Grill	411	8.7	156
(57 / 160) processed				
0 57f7cbbe498edf8f07c7ba83	Sahib	58	8.8	13
(58 / 160) processed				
0 523b2b42498e1dfabcc8ab15	Pippali	294	8.7	75
(59 / 160) processed				
0 5b770657c0cacb002c89bc63	The Kati Roll Company	12	8.1	2
(60 / 160) processed				
0 4aa56c81f964a5204e4820e3	Seva Indian Cuisine	236	8.9	129
(61 / 160) processed				
0 4afdcf29f964a520162b22e3	Rajbhog Sweets	38	8.5	25
(62 / 160) processed				
0 4c7060e734443704ca0e245f	Kababish	30	7.9	17
(63 / 160) processed				
0 4b998d3ff964a520fc8235e3	Maharaja Sweets & Snacks	50	8.2	21
(64 / 160) processed				
0 49ebb18ff964a52016671fe3	Delhi Heights	33	8.0	23
(65 / 160) processed				
0 3fd66200f964a52009f11ee3	Jackson Diner	139	7.9	76
(66 / 160) processed				
0 4b189424f964a52043d423e3	Dera	46	7.5	19
(67 / 160) processed				
0 527d9cbc498edf0db10bde6b	Samudra	45	8.6	14
(68 / 160) processed				
0 4afdcf29f964a520162b22e3	Rajbhog Sweets	38	8.5	25
(69 / 160) processed				
0 4b998d3ff964a520fc8235e3	Maharaja Sweets & Snacks	50	8.2	21
(70 / 160) processed				

0 49ebb18ff964a52016671fe3 Delhi Heights 33 8.0 23
(71 / 160) processed

ID	Name	Likes	Rating	Tips
0 3fd66200f964a52009f11ee3	Jackson Diner	139	7.9	76

(72 / 160) processed

ID	Name	Likes	Rating	Tips
0 527d9cbc498edf0db10bde6b	Samudra	45	8.6	14

(73 / 160) processed

ID	Name	Likes	Rating	Tips
0 5782c9ce498edde587f5aa14	Tikka Indian Grill	9	7.7	2

(74 / 160) processed

ID	Name	Likes	Rating	Tips
0 4bbe78bfba9776b070cefcdc8	Mehak Mughlai Cuisine	8	7.5	10

(75 / 160) processed

ID	Name	Likes	Rating	Tips
0 4b522029f964a520f26927e3	Sohna Punjab	8	7.8	2

(76 / 160) processed

ID	Name	Likes	Rating	Tips
0 4f1b77d7e4b044fd359e6d21	India Cafe	6	7.2	3

(77 / 160) processed

ID	Name	Likes	Rating	Tips
0 5782c9ce498edde587f5aa14	Tikka Indian Grill	9	7.7	2

(78 / 160) processed

ID	Name	Likes	Rating	Tips
0 4bb2bc48a32876b02e0b01fe	Tandoori Hut	6	6.1	15

(79 / 160) processed

ID	Name	Likes	Rating	Tips
0 4babc24ef964a5200ac73ae3	Royal India Palace	7	6.1	3

(80 / 160) processed

ID	Name	Likes	Rating	Tips
0 4adbaef0f964a520ff2921e3	Punjabi Kabab House	7	5.8	7

(81 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 57d9e9a1498e545076560fef

(82 / 160) processed

ID	Name	Likes	Rating	Tips
0 50a287a7e4b0033f830f06db	Raj's Indian Kitchen	21	7.4	9

(83 / 160) processed

ID	Name	Likes	Rating	Tips
0 5b931ea69d7468002c3b1382	Adda	93	9.1	26

(84 / 160) processed

ID	Name	Likes	Rating	Tips
0 5b931ea69d7468002c3b1382	Adda	93	9.1	26

(85 / 160) processed

ID	Name	Likes	Rating	Tips
0 50e1c9708aca7ff2b3e50353	Nepalese Indian Restaurant	54	8.3	18

(86 / 160) processed

ID	Name	Likes	Rating	Tips
0 5625af69498ebbc62b61a382	Aaheli Restaurant	12	7.9	6

(87 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 579e8145498ec3cf1ca04dd8

(88 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 572d7c21498e098658a0edd7

(89 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4ee8dddb5c5c99a2dc780825

(90 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4f1f4996e4b01ff351a7a50c	Ayna Agra Indian Restaurant	39	8.2	12

(91 / 160) processed

	ID	Name	Likes	Rating	Tips
0	539a4ff0498e79c6745baba9	Masala Box	9	8.4	2

(92 / 160) processed

	ID	Name	Likes	Rating	Tips
0	539e27b0498e2eba582085ee	masalabox	7	6.6	2

(93 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4b787c49f964a5209cd12ee3	Santoor Indian Restaurant	36	7.6	17

(94 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4b9030abf964a520397b33e3	Taste of Cochin	8	6.4	3

(95 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4df0f39dd4c04d0392c853ea	Sagar Chinese	7	6.1	6

(96 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4c0e256ab1b676b06589e186	Sohna Punjab	3	6.1	3

(97 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4dc0aaedae606fe8b71c226b

(98 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4b96926df964a520abd534e3

(99 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 5401515e498e60d0fe0abe3b

(100 / 160) processed

	ID	Name	Likes	Rating
0	4be334312fc7d13a7a81083a	Taj Mahal Restaurant & Party Hall	23	7.7

Tips
0 5

(101 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4bad49a0f964a52041423be3	Annam Brahma	15	8.4	3

(102 / 160) processed

	ID	Name	Likes	Rating	Tips
--	----	------	-------	--------	------

```
0 4cc08b0900d83704ed474b5c Sybil's Bakery      8      6.8      3
( 103 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4bad49a0f964a52041423be3 Annam Brahma      15      8.4      3
( 104 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4c434b2bd691c9b6ef8f8f0a Sagar Restaurant    10      7.2      6
( 105 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4cc08b0900d83704ed474b5c Sybil's Bakery      8      6.8      3
( 106 / 160 ) processed
```

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 59fcbd4edb1d813e71197d23

```
( 107 / 160 ) processed
```

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 55b7f71a498ea4f9656f52c7

```
( 108 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 562035d9498e2abb4137c2c7 Yaar Indian Restaurant    29      8.6      7
( 109 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4e4e3e22bd4101d0d7a5c2d1 Kerala Kitchen        5      8.3      6
( 110 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 527ffc0811d2d329d5e49abd Jackson Diner         9      8.0      3
( 111 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4b647b56f964a520c4b62ae3 Usha Foods & Usha Sweets    32      7.8     10
( 112 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4b787c49f964a5209cd12ee3 Santoor Indian Restaurant    36      7.6     17
( 113 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4c0c01e0bbc676b00d6b4cd5 Mumbai Xpress        16      6.8     18
( 114 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4c76ff35a5676dcb72671721 Flavor Of India         6      6.0      6
( 115 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4df0f39dd4c04d0392c853ea Sagar Chinese         7      6.1      6
( 116 / 160 ) processed
```

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4cc642ed306e224b5bf2a76c

```
( 117 / 160 ) processed
```

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4e6bfe1c7d8b2c711b17bbe5

```
( 118 / 160 ) processed
```

```
      ID      Name  Likes  Rating  Tips
0 4f580c1be4b0bdfd0e7e8102 Rajdhani Indian Restaurant    13      8.2      6
```

(119 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4c434b2bd691c9b6ef8f8f0a	Sagar Restaurant	10	7.2	6

(120 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4b8d5734f964a520b1f532e3

(121 / 160) processed

	ID	Name	Likes	Rating	Tips
0	5623f6f9498e5a44a08bfae8	Boishakhi Restaurant	17	8.1	7

(122 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4dc0aaedae606fe8b71c226b

(123 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4f188adfe4b0cae4b525a694	Haveli	14	7.2	9

(124 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4b9be038f964a520393036e3	Dosa Garden	18	7.7	17

(125 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4be74a502468c928505a0243	Taste Of India II	29	8.1	14

(126 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4b9be038f964a520393036e3	Dosa Garden	18	7.7	17

(127 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4b65f2e3f964a5206e0a2be3

(128 / 160) processed

	ID	Name	Likes	Rating	Tips
0	519ff6c8498e1300ddcbd45c	Anarkali Indian Cuisine	14	7.9	8

(129 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4db0f4371e729fcc56497f20	Mashallah	19	7.7	7

(130 / 160) processed

	ID	Name	Likes	Rating	Tip
s	0	4b718914f964a520c04b2de3	Madina Restaurant and Sweets	17	7.1

2

(131 / 160) processed

	ID	Name	Likes	Rating	Tips
0	564d283d498e6e851df79d87	Great Indian Curry	3	6.7	2

(132 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4b65f2e3f964a5206e0a2be3

(133 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4be74a502468c928505a0243	Taste Of India II	29	8.1	14

(134 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4ce99c2df1c6236a1b7266f0

(135 / 160) processed

	ID	Name	Likes	Rating	Tips
0	5272ca4511d22488f6895caf	Drunken Munkey	206	8.5	61

(136 / 160) processed

	ID	Name	Likes	Rating	Tips
0	56ed855a498ef3bb022352c3	mughlai Indian Cuisine	24	7.8	9

(137 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4bbb9dbded7776b0e1ad3e51	Tamarind TriBeCa	580	9.0	145

(138 / 160) processed

	ID	Name	Likes	Rating	Tips
0	49d91c12f964a520015e1fe3	The Kati Roll Company	832	8.8	257

(139 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4b65f2e3f964a5206e0a2be3

(140 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4b65f2e3f964a5206e0a2be3

(141 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4bad49a0f964a52041423be3	Annam Brahma	15	8.4	3

(142 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4c434b2bd691c9b6ef8f8f0a	Sagar Restaurant	10	7.2	6

(143 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4cc08b0900d83704ed474b5c	Sybil's Bakery	8	6.8	3

(144 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4cb4a712db32f04dcb5adf4d

(145 / 160) processed

Empty DataFrame

Columns: [ID, Name, Likes, Rating, Tips]

Index: []

No data available for id= 4c2e8df2213c2d7f94742f5d

(146 / 160) processed

	ID	Name	Likes	Rating	Tips
0	551b7f75498e86c00a0ed2e1	Hungry Bird	8	7.4	3

(147 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4fe4fb50c2eee335e4fea69d	Moti Mahal Delux	183	8.4	81

(148 / 160) processed

	ID	Name	Likes	Rating	Tips
0	4f57f98fe4b0bd50f6bb8b31	The Kati Roll Company	181	8.3	55

(149 / 160) processed

	ID	Name	Likes	Rating	Tips
0	59fcd48c464d6567ed2f5e37	The Kati Roll Company	15	8.8	2

(150 / 160) processed

```

      ID      Name  Likes  Rating  Tips
0  5ac3984ae57ca64be4dc6168  INDAY      30      8.3      8
( 151 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  4f57f98fe4b0bd50f6bb8b31  The Kati Roll Company      181      8.3      55
( 152 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  59fcd48c464d6567ed2f5e37  The Kati Roll Company      15      8.8      2
( 153 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  5ac3984ae57ca64be4dc6168  INDAY      30      8.3      8
( 154 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  4c48da9f3013a59356c5f0e1  Saffron Garden      17      7.8      16
( 155 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  5b931ea69d7468002c3b1382  Adda      93      9.1      26
( 156 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  564d283d498e6e851df79d87  Great Indian Curry      3      6.7      2
( 157 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  50a287a7e4b0033f830f06db  Raj's Indian Kitchen      21      7.4      9
( 158 / 160 ) processed

      ID      Name  Likes  Rating  Tips
0  4b1b341bf964a5208af923e3  Five Star Banquet      29      6.9      31
( 159 / 160 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4b65f2e3f964a5206e0a2be3
( 160 / 160 ) processed

```

In [32]: `indian_rest_stats_ny.head()`

Out[32]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Bronx	Woodlawn	4c0448d9310fc9b6bf1dc761	Curry Spot	4	8.0	11
1	Bronx	Williamsbridge	0	0	0	0.0	0
2	Bronx	Parkchester	4c194631838020a13e78e561	Melanies Roti Bar And Grill	3	6.3	2
3	Bronx	Spuyten Duyvil	4c04544df423a593ac83d116	Cumin Indian Cuisine	13	6.1	9
4	Bronx	Concourse	551b7f75498e86c00a0ed2e1	Hungry Bird	8	7.4	3

In [33]: `indian_rest_stats_ny.shape`

Out[33]: (160, 7)

In [34]: `indian_rest_ny.shape`

Out[34]: (160, 4)

```
In [35]: indian_rest_stats_ny.to_csv('indian_rest_stats_ny.csv', index=False)
```

```
In [36]: indian_rest_stats_ny_csv=pd.read_csv('indian_rest_stats_ny.csv')
```

```
In [37]: indian_rest_stats_ny_csv.shape
```

```
Out[37]: (160, 7)
```

```
In [38]: indian_rest_stats_ny_csv.head()
```

```
Out[38]:
```

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Bronx	Woodlawn	4c0448d9310fc9b6bf1dc761	Curry Spot	4	8.0	11
1	Bronx	Williamsbridge	0	0	0	0.0	0
2	Bronx	Parkchester	4c194631838020a13e78e561	Melanies Roti Bar And Grill	3	6.3	2
3	Bronx	Spuyten Duyvil	4c04544df423a593ac83d116	Cumin Indian Cuisine	13	6.1	9
4	Bronx	Concourse	551b7f75498e86c00a0ed2e1	Hungry Bird	8	7.4	3

```
In [39]: indian_rest_stats_ny.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 160 entries, 0 to 159
Data columns (total 7 columns):
Borough      160 non-null object
Neighborhood  160 non-null object
ID            160 non-null object
Name          160 non-null object
Likes         160 non-null object
Rating        160 non-null float64
Tips          160 non-null object
dtypes: float64(1), object(6)
memory usage: 8.8+ KB
```

```
In [40]: indian_rest_stats_ny['Likes']=indian_rest_stats_ny['Likes'].astype('float64')
```

```
In [41]: indian_rest_stats_ny['Tips']=indian_rest_stats_ny['Tips'].astype('float64')
```

In [42]: `indian_rest_stats_ny.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 160 entries, 0 to 159
Data columns (total 7 columns):
Borough          160 non-null object
Neighborhood      160 non-null object
ID               160 non-null object
Name             160 non-null object
Likes            160 non-null float64
Rating           160 non-null float64
Tips             160 non-null float64
dtypes: float64(3), object(4)
memory usage: 8.8+ KB
```

In [43]: `# Restaurant with maximum Likes`

```
indian_rest_stats_ny.iloc[indian_rest_stats_ny['Likes'].idxmax()]
```

Out[43]:

Borough	Manhattan
Neighborhood	Midtown
ID	49d91c12f964a520015e1fe3
Name	The Kati Roll Company
Likes	832
Rating	8.8
Tips	257

Name: 43, dtype: object

In [44]: `# Restaurant with maximum Rating`

```
indian_rest_stats_ny.iloc[indian_rest_stats_ny['Rating'].idxmax()]
```

Out[44]:

Borough	Queens
Neighborhood	Long Island City
ID	5b931ea69d7468002c3b1382
Name	Adda
Likes	93
Rating	9.1
Tips	26

Name: 83, dtype: object

In [45]: `# Restaurant with maximum Tips`

```
indian_rest_stats_ny.iloc[indian_rest_stats_ny['Tips'].idxmax()]
```

Out[45]:

Borough	Manhattan
Neighborhood	Midtown
ID	49d91c12f964a520015e1fe3
Name	The Kati Roll Company
Likes	832
Rating	8.8
Tips	257

Name: 43, dtype: object

In [46]: `ny_neighborhood_stats=indian_rest_stats_ny.groupby('Neighborhood',as_index=False).mean()[['Neighborhood','Rating']]`
`ny_neighborhood_stats.columns=['Neighborhood','Average Rating']`


```
In [47]: ny_neighborhood_stats.sort_values(['Average Rating'],ascending=False).head(10)
```

Out[47]:

	Neighborhood	Average Rating
6	Blissville	9.100000
76	Tribeca	9.000000
13	Civic Center	9.000000
0	Astoria	8.900000
51	Murray Hill	8.800000
48	Midtown	8.800000
49	Midtown South	8.800000
82	West Village	8.750000
34	Gramercy	8.733333
11	Chelsea	8.700000

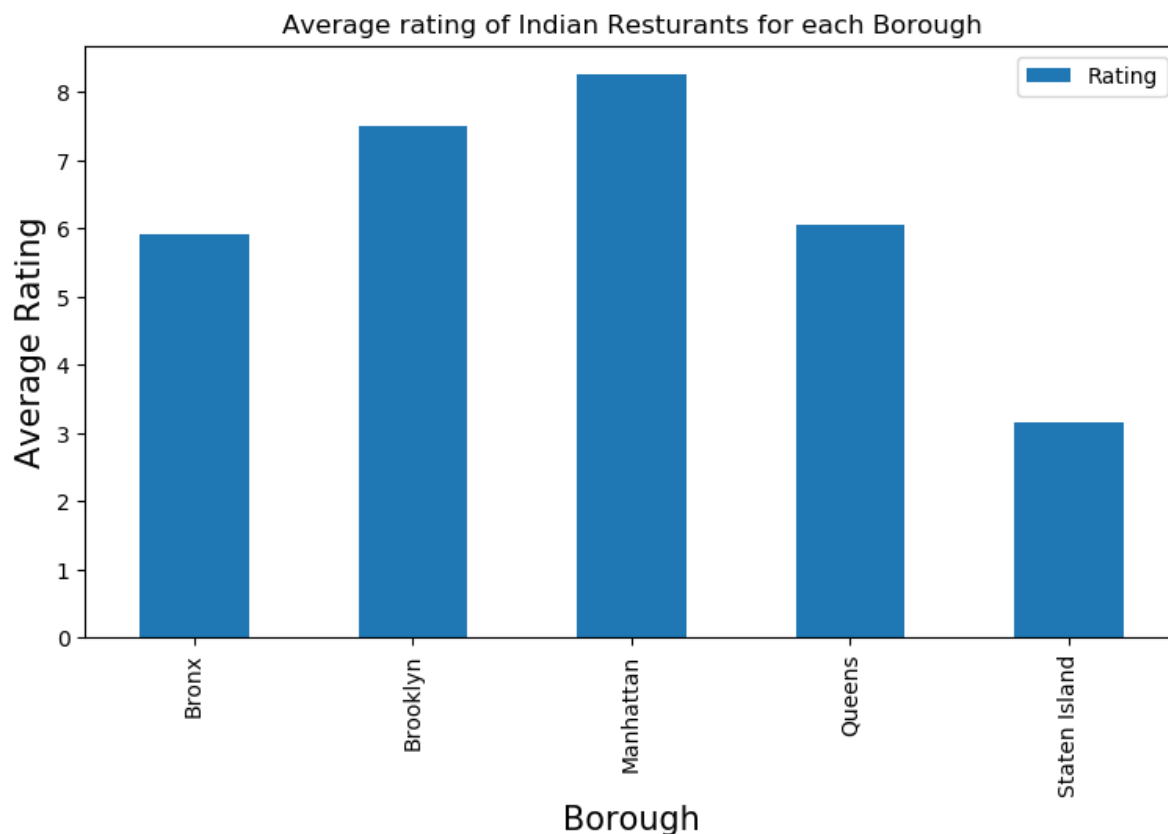
```
In [48]: ny_borough_stats=indian_rest_stats_ny.groupby('Borough',as_index=False).mean()  
[['Borough','Rating']]  
ny_borough_stats.columns=['Borough','Average Rating']
```

```
In [49]: ny_borough_stats.sort_values(['Average Rating'],ascending=False).head()
```

Out[49]:

	Borough	Average Rating
2	Manhattan	8.263415
1	Brooklyn	7.513793
3	Queens	6.063014
0	Bronx	5.928571
4	Staten Island	3.160000

```
In [50]: plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('Average rating of Indian Resturants for each Borough')
#On x-axis
plt.xlabel('Borough', fontsize = 15)
#On y-axis
plt.ylabel('Average Rating', fontsize=15)
#giving a bar plot
indian_rest_stats_ny.groupby('Borough').mean()['Rating'].plot(kind='bar')
#legend
plt.legend()
#displays the plot
plt.show()
```



```
In [51]: ny_neighborhood_stats=ny_neighborhood_stats[ny_neighborhood_stats['Average Rating']>=9.0]
```

```
In [52]: ny_neighborhood_stats
```

Out[52]:

	Neighborhood	Average Rating
6	Blissville	9.1
13	Civic Center	9.0
76	Tribeca	9.0

```
In [53]: ny_neighborhood_stats=pd.merge(ny_neighborhood_stats,new_york_data, on='Neighborhood')
```

```
In [54]: ny_neighborhood_stats=ny_neighborhood_stats[['Borough', 'Neighborhood', 'Latitude', 'Longitude', 'Average Rating']]
```

```
In [55]: ny_neighborhood_stats
```

```
Out[55]:
```

	Borough	Neighborhood	Latitude	Longitude	Average Rating
0	Queens	Blissville	40.737251	-73.932442	9.1
1	Manhattan	Civic Center	40.715229	-74.005415	9.0
2	Manhattan	Tribeca	40.721522	-74.010683	9.0

```
In [56]: # create map and display it
ny_map = folium.Map(location=geo_location('New York'), zoom_start=12)
```

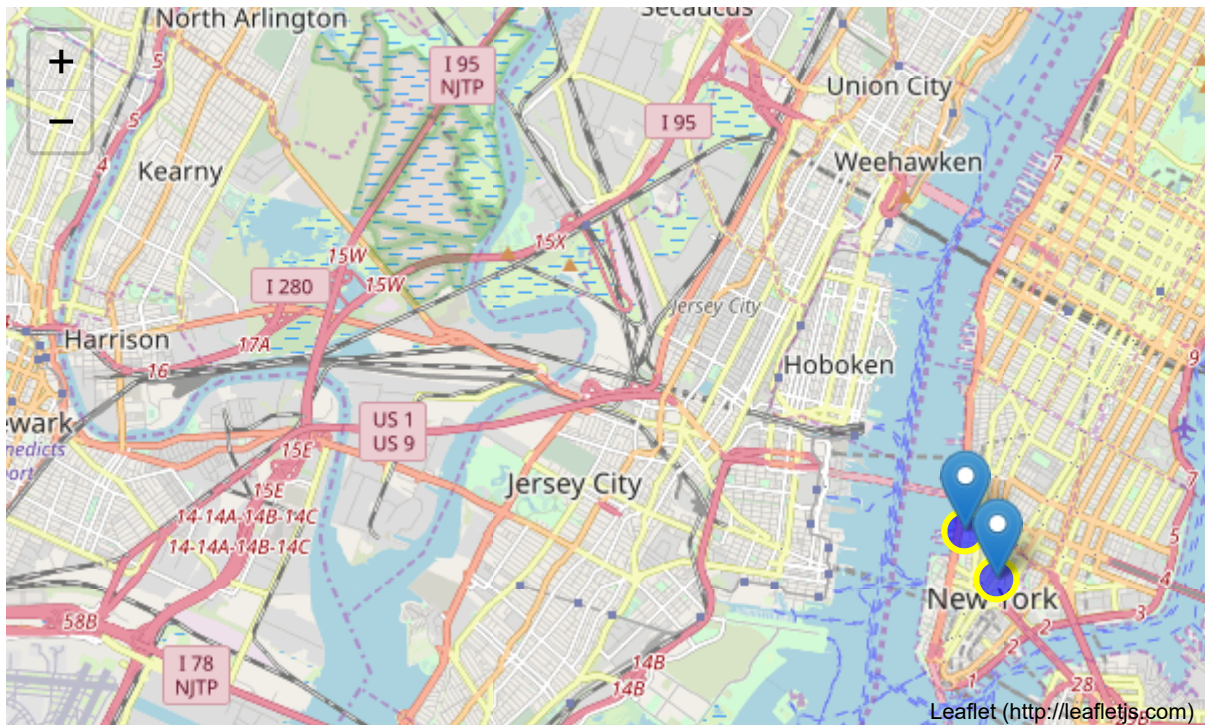
```
In [57]: # instantiate a feature group for the incidents in the dataframe
incidents = folium.map.FeatureGroup()

# Loop through the 100 crimes and add each to the incidents feature group
for lat, lng, in ny_neighborhood_stats[['Latitude', 'Longitude']].values:
    incidents.add_child(
        folium.CircleMarker(
            [lat, lng],
            radius=10, # define how big you want the circle markers to be
            color='yellow',
            fill=True,
            fill_color='blue',
            fill_opacity=0.6
        )
    )
```

```
In [58]: ny_neighborhood_stats['Label']=ny_neighborhood_stats['Neighborhood']+', '+ny_neighborhood_stats['Borough']+' ('+ny_neighborhood_stats['Average Rating'].map(str)+')
```

```
In [59]: # add pop-up text to each marker on the map
for lat, lng, label in ny_neighborhood_stats[['Latitude','Longitude','Label']].values:
    folium.Marker([lat, lng], popup=label).add_to(ny_map)
# add incidents to map
ny_map.add_child(incidents)
```

Out[59]:



```
In [2]: ny_map = folium.Map(location=geo_location('New York'), zoom_start=12)
ny_geo = r'Borough Boundaries.geojson'

ny_map.choropleth(
    geo_data=ny_geo,
    data=ny_borough_stats,
    columns=['Borough', 'Average Rating'],
    key_on='feature.properties.boro_name',
    fill_color='YlOrRd',
    fill_opacity=0.7,
    line_opacity=0.2,
    legend_name='Average Rating'
)

# display map
# as this is huge map data , we will save it to a file
ny_map.save('borough_rating.html')
```

Conclusion

Astoria(Queens), Blissville(Queens), Civic Center(Manhattan) are some of the best neighborhoods for indian cuisine. Manhattan have potential Indian Resturant Market/ Staten Island ranks last in average rating of Indian Resturants. Manhattan is the best place to stay if you prefer Indian Cuisine.

In []: