

Coursera-Capstone-Project (/github/pcomandur/Coursera-Capstone-Project/tree/master)

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The_Battle_of_NYC_Neighborhoods.ipynb (/github/pcomandur/Coursera-Capstone-Project/tree/master/The_Battle_of_NYC_Neighborhoods.ipynb)

Capstone Project - The Battle of Neighborhoods

Introduction

New York City, often called simply New York and abbreviated as NYC, is the most populous city in the United States. With an estimated 2019 population of 8,336,817 distributed over about 302.6 square miles (784 km²), New York is also the most densely populated major city in the United States. Located at the southern tip of the U.S. state of New York, the city is the center of the New York metropolitan area, the largest metropolitan area in the world by urban landmass. With almost 20 million people in its metropolitan statistical area and approximately 23 million in its combined statistical area, it is one of the world's most populous megacities. New York City has been described as the cultural, financial, and media capital of the world, significantly influencing commerce, entertainment, research, technology, education, politics, tourism, art, fashion, and sports. Home to the headquarters of the United Nations, New York is an important center for international diplomacy.

New York City is composed of five boroughs, each of which is a county of the State of New York. The five boroughs — Brooklyn, Queens, Manhattan, the Bronx, and Staten Island — were consolidated into a single city in 1898. The city and its metropolitan area constitute the premier gateway for legal immigration to the United States. As many as 800 languages are spoken in New York, making it the most linguistically diverse city in the world. New York is home to more than 3.2 million residents born outside the United States, the largest foreign-born population of any city in the world as of 2016. 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.

New York City has the largest population of Italian Americans in the USA as well as North America. New York City is home to the third largest Italian population outside of Italy, behind São Paulo, Brazil and Buenos Aires, Argentina, respectively. Over 1.3 million Italians and Italian-Americans live in the greater New York City metro area, with about 800,000 living within one of the five New York City boroughs. Some of the Italian-American neighborhoods in New York City are -

1. Arthur Avenue (the Bronx's Little Italy)
2. Bensonhurst, Brooklyn (Brooklyn's Little Italy)
3. Mulberry Street, Little Italy, Manhattan
4. Howard Beach, Queens
5. Staten Island – The borough has the highest proportion of Italian Americans of any county in the United States. About 200,000 residents claim Italian heritage (55%).

As part of this project, using the Foursquare APIs, we will analyze the Italian restaurants in the 5 boroughs and its various neighborhoods, rank the borough with the highest rated Italian restaurants and also rank the neighborhoods which have the highest number of Italian restaurants. We will also visualize the neighborhoods in a choropleth map.

Data

For this project we will 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 dataset to explore various neighborhoods of New York City.

Italian restaurants in each neighborhood of new york city. Data source : Foursquare APIs Description : By using the Foursquare APIs we will get all the venues in each neighborhood. We can filter these venues to get only Italian restaurants.

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 Geospace data we will get the New York Borough boundaries that will help us visualize the top rated Italian restaurants in a Choropleth map.

Data Analysis Approach

1. Get the New York city data from https://cocl.us/new_york_dataset (https://cocl.us/new_york_dataset)
2. Using the FourSquare API we will find all venues for each neighborhood
3. Filter out all venues that are Italian Restaurants
4. Find the Rating , Tips and Likes count for each Italian Restaurants using FourSquare API
5. Sort the Restaurants by the user Ratings
6. Visualize the Ranking of neighborhoods using Folium library(Python)

Questions that can be asked using the above mentioned datasets

What is/are the best Borough(s) and Neighborhood(s) in New York City for Italian Cuisine? Which neighborhoods have potential for opening Italian Restaurants? What are the best neighborhoods to stay in, if I prefer Italian Cuisine?

Analysis We will import the required libraries for Python - pandas and numpy for handling data. request module for using FourSquare API. geopy to get co-ordinates of City of New York. folium to visualize the results on a map

Import necessary libraries

In [7]:

```

import numpy as np # Library to handle data in a vectorized manner

import pandas as pd # Library for data analysis
pd.set_option('display.max_columns', None)
pd.set_option('display.max_rows', None)

import json # Library to handle JSON files

!conda install -c conda-forge geopy --yes # uncomment this line if you haven't completed the Foursquare
from geopy.geocoders import Nominatim # convert an address into latitude and longitude values

import requests # Library to handle requests
from pandas.io.json import json_normalize # tranform JSON file into a pandas dataframe

# Matplotlib and associated plotting modules
import matplotlib.cm as cm
import matplotlib.colors as colors

# import k-means from clustering stage
from sklearn.cluster import KMeans

!conda install -c conda-forge folium=0.5.0 --yes # uncomment this line if you haven't completed the Folium
import folium # map rendering library

print('Libraries imported.')

```

Collecting package metadata (current_repodata.json): done
Solving environment: done

Package Plan

environment location: /home/jupyterlab/conda/envs/python

added / updated specs:

- geopy

The following packages will be downloaded:

package	build		
geographiclib-1.50	py_0	34 KB	conda-forge
geopy-2.0.0	pyh9f0ad1d_0	63 KB	conda-forge
Total:		97 KB	

The following NEW packages will be INSTALLED:

geographiclib	conda-forge/noarch::geographiclib-1.50-py_0
geopy	conda-forge/noarch::geopy-2.0.0-pyh9f0ad1d_0

Downloading and Extracting Packages

geopy-2.0.0	63 KB	#####	100%
geographiclib-1.50	34 KB	#####	100%

Preparing transaction: done

Verifying transaction: done

Executing transaction: done

Collecting package metadata (current_repodata.json): done

Solving environment: failed with initial frozen solve. Retrying with flexible solve.

Collecting package metadata (repodata.json): done

Solving environment: done

Package Plan

environment location: /home/jupyterlab/conda/envs/python

added / updated specs:

- folium=0.5.0

The following packages will be downloaded:

package	build		
altair-4.1.0	py_1	614 KB	conda-forge
branca-0.4.1	py_0	26 KB	conda-forge
brotlipy-0.7.0	py36h8c4c3a4_1000	346 KB	conda-forge
chardet-3.0.4	py36h9f0ad1d_1006	188 KB	conda-forge
cryptography-2.9.2	py36h45558ae_0	613 KB	conda-forge
folium-0.5.0	py_0	45 KB	conda-forge
pandas-1.0.5	py36h830a2c2_0	10.1 MB	conda-forge
pysocks-1.7.1	py36h9f0ad1d_1	27 KB	conda-forge
toolz-0.10.0	py_0	46 KB	conda-forge
vincent-0.4.4	py_1	28 KB	conda-forge
Total:		12.0 MB	

The following NEW packages will be INSTALLED:

altair	conda-forge/noarch::altair-4.1.0-py_1
attrs	conda-forge/noarch::attrs-19.3.0-py_0
branca	conda-forge/noarch::branca-0.4.1-py_0
brotlipy	conda-forge/linux-64::brotlipy-0.7.0-py36h8c4c3a4_1000
chardet	conda-forge/linux-64::chardet-3.0.4-py36h9f0ad1d_1006
cryptography	conda-forge/linux-64::cryptography-2.9.2-py36h45558ae_0
entrypoints	conda-forge/linux-64::entrypoints-0.3-py36h9f0ad1d_1001
folium	conda-forge/noarch::folium-0.5.0-py_0
idna	conda-forge/noarch::idna-2.10-pyh9f0ad1d_0
importlib_metadata	conda-forge/noarch::importlib_metadata-1.7.0-0
jinja2	conda-forge/noarch::jinja2-2.11.2-pyh9f0ad1d_0
jsonschema	conda-forge/linux-64::jsonschema-3.2.0-py36h9f0ad1d_1
markupsafe	conda-forge/linux-64::markupsafe-1.1.1-py36h8c4c3a4_1
pandas	conda-forge/linux-64::pandas-1.0.5-py36h830a2c2_0
pyopenssl	conda-forge/noarch::pyopenssl-19.1.0-py_1
pysistent	conda-forge/linux-64::pysistent-0.16.0-py36h8c4c3a4_0
pysocks	conda-forge/linux-64::pysocks-1.7.1-py36h9f0ad1d_1
pytz	conda-forge/noarch::pytz-2020.1-pyh9f0ad1d_0
requests	conda-forge/noarch::requests-2.24.0-pyh9f0ad1d_0
toolz	conda-forge/noarch::toolz-0.10.0-py_0
urllib3	conda-forge/noarch::urllib3-1.25.9-py_0
vincent	conda-forge/noarch::vincent-0.4.4-py_1

Downloading and Extracting Packages

pysocks-1.7.1	27 KB	#####	100%
toolz-0.10.0	46 KB	#####	100%
chardet-3.0.4	188 KB	#####	100%
folium-0.5.0	45 KB	#####	100%
branca-0.4.1	26 KB	#####	100%
cryptography-2.9.2	613 KB	#####	100%
brotlipy-0.7.0	346 KB	#####	100%
altair-4.1.0	614 KB	#####	100%
pandas-1.0.5	10.1 MB	#####	100%
vincent-0.4.4	28 KB	#####	100%

Preparing transaction: done
 Verifying transaction: done
 Executing transaction: done
 Libraries imported.

Define Foursquare Credentials and Version

In [81]:

```
CLIENT_ID = 'GQG2A03KQUJVUJCZWIGFZJVBLEVSMI1CDEEEL5BECXCJ0JHA' # your Foursquare ID
CLIENT_SECRET = 'GUJCP5K44TITQ4XTPYBVXF1QEWS2NHVZVITATJJCWQZSB54C' # your Foursquare Secret
VERSION = '20180605' # Foursquare API version
```

Define a function to get the latitude and longitude of a given location using geopy

In [9]:

```
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
```

Define a function to get the list of Venues using the Foursquare API

In [10]:

```
def get_venues(lat,lng):  
  
    #set variables  
    radius=1000  
    LIMIT=100  
  
    #url to fetch data from foursquare api  
    url = 'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&ll={},{}&r  
        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
```

Define a function to get the Venue details - Rating, Tips, Likes - for ranking

In [11]:

```
def get_venue_details(venue_id):

    #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,venue_tips])
    except KeyError:
        pass

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

Define a function to get NYC data - Boroughs and Neighborhoods and their Latitude, Longitude

In [12]:

```
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
```

Get New York City data

In [13]:

```
new_york_data=get_new_york_data()
```

In [14]: `new_york_data.head()`

Out[14]:

	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 [15]: `new_york_data.shape`

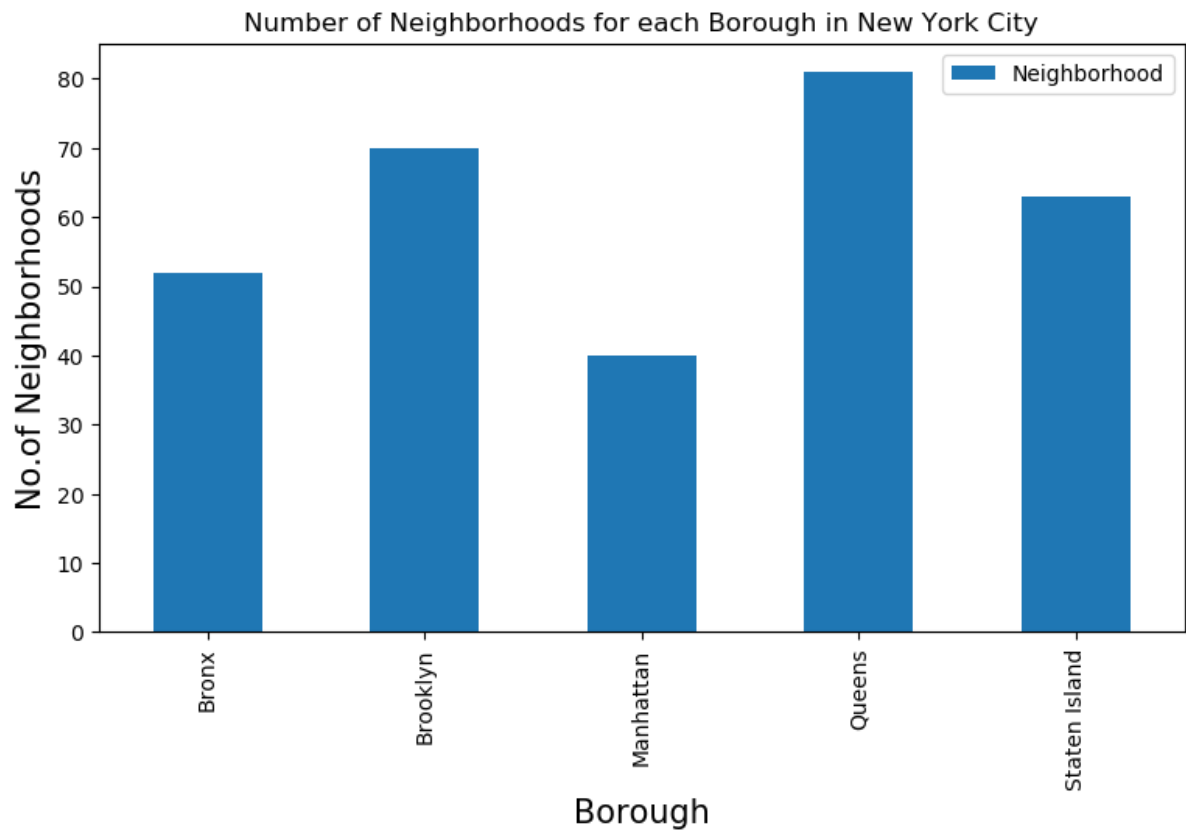
Out[15]: (306, 4)

In [16]: `# Matplotlib and associated plotting modules
import matplotlib.pyplot as plt
import matplotlib.cm as cm
import matplotlib.colors as colors
%matplotlib inline`

Plot the number of Neighborhoods in each of the 5 Boroughs

In [17]:

```
import matplotlib.pyplot as plt
plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('Number of Neighborhoods for each Borough in New York City')
#On x-axis
plt.xlabel('Borough', fontsize = 15)
#On y-axis
plt.ylabel('No.of Neighborhoods', 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 [18]: new_york_data_Bronx = new_york_data[new_york_data['Borough'] == 'Bronx']
new_york_data_Brooklyn = new_york_data[new_york_data['Borough'] == 'Brooklyn']
new_york_data_Manhattan = new_york_data[new_york_data['Borough'] == 'Manhattan']
new_york_data_Queens = new_york_data[new_york_data['Borough'] == 'Queens']
new_york_data_Staten_Island = new_york_data[new_york_data['Borough'] == 'Staten Island']
```

```
In [19]: new_york_data_Bronx.shape
```

```
Out[19]: (52, 4)
```

```
In [20]: new_york_data_Brooklyn.shape
```

```
Out[20]: (70, 4)
```

```
In [21]: new_york_data_Manhattan.shape
```

```
Out[21]: (40, 4)
```

```
In [22]: new_york_data_Queens.shape
```

```
Out[22]: (81, 4)
```

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

```
Out[23]: (63, 4)
```

In [26]:

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

    count+=1
```

```
( 1 / 52 ) Italian Restaurants in Wakefield, Bronx:0
( 2 / 52 ) Italian Restaurants in Co-op City, Bronx:0
( 3 / 52 ) Italian Restaurants in Eastchester, Bronx:0
( 4 / 52 ) Italian Restaurants in Fieldston, Bronx:0
( 5 / 52 ) Italian Restaurants in Riverdale, Bronx:1
( 6 / 52 ) Italian Restaurants in Kingsbridge, Bronx:1
( 7 / 52 ) Italian Restaurants in Woodlawn, Bronx:2
( 8 / 52 ) Italian Restaurants in Norwood, Bronx:0
( 9 / 52 ) Italian Restaurants in Williamsbridge, Bronx:0
( 10 / 52 ) Italian Restaurants in Baychester, Bronx:2
( 11 / 52 ) Italian Restaurants in Pelham Parkway, Bronx:3
( 12 / 52 ) Italian Restaurants in City Island, Bronx:3
( 13 / 52 ) Italian Restaurants in Bedford Park, Bronx:1
( 14 / 52 ) Italian Restaurants in University Heights, Bronx:0
( 15 / 52 ) Italian Restaurants in Morris Heights, Bronx:0
( 16 / 52 ) Italian Restaurants in Fordham, Bronx:10
( 17 / 52 ) Italian Restaurants in East Tremont, Bronx:0
( 18 / 52 ) Italian Restaurants in West Farms, Bronx:0
( 19 / 52 ) Italian Restaurants in High Bridge, Bronx:0
( 20 / 52 ) Italian Restaurants in Melrose, Bronx:2
( 21 / 52 ) Italian Restaurants in Mott Haven, Bronx:1
( 22 / 52 ) Italian Restaurants in Port Morris, Bronx:0
( 23 / 52 ) Italian Restaurants in Longwood, Bronx:0
( 24 / 52 ) Italian Restaurants in Hunts Point, Bronx:0
( 25 / 52 ) Italian Restaurants in Morrisania, Bronx:1
( 26 / 52 ) Italian Restaurants in Soundview, Bronx:0
( 27 / 52 ) Italian Restaurants in Clason Point, Bronx:0
( 28 / 52 ) Italian Restaurants in Throgs Neck, Bronx:6
( 29 / 52 ) Italian Restaurants in Country Club, Bronx:4
( 30 / 52 ) Italian Restaurants in Parkchester, Bronx:0
( 31 / 52 ) Italian Restaurants in Westchester Square, Bronx:2
( 32 / 52 ) Italian Restaurants in Van Nest, Bronx:2
( 33 / 52 ) Italian Restaurants in Morris Park, Bronx:5
( 34 / 52 ) Italian Restaurants in Belmont, Bronx:15
( 35 / 52 ) Italian Restaurants in Spuyten Duyvil, Bronx:1
( 36 / 52 ) Italian Restaurants in North Riverdale, Bronx:2
( 37 / 52 ) Italian Restaurants in Pelham Bay, Bronx:4
( 38 / 52 ) Italian Restaurants in Schuylerville, Bronx:3
( 39 / 52 ) Italian Restaurants in Edgewater Park, Bronx:6
( 40 / 52 ) Italian Restaurants in Castle Hill, Bronx:0
( 41 / 52 ) Italian Restaurants in Olinville, Bronx:0
( 42 / 52 ) Italian Restaurants in Pelham Gardens, Bronx:1
( 43 / 52 ) Italian Restaurants in Concourse, Bronx:1
( 44 / 52 ) Italian Restaurants in Unionport, Bronx:0
( 45 / 52 ) Italian Restaurants in Edenwald, Bronx:0
( 46 / 52 ) Italian Restaurants in Claremont Village, Bronx:0
( 47 / 52 ) Italian Restaurants in Concourse Village, Bronx:2
( 48 / 52 ) Italian Restaurants in Mount Eden, Bronx:0
( 49 / 52 ) Italian Restaurants in Mount Hope, Bronx:0
( 50 / 52 ) Italian Restaurants in Bronxdale, Bronx:5
( 51 / 52 ) Italian Restaurants in Allerton, Bronx:0
( 52 / 52 ) Italian Restaurants in Kingsbridge Heights, Bronx:0
```

In [27]:

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

    count+=1
```

```
( 1 / 70 ) Italian Restaurants in Bay Ridge, Brooklyn:6
( 2 / 70 ) Italian Restaurants in Bensonhurst, Brooklyn:4
( 3 / 70 ) Italian Restaurants in Sunset Park, Brooklyn:1
( 4 / 70 ) Italian Restaurants in Greenpoint, Brooklyn:2
( 5 / 70 ) Italian Restaurants in Gravesend, Brooklyn:1
( 6 / 70 ) Italian Restaurants in Brighton Beach, Brooklyn:0
( 7 / 70 ) Italian Restaurants in Sheepshead Bay, Brooklyn:5
( 8 / 70 ) Italian Restaurants in Manhattan Terrace, Brooklyn:0
( 9 / 70 ) Italian Restaurants in Flatbush, Brooklyn:1
( 10 / 70 ) Italian Restaurants in Crown Heights, Brooklyn:0
( 11 / 70 ) Italian Restaurants in East Flatbush, Brooklyn:0
( 12 / 70 ) Italian Restaurants in Kensington, Brooklyn:0
( 13 / 70 ) Italian Restaurants in Windsor Terrace, Brooklyn:5
( 14 / 70 ) Italian Restaurants in Prospect Heights, Brooklyn:0
( 15 / 70 ) Italian Restaurants in Brownsville, Brooklyn:0
( 16 / 70 ) Italian Restaurants in Williamsburg, Brooklyn:1
( 17 / 70 ) Italian Restaurants in Bushwick, Brooklyn:2
( 18 / 70 ) Italian Restaurants in Bedford Stuyvesant, Brooklyn:0
( 19 / 70 ) Italian Restaurants in Brooklyn Heights, Brooklyn:4
( 20 / 70 ) Italian Restaurants in Cobble Hill, Brooklyn:6
( 21 / 70 ) Italian Restaurants in Carroll Gardens, Brooklyn:7
( 22 / 70 ) Italian Restaurants in Red Hook, Brooklyn:0
( 23 / 70 ) Italian Restaurants in Gowanus, Brooklyn:4
( 24 / 70 ) Italian Restaurants in Fort Greene, Brooklyn:5
( 25 / 70 ) Italian Restaurants in Park Slope, Brooklyn:1
( 26 / 70 ) Italian Restaurants in Cypress Hills, Brooklyn:0
( 27 / 70 ) Italian Restaurants in East New York, Brooklyn:0
( 28 / 70 ) Italian Restaurants in Starrett City, Brooklyn:1
( 29 / 70 ) Italian Restaurants in Canarsie, Brooklyn:0
( 30 / 70 ) Italian Restaurants in Flatlands, Brooklyn:0
( 31 / 70 ) Italian Restaurants in Mill Island, Brooklyn:0
( 32 / 70 ) Italian Restaurants in Manhattan Beach, Brooklyn:5
( 33 / 70 ) Italian Restaurants in Coney Island, Brooklyn:1
( 34 / 70 ) Italian Restaurants in Bath Beach, Brooklyn:3
( 35 / 70 ) Italian Restaurants in Borough Park, Brooklyn:0
( 36 / 70 ) Italian Restaurants in Dyker Heights, Brooklyn:3
( 37 / 70 ) Italian Restaurants in Gerritsen Beach, Brooklyn:2
( 38 / 70 ) Italian Restaurants in Marine Park, Brooklyn:2
( 39 / 70 ) Italian Restaurants in Clinton Hill, Brooklyn:6
( 40 / 70 ) Italian Restaurants in Sea Gate, Brooklyn:0
( 41 / 70 ) Italian Restaurants in Downtown, Brooklyn:1
( 42 / 70 ) Italian Restaurants in Boerum Hill, Brooklyn:1
( 43 / 70 ) Italian Restaurants in Prospect Lefferts Gardens, Brooklyn:2
( 44 / 70 ) Italian Restaurants in Ocean Hill, Brooklyn:0
( 45 / 70 ) Italian Restaurants in City Line, Brooklyn:0
( 46 / 70 ) Italian Restaurants in Bergen Beach, Brooklyn:1
( 47 / 70 ) Italian Restaurants in Midwood, Brooklyn:0
( 48 / 70 ) Italian Restaurants in Prospect Park South, Brooklyn:1
( 49 / 70 ) Italian Restaurants in Georgetown, Brooklyn:4
( 50 / 70 ) Italian Restaurants in East Williamsburg, Brooklyn:3
( 51 / 70 ) Italian Restaurants in North Side, Brooklyn:2
( 52 / 70 ) Italian Restaurants in South Side, Brooklyn:0
( 53 / 70 ) Italian Restaurants in Ocean Parkway, Brooklyn:3
```

```
( 54 / 70 ) Italian Restaurants in Fort Hamilton, Brooklyn:5
( 55 / 70 ) Italian Restaurants in Ditmas Park, Brooklyn:1
( 56 / 70 ) Italian Restaurants in Wingate, Brooklyn:0
( 57 / 70 ) Italian Restaurants in Rugby, Brooklyn:0
( 58 / 70 ) Italian Restaurants in Remsen Village, Brooklyn:1
( 59 / 70 ) Italian Restaurants in New Lots, Brooklyn:0
( 60 / 70 ) Italian Restaurants in Paerdegat Basin, Brooklyn:0
( 61 / 70 ) Italian Restaurants in Mill Basin, Brooklyn:3
( 62 / 70 ) Italian Restaurants in Fulton Ferry, Brooklyn:2
( 63 / 70 ) Italian Restaurants in Vinegar Hill, Brooklyn:2
( 64 / 70 ) Italian Restaurants in Weeksville, Brooklyn:0
( 65 / 70 ) Italian Restaurants in Broadway Junction, Brooklyn:0
( 66 / 70 ) Italian Restaurants in Dumbo, Brooklyn:2
( 67 / 70 ) Italian Restaurants in Homecrest, Brooklyn:1
( 68 / 70 ) Italian Restaurants in Highland Park, Brooklyn:0
( 69 / 70 ) Italian Restaurants in Madison, Brooklyn:1
( 70 / 70 ) Italian Restaurants in Erasmus, Brooklyn:0
```

```

In [30]: # prepare neighborhood list that contains Italian restaurants in Manhattan
column_names=['Borough', 'Neighborhood', 'ID','Name']
italian_rest_Manhattan=pd.DataFrame(columns=column_names)
count=1
for row in new_york_data_Manhattan.values.tolist():
    Borough, Neighborhood, Latitude, Longitude=row
    venues = get_venues(Latitude,Longitude)
    italian_restaurants=venues[venues['Category']=='Italian Restaurant']
    print('(',count,'/',len(new_york_data_Manhattan),')','Italian Restaurants in '+Neighborhood+', '+E
    for restaurant_detail in italian_restaurants.values.tolist():
        id, name , category=restaurant_detail
        italian_rest_Manhattan = italian_rest_Manhattan.append({'Borough': Borough,
                                                                'Neighborhood': Neighborhood,
                                                                'ID': id,
                                                                'Name' : name
                                                                }, ignore_index=True)

    count+=1

```

(1 / 40) Italian Restaurants in Marble Hill, Manhattan:0
 (2 / 40) Italian Restaurants in Chinatown, Manhattan:0
 (3 / 40) Italian Restaurants in Washington Heights, Manhattan:1
 (4 / 40) Italian Restaurants in Inwood, Manhattan:0
 (5 / 40) Italian Restaurants in Hamilton Heights, Manhattan:2
 (6 / 40) Italian Restaurants in Manhattanville, Manhattan:4
 (7 / 40) Italian Restaurants in Central Harlem, Manhattan:1
 (8 / 40) Italian Restaurants in East Harlem, Manhattan:3
 (9 / 40) Italian Restaurants in Upper East Side, Manhattan:7
 (10 / 40) Italian Restaurants in Yorkville, Manhattan:6
 (11 / 40) Italian Restaurants in Lenox Hill, Manhattan:6
 (12 / 40) Italian Restaurants in Roosevelt Island, Manhattan:1
 (13 / 40) Italian Restaurants in Upper West Side, Manhattan:5
 (14 / 40) Italian Restaurants in Lincoln Square, Manhattan:5
 (15 / 40) Italian Restaurants in Clinton, Manhattan:4
 (16 / 40) Italian Restaurants in Midtown, Manhattan:0
 (17 / 40) Italian Restaurants in Murray Hill, Manhattan:0
 (18 / 40) Italian Restaurants in Chelsea, Manhattan:2
 (19 / 40) Italian Restaurants in Greenwich Village, Manhattan:11
 (20 / 40) Italian Restaurants in East Village, Manhattan:2
 (21 / 40) Italian Restaurants in Lower East Side, Manhattan:6
 (22 / 40) Italian Restaurants in Tribeca, Manhattan:4
 (23 / 40) Italian Restaurants in Little Italy, Manhattan:4
 (24 / 40) Italian Restaurants in Soho, Manhattan:7
 (25 / 40) Italian Restaurants in West Village, Manhattan:10
 (26 / 40) Italian Restaurants in Manhattan Valley, Manhattan:2
 (27 / 40) Italian Restaurants in Morningside Heights, Manhattan:5
 (28 / 40) Italian Restaurants in Gramercy, Manhattan:4
 (29 / 40) Italian Restaurants in Battery Park City, Manhattan:2
 (30 / 40) Italian Restaurants in Financial District, Manhattan:2
 (31 / 40) Italian Restaurants in Carnegie Hill, Manhattan:3
 (32 / 40) Italian Restaurants in Noho, Manhattan:6
 (33 / 40) Italian Restaurants in Civic Center, Manhattan:3
 (34 / 40) Italian Restaurants in Midtown South, Manhattan:2
 (35 / 40) Italian Restaurants in Sutton Place, Manhattan:5
 (36 / 40) Italian Restaurants in Turtle Bay, Manhattan:3
 (37 / 40) Italian Restaurants in Tudor City, Manhattan:1
 (38 / 40) Italian Restaurants in Stuyvesant Town, Manhattan:3
 (39 / 40) Italian Restaurants in Flatiron, Manhattan:3
 (40 / 40) Italian Restaurants in Hudson Yards, Manhattan:3

```
In [31]: # prepare neighborhood list that contains Italian restaurants in Queens
column_names=['Borough', 'Neighborhood', 'ID','Name']
italian_rest_Queens=pd.DataFrame(columns=column_names)
count=1
for row in new_york_data_Queens.values.tolist():
    Borough, Neighborhood, Latitude, Longitude=row
    venues = get_venues(Latitude,Longitude)
    italian_restaurants=venues[venues['Category']=='Italian Restaurant']
    print('(',count,'/',len(new_york_data_Queens),')','Italian Restaurants in '+Neighborhood+', '+Borough)
    for restaurant_detail in italian_restaurants.values.tolist():
        id, name , category=restaurant_detail
        italian_rest_Queens = italian_rest_Queens.append({'Borough': Borough,
                                                            'Neighborhood': Neighborhood,
                                                            'ID': id,
                                                            'Name' : name
                                                            }, ignore_index=True)

    count+=1
```

```
( 1 / 81 ) Italian Restaurants in Astoria, Queens:3
( 2 / 81 ) Italian Restaurants in Woodside, Queens:1
( 3 / 81 ) Italian Restaurants in Jackson Heights, Queens:1
( 4 / 81 ) Italian Restaurants in Elmhurst, Queens:0
( 5 / 81 ) Italian Restaurants in Howard Beach, Queens:4
( 6 / 81 ) Italian Restaurants in Corona, Queens:3
( 7 / 81 ) Italian Restaurants in Forest Hills, Queens:2
( 8 / 81 ) Italian Restaurants in Kew Gardens, Queens:1
( 9 / 81 ) Italian Restaurants in Richmond Hill, Queens:1
( 10 / 81 ) Italian Restaurants in Flushing, Queens:0
( 11 / 81 ) Italian Restaurants in Long Island City, Queens:2
( 12 / 81 ) Italian Restaurants in Sunnyside, Queens:2
( 13 / 81 ) Italian Restaurants in East Elmhurst, Queens:1
( 14 / 81 ) Italian Restaurants in Maspeth, Queens:2
( 15 / 81 ) Italian Restaurants in Ridgewood, Queens:3
( 16 / 81 ) Italian Restaurants in Glendale, Queens:1
( 17 / 81 ) Italian Restaurants in Rego Park, Queens:1
( 18 / 81 ) Italian Restaurants in Woodhaven, Queens:0
( 19 / 81 ) Italian Restaurants in Ozone Park, Queens:1
( 20 / 81 ) Italian Restaurants in South Ozone Park, Queens:1
( 21 / 81 ) Italian Restaurants in College Point, Queens:0
( 22 / 81 ) Italian Restaurants in Whitestone, Queens:5
( 23 / 81 ) Italian Restaurants in Bayside, Queens:3
( 24 / 81 ) Italian Restaurants in Auburndale, Queens:3
( 25 / 81 ) Italian Restaurants in Little Neck, Queens:6
( 26 / 81 ) Italian Restaurants in Douglaston, Queens:5
( 27 / 81 ) Italian Restaurants in Glen Oaks, Queens:1
( 28 / 81 ) Italian Restaurants in Bellerose, Queens:2
( 29 / 81 ) Italian Restaurants in Kew Gardens Hills, Queens:0
( 30 / 81 ) Italian Restaurants in Fresh Meadows, Queens:0
( 31 / 81 ) Italian Restaurants in Briarwood, Queens:0
( 32 / 81 ) Italian Restaurants in Jamaica Center, Queens:0
( 33 / 81 ) Italian Restaurants in Oakland Gardens, Queens:2
( 34 / 81 ) Italian Restaurants in Queens Village, Queens:0
( 35 / 81 ) Italian Restaurants in Hollis, Queens:0
( 36 / 81 ) Italian Restaurants in South Jamaica, Queens:0
( 37 / 81 ) Italian Restaurants in St. Albans, Queens:0
( 38 / 81 ) Italian Restaurants in Rochdale, Queens:0
( 39 / 81 ) Italian Restaurants in Springfield Gardens, Queens:0
( 40 / 81 ) Italian Restaurants in Cambria Heights, Queens:0
( 41 / 81 ) Italian Restaurants in Rosedale, Queens:0
( 42 / 81 ) Italian Restaurants in Far Rockaway, Queens:0
( 43 / 81 ) Italian Restaurants in Broad Channel, Queens:0
( 44 / 81 ) Italian Restaurants in Breezy Point, Queens:0
( 45 / 81 ) Italian Restaurants in Steinway, Queens:5
( 46 / 81 ) Italian Restaurants in Beechhurst, Queens:5
( 47 / 81 ) Italian Restaurants in Bay Terrace, Queens:1
( 48 / 81 ) Italian Restaurants in Edgemere, Queens:0
( 49 / 81 ) Italian Restaurants in Arverne, Queens:0
( 50 / 81 ) Italian Restaurants in Rockaway Beach, Queens:0
( 51 / 81 ) Italian Restaurants in Neponsit, Queens:1
( 52 / 81 ) Italian Restaurants in Murray Hill, Queens:0
( 53 / 81 ) Italian Restaurants in Floral Park, Queens:1
```

```
( 54 / 81 ) Italian Restaurants in Holliswood, Queens:0
( 55 / 81 ) Italian Restaurants in Jamaica Estates, Queens:0
( 56 / 81 ) Italian Restaurants in Queensboro Hill, Queens:0
( 57 / 81 ) Italian Restaurants in Hillcrest, Queens:1
( 58 / 81 ) Italian Restaurants in Ravenswood, Queens:5
( 59 / 81 ) Italian Restaurants in Lindenwood, Queens:2
( 60 / 81 ) Italian Restaurants in Laurelton, Queens:0
( 61 / 81 ) Italian Restaurants in Lefrak City, Queens:2
( 62 / 81 ) Italian Restaurants in Belle Harbor, Queens:1
( 63 / 81 ) Italian Restaurants in Rockaway Park, Queens:1
( 64 / 81 ) Italian Restaurants in Somerville, Queens:0
( 65 / 81 ) Italian Restaurants in Brookville, Queens:0
( 66 / 81 ) Italian Restaurants in Bellaire, Queens:2
( 67 / 81 ) Italian Restaurants in North Corona, Queens:0
( 68 / 81 ) Italian Restaurants in Forest Hills Gardens, Queens:2
( 69 / 81 ) Italian Restaurants in Jamaica Hills, Queens:0
( 70 / 81 ) Italian Restaurants in Utopia, Queens:1
( 71 / 81 ) Italian Restaurants in Pomonok, Queens:1
( 72 / 81 ) Italian Restaurants in Astoria Heights, Queens:3
( 73 / 81 ) Italian Restaurants in Hunters Point, Queens:7
( 74 / 81 ) Italian Restaurants in Sunnyside Gardens, Queens:3
( 75 / 81 ) Italian Restaurants in Blissville, Queens:0
( 76 / 81 ) Italian Restaurants in Roxbury, Queens:0
( 77 / 81 ) Italian Restaurants in Middle Village, Queens:1
( 78 / 81 ) Italian Restaurants in Malba, Queens:1
( 79 / 81 ) Italian Restaurants in Hammels, Queens:0
( 80 / 81 ) Italian Restaurants in Bayswater, Queens:0
( 81 / 81 ) Italian Restaurants in Queensbridge, Queens:3
```

In [32]:

```

# prepare neighborhood list that contains Italian restaurants in Staten Island
column_names=['Borough', 'Neighborhood', 'ID','Name']
italian_rest_Staten_Island=pd.DataFrame(columns=column_names)
count=1
for row in new_york_data_Staten_Island.values.tolist():
    Borough, Neighborhood, Latitude, Longitude=row
    venues = get_venues(Latitude,Longitude)
    italian_restaurants=venues[venues['Category']=='Italian Restaurant']
    print('(',count,'/',len(new_york_data_Staten_Island),')','Italian Restaurants in '+Neighborhood+',
    for restaurant_detail in italian_restaurants.values.tolist():
        id, name , category=restaurant_detail
        italian_rest_Staten_Island = italian_rest_Staten_Island.append({'Borough': Borough,
                                'Neighborhood': Neighborhood,
                                'ID': id,
                                'Name' : name
                                }, ignore_index=True)

    count+=1

```

```

( 1 / 63 ) Italian Restaurants in St. George, Staten Island:3
( 2 / 63 ) Italian Restaurants in New Brighton, Staten Island:3
( 3 / 63 ) Italian Restaurants in Stapleton, Staten Island:0
( 4 / 63 ) Italian Restaurants in Rosebank, Staten Island:4
( 5 / 63 ) Italian Restaurants in West Brighton, Staten Island:3
( 6 / 63 ) Italian Restaurants in Grymes Hill, Staten Island:0
( 7 / 63 ) Italian Restaurants in Todt Hill, Staten Island:0
( 8 / 63 ) Italian Restaurants in South Beach, Staten Island:0
( 9 / 63 ) Italian Restaurants in Port Richmond, Staten Island:0
( 10 / 63 ) Italian Restaurants in Mariner's Harbor, Staten Island:1
( 11 / 63 ) Italian Restaurants in Port Ivory, Staten Island:0
( 12 / 63 ) Italian Restaurants in Castleton Corners, Staten Island:2
( 13 / 63 ) Italian Restaurants in New Springville, Staten Island:0
( 14 / 63 ) Italian Restaurants in Travis, Staten Island:1
( 15 / 63 ) Italian Restaurants in New Dorp, Staten Island:5
( 16 / 63 ) Italian Restaurants in Oakwood, Staten Island:0
( 17 / 63 ) Italian Restaurants in Great Kills, Staten Island:6
( 18 / 63 ) Italian Restaurants in Eltingville, Staten Island:3
( 19 / 63 ) Italian Restaurants in Annadale, Staten Island:0
( 20 / 63 ) Italian Restaurants in Woodrow, Staten Island:1
( 21 / 63 ) Italian Restaurants in Tottenville, Staten Island:3
( 22 / 63 ) Italian Restaurants in Tompkinsville, Staten Island:3
( 23 / 63 ) Italian Restaurants in Silver Lake, Staten Island:0
( 24 / 63 ) Italian Restaurants in Sunnyside, Staten Island:0
( 25 / 63 ) Italian Restaurants in Park Hill, Staten Island:0
( 26 / 63 ) Italian Restaurants in Westerleigh, Staten Island:1
( 27 / 63 ) Italian Restaurants in Graniteville, Staten Island:0
( 28 / 63 ) Italian Restaurants in Arlington, Staten Island:0
( 29 / 63 ) Italian Restaurants in Arrochar, Staten Island:2
( 30 / 63 ) Italian Restaurants in Grasmere, Staten Island:4
( 31 / 63 ) Italian Restaurants in Old Town, Staten Island:7
( 32 / 63 ) Italian Restaurants in Dongan Hills, Staten Island:7
( 33 / 63 ) Italian Restaurants in Midland Beach, Staten Island:0
( 34 / 63 ) Italian Restaurants in Grant City, Staten Island:4
( 35 / 63 ) Italian Restaurants in New Dorp Beach, Staten Island:1
( 36 / 63 ) Italian Restaurants in Bay Terrace, Staten Island:5
( 37 / 63 ) Italian Restaurants in Huguenot, Staten Island:1
( 38 / 63 ) Italian Restaurants in Pleasant Plains, Staten Island:0
( 39 / 63 ) Italian Restaurants in Butler Manor, Staten Island:0
( 40 / 63 ) Italian Restaurants in Charleston, Staten Island:4
( 41 / 63 ) Italian Restaurants in Rossville, Staten Island:0
( 42 / 63 ) Italian Restaurants in Arden Heights, Staten Island:1
( 43 / 63 ) Italian Restaurants in Greenridge, Staten Island:1
( 44 / 63 ) Italian Restaurants in Heartland Village, Staten Island:0
( 45 / 63 ) Italian Restaurants in Chelsea, Staten Island:1
( 46 / 63 ) Italian Restaurants in Bloomfield, Staten Island:0
( 47 / 63 ) Italian Restaurants in Bulls Head, Staten Island:2
( 48 / 63 ) Italian Restaurants in Richmond Town, Staten Island:3
( 49 / 63 ) Italian Restaurants in Shore Acres, Staten Island:4
( 50 / 63 ) Italian Restaurants in Clifton, Staten Island:2
( 51 / 63 ) Italian Restaurants in Concord, Staten Island:4
( 52 / 63 ) Italian Restaurants in Emerson Hill, Staten Island:1
( 53 / 63 ) Italian Restaurants in Randall Manor, Staten Island:1

```



```
( 54 / 63 ) Italian Restaurants in Howland Hook, Staten Island:0
( 55 / 63 ) Italian Restaurants in Elm Park, Staten Island:1
( 56 / 63 ) Italian Restaurants in Manor Heights, Staten Island:0
( 57 / 63 ) Italian Restaurants in Willowbrook, Staten Island:1
( 58 / 63 ) Italian Restaurants in Sandy Ground, Staten Island:1
( 59 / 63 ) Italian Restaurants in Egbertville, Staten Island:1
( 60 / 63 ) Italian Restaurants in Prince's Bay, Staten Island:1
( 61 / 63 ) Italian Restaurants in Lighthouse Hill, Staten Island:2
( 62 / 63 ) Italian Restaurants in Richmond Valley, Staten Island:3
( 63 / 63 ) Italian Restaurants in Fox Hills, Staten Island:0
```

Compile the list of all Italian restaurants in all 5 Boroughs from the above data

```
In [33]: italian_rest_ny = italian_rest_Bronx.append(italian_rest_Brooklyn, ignore_index=True).append(italian_r
```

```
In [34]: italian_rest_ny.shape
```

```
Out[34]: (548, 4)
```

```
In [35]: italian_rest_ny['Borough'].value_counts().sort_values(ascending=False)
```

```
Out[35]: Manhattan      138
Brooklyn      114
Queens      106
Staten Island  104
Bronx        86
Name: Borough, dtype: int64
```

Plot the number of Italian Restaurants in each Borough

```
In [36]: plt.figure(figsize=(9,5), dpi = 100)
# title
plt.title('Number of Italian Restaurants for each Borough in New York City')
#On x-axis
plt.xlabel('Borough', fontsize = 15)
#On y-axis
plt.ylabel('No.of Italian Restaurants', fontsize=15)
#giving a bar plot
italian_rest_ny.groupby('Borough')['ID'].count().plot(kind='bar')
#Legend
plt.legend()
#displays the plot
plt.show()
```



```
In [37]: italian_rest_ny['Neighborhood'].value_counts().sort_values(ascending=False)
```

```
Out[37]: Belmont                15
Greenwich Village             11
West Village                  10
Fordham                      10
Carroll Gardens              7
Old Town                     7
Upper East Side              7
Dongan Hills                 7
Hunters Point                7
Soho                         7
Lenox Hill                   6
Little Neck                   6
Bay Terrace                   6
Great Kills                   6
Throgs Neck                   6
Clinton Hill                  6
Edgewater Park               6
Lower East Side              6
Noho                          6
Bay Ridge                    6
Cobble Hill                   6
Yorkville                     6
Sutton Place                  5
Beechhurst                    5
Fort Greene                   5
Morningside Heights          5
Morris Park                   5
Manhattan Beach              5
Upper West Side              5
Ravenswood                    5
Whitestone                    5
Bronxdale                     5
Douglaston                    5
Windsor Terrace              5
Sheepshead Bay               5
Lincoln Square               5
New Dorp                      5
Steinway                      5
Fort Hamilton                 5
Manhattanville                4
Little Italy                  4
Grasmere                      4
Charleston                    4
Country Club                  4
Concord                       4
Bensonhurst                   4
Grant City                    4
Brooklyn Heights             4
Rosebank                      4
Shore Acres                   4
Gowanus                       4
Georgetown                    4
Tribeca                       4
Howard Beach                  4
Clinton                       4
Gramercy                      4
Pelham Bay                    4
East Williamsburg             3
Richmond Valley               3
Eltingville                   3
Carnegie Hill                 3
Bath Beach                    3
Tottenville                   3
Queensbridge                  3
Dyker Heights                 3
Bayside                       3
Hudson Yards                  3
Ridgewood                     3
St. George                    3
Astoria Heights               3
```

Stuyvesant Town	3
Auburndale	3
Pelham Parkway	3
Mill Basin	3
Richmond Town	3
Corona	3
Astoria	3
Chelsea	3
Turtle Bay	3
Ocean Parkway	3
City Island	3
New Brighton	3
Schuylerville	3
Civic Center	3
Tompkinsville	3
Sunnyside Gardens	3
Flatiron	3
East Harlem	3
West Brighton	3
Prospect Lefferts Gardens	2
Woodlawn	2
Bulls Head	2
Manhattan Valley	2
Melrose	2
Vinegar Hill	2
Financial District	2
Bellaire	2
Lindenwood	2
Concourse Village	2
Forest Hills	2
Fulton Ferry	2
Lefrak City	2
Castleton Corners	2
East Village	2
Lighthouse Hill	2
Forest Hills Gardens	2
Clifton	2
Sunnyside	2
Greenpoint	2
Midtown South	2
North Riverdale	2
Hamilton Heights	2
Baychester	2
Arrochar	2
Oakland Gardens	2
Gerritsen Beach	2
North Side	2
Bushwick	2
Bellerose	2
Dumbo	2
Long Island City	2
Maspeth	2
Van Nest	2
Battery Park City	2
Westchester Square	2
Marine Park	2
Park Slope	1
Prince's Bay	1
Jackson Heights	1
Roosevelt Island	1
Hillcrest	1
South Ozone Park	1
Egbertville	1
Belle Harbor	1
Rockaway Park	1
Middle Village	1
Elm Park	1
Bedford Park	1
Pomonok	1
Glendale	1
Willowbrook	1
Travis	1
Concourse	1

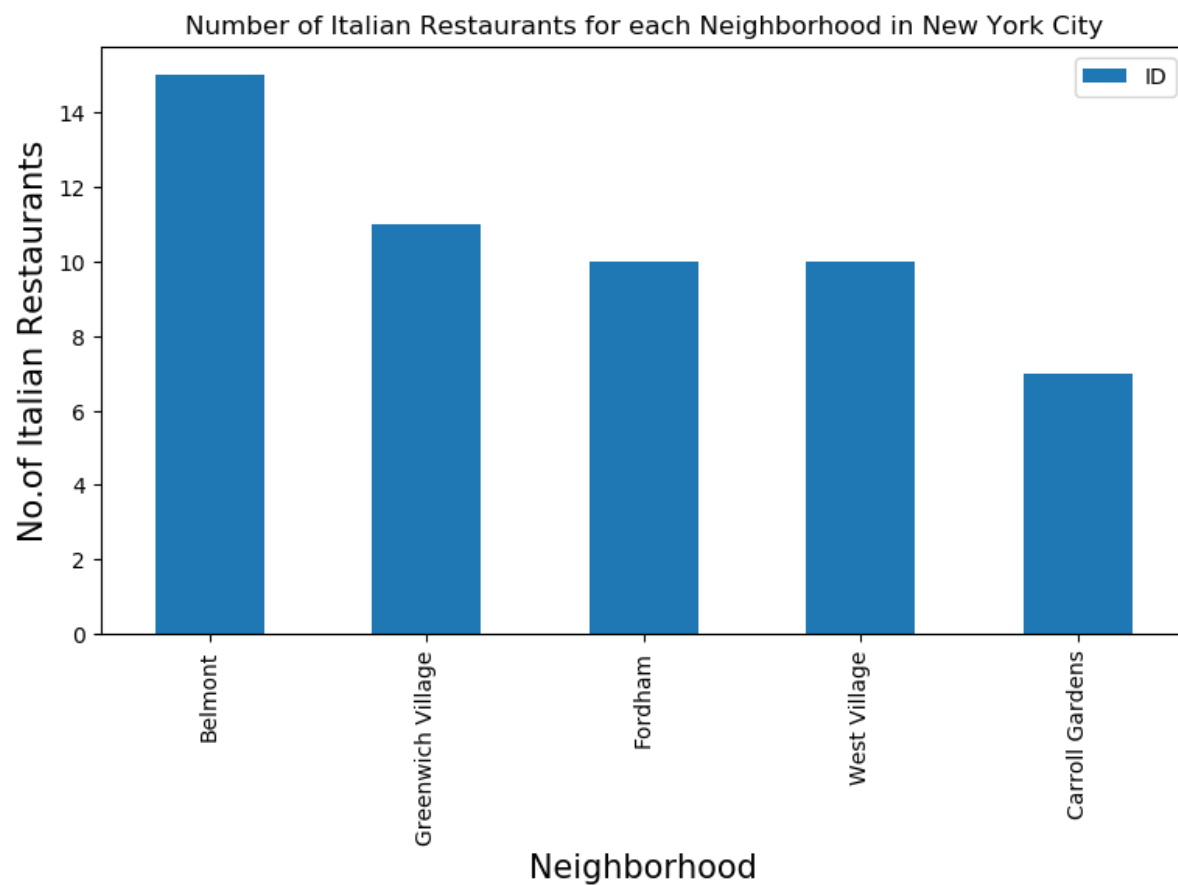
Prospect Park South	1
Mott Haven	1
Sunset Park	1
Glen Oaks	1
Kew Gardens	1
Utopia	1
Ditmas Park	1
Sandy Ground	1
Homecrest	1
Kingsbridge	1
Remsen Village	1
Ozone Park	1
Washington Heights	1
Gravesend	1
Bergen Beach	1
Morrisania	1
Central Harlem	1
Mariner's Harbor	1
Huguenot	1
Rego Park	1
Downtown	1
Arden Heights	1
Floral Park	1
Boerum Hill	1
Woodrow	1
Westerleigh	1
Flatbush	1
Madison	1
Spuyten Duyvil	1
Coney Island	1
Williamsburg	1
Starrett City	1
Pelham Gardens	1
Emerson Hill	1
Riverdale	1
New Dorp Beach	1
Tudor City	1
Malba	1
Randall Manor	1
Woodside	1
Neponsit	1
East Elmhurst	1
Greenridge	1
Richmond Hill	1

Name: Neighborhood, dtype: int64

Plot Top 5 Neighborhoods with Italian Restaurants

In [38]:

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



```
In [39]: italian_rest_ny[italian_rest_ny['Neighborhood']=='Belmont']
```

```
Out[39]:
```

	Borough	Neighborhood	ID	Name
46	Bronx	Belmont	4acf80aef964a52025d420e3	Tino's Delicatessen
47	Bronx	Belmont	4bb6470cef159c7465b275f7	Calabria Pork Store
48	Bronx	Belmont	4af0fa29f964a52060e021e3	Antonio's Trattoria
49	Bronx	Belmont	59050f51b23dfa5f6649e678	Arthur Avenue Fiasco
50	Bronx	Belmont	4aa425bef964a5208e4520e3	Dominick's Restaurant
51	Bronx	Belmont	4b5514c4f964a5207cda27e3	Enzo's
52	Bronx	Belmont	4af71916f964a520cf0522e3	Michaelangelo's Coal Fired Brick Oven Pizza Re...
53	Bronx	Belmont	4b5a4c8ff964a52049bb28e3	Emilia's Restaurant
54	Bronx	Belmont	4c9b9e7b9c663704b90463fd	Gerbasi Ristorante
55	Bronx	Belmont	4aa193d5f964a520124120e3	Mario's Restaurant & Catering
56	Bronx	Belmont	4a8e261cf964a5201c1220e3	Roberto's
57	Bronx	Belmont	4c79d294278eb713f6a05580	Cafe al Mercato
58	Bronx	Belmont	4cb0d382ef1b370419643e00	David Greco's Arthur Avenue Trattoria
59	Bronx	Belmont	4b5bc595f964a520431529e3	Pasquale Riggaletto's
60	Bronx	Belmont	53ff939c498e6b601dfa3979	San Gennaro Ristorante

Get details of Italian Restaurants in Bronx

In [40]:

```
# prepare neighborhood list that contains italian restaurants in Bronx
column_names=['Borough', 'Neighborhood', 'ID','Name','Likes','Rating','Tips']
italian_rest_stats_Bronx=pd.DataFrame(columns=column_names)
count=1

for row in italian_rest_Bronx.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(italian_rest_Bronx),')',',', 'processed')
    italian_rest_stats_Bronx = italian_rest_stats_Bronx.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	55aaee4d498e3cbb70e625d6	Bella Notte Pizzeria	9	7.1	4
(1 / 86) processed					
0	55aaee4d498e3cbb70e625d6	Bella Notte Pizzeria	9	7.1	4
(2 / 86) processed					
0	511edb6de4b0d58346fd272d	Patrizia's Of Woodlawn	18	8.4	14
(3 / 86) processed					
0	4d3cb3026b3d236a066a6364	Rivers Edge	10	6.7	8
(4 / 86) processed					
0	4c9518076b35a143d5dc21dc	Fratelli's	22	8.6	6
(5 / 86) processed					
0	5411894d498e4a254a11a46c	Olive Garden	26	7.4	8
(6 / 86) processed					
0	4bf96ae65317a593d837017f	Enzo's	26	8.6	11
(7 / 86) processed					
0	4b10591af964a5205f6e23e3	Patricia's	84	8.5	39
(8 / 86) processed					
0	4b47f069f964a5208c4426e3	Pasta Pasta	9	6.3	8
(9 / 86) processed					
0	4514ed4df964a520e5391fe3	Artie's Steak and Seafood	44	8.2	27
(10 / 86) processed					
0	55905336498e1a9217de2a7a	Scavello's On The Island	13	8.5	2
(11 / 86) processed					
0	4b80a1c3f964a520488230e3	Portofino Restaurant	10	6.1	10
(12 / 86) processed					
0	4b1712a8f964a520dbc123e3	Jolly Tinker	19	7.1	4
(13 / 86) processed					
0	4acf80aef964a52025d420e3	Tino's Delicatessen	145	9.3	48
(14 / 86) processed					
0	4bb6470cef159c7465b275f7	Calabria Pork Store	30	8.9	13


```

( 15 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4aa425bef964a5208e4520e3  Dominick's Restaurant    101    8.4    37
( 16 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  59050f51b23dfa5f6649e678  Arthur Avenue Fiasco     10    8.2     4
( 17 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4b5514c4f964a5207cda27e3  Enzo's         43    8.2    19
( 18 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4b5a4c8ff964a52049bb28e3  Emilia's Restaurant     32    8.1    16
( 19 / 86 ) processed
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0  4af71916f964a520cf0522e3

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0  Michaelangelo's Coal Fired Brick Oven Pizza Re...    39    7.8    25
( 20 / 86 ) processed
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0  4c9b9e7b9c663704b90463fd  Gerbasi Ristorante     15    7.7    12
( 21 / 86 ) processed
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0  53ff939c498e6b601dfa3979  San Gennaro Ristorante    17    7.1     1
( 22 / 86 ) processed
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0  4bc67f1104e8b713a833362d

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0  Ann & Tony's - An Original Arthur Avenue Resta...    12    7.1     8
( 23 / 86 ) processed
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0  5956be26123a195de6701c2b  Porto Salvo     10    8.4     5
( 24 / 86 ) processed
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0  4bb692672ea19521a6ecab2f  Venice Restaurant & Pizzeria     8    6.8     9
( 25 / 86 ) processed
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0  4e6acfb1ae60950955a9b02b  Wish 37         3    6.6     6
( 26 / 86 ) processed
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0  5956be26123a195de6701c2b  Porto Salvo     10    8.4     5
( 27 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4b4e3e87f964a5209de626e3  Patricia's of Tremont    48    8.2    29
( 28 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4b958fccf964a52091a934e3  Ice House Cafe     11    7.4    14
( 29 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4d4456d93616b60c953fe3c2  Tosca Marquee     20    6.8    14
( 30 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4c1d717b8b3aa59363a99a5f  Spoto's Italian Restaurant     6    6.6    11
( 31 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4b6cb1c0f964a520d04c2ce3  Mamma Lucia's Pizza & Pasta     3    6.6    10
( 32 / 86 ) processed
      ID              Name  Likes  Rating  Tips
0  4b491198f964a5208f6426e3  Rino's Italian Restaurant     6    6.6     1
( 33 / 86 ) processed
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0  4c9e1ef2542b224b70a3f09f  Lucca Italian Restaurant     7    7.7     4
( 34 / 86 ) processed
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0  4b85b6b3f964a5209b6e31e3  Giovanni's Italian Restaurant    11    7.5

Tips
0  10
( 35 / 86 ) processed
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0  4b634812f964a520936f2ae3  Vito's Deli        6    6.8     5
( 36 / 86 ) processed

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Index: []

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(38 / 86) processed

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0	4bd1d5fdcaff95211c6ed1f0	900 Park Restaurant	57	7.3	19

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0	4b10591af964a5205f6e23e3	Patricia's	84	8.5	39

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	ID	Name	Likes	Rating	Tips
0	4bf96ae65317a593d837017f	Enzo's	26	8.6	11

(43 / 86) processed

	ID	Name	Likes	Rating	Tips
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(45 / 86) processed

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0	4acf80aef964a52025d420e3	Tino's Delicatessen	145	9.3	48

(47 / 86) processed

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0	4bb6470cef159c7465b275f7	Calabria Pork Store	30	8.9	13

(48 / 86) processed

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0	4af0fa29f964a52060e021e3	Antonio's Trattoria	117	8.9	44

(49 / 86) processed

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0	59050f51b23dfa5f6649e678	Arthur Avenue Fiasco	10	8.2	4

(50 / 86) processed

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(52 / 86) processed

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	ID	Name	Likes	Rating	Tips
0		Michaelangelo's Coal Fired Brick Oven Pizza Re...	39	7.8	25

(53 / 86) processed

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Tips

0 26

(56 / 86) processed

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(57 / 86) processed

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0  4cb0d382ef1b370419643e00 David Greco's Arthur Avenue Trattoria      6

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( 63 / 86 ) processed

                                ID          Name Likes Rating Tips
0  4b451a29f964a520ad0426e3 Beccofino      28    7.8    18
( 64 / 86 ) processed

                                ID          Name Likes Rating \
0  4b85b6b3f964a5209b6e31e3 Giovanni's Italian Restaurant      11    7.5

    Tips
0    10
( 65 / 86 ) processed

                                ID          Name Likes Rating Tips
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                                ID          Name Likes Rating Tips
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                                ID          Name Likes Rating Tips
0  4b634812f964a520936f2ae3 Vito's Deli      6    6.8    5
( 68 / 86 ) processed

                                ID          Name Likes Rating Tips
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( 69 / 86 ) processed

                                ID          Name Likes Rating Tips
0  4b491198f964a5208f6426e3 Rino's Italian Restaurant      6    6.6    1
( 70 / 86 ) processed

                                ID          Name Likes Rating Tips
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( 71 / 86 ) processed

                                ID          Name Likes Rating Tips
0  4b4e3e87f964a5209de626e3 Patricia's of Tremont      48    8.2    29
( 72 / 86 ) processed

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( 73 / 86 ) processed

                                ID          Name Likes Rating Tips
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( 74 / 86 ) processed

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( 76 / 86 ) processed

                                ID          Name Likes Rating Tips
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( 77 / 86 ) processed

                                ID          Name Likes Rating Tips
0  4c9518076b35a143d5dc21dc Fratelli's      22    8.6    6
( 78 / 86 ) processed

                                ID          Name Likes Rating Tips
0  4bfd8d06f61dc9b669309fde Tiny's Pizza & Pasta      6    7.1    4
( 79 / 86 ) processed

                                ID          Name Likes Rating Tips

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0 5956be26123a195de6701c2b Porto Salvo      10      8.4      5
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0 4bfd8d06f61dc9b669309fde Tiny's Pizza & Pasta      6      7.1      4
( 81 / 86 ) processed
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0 3fd66200f964a5207bf11ee3 F & J Pine Tavern      176      8.7      72
( 82 / 86 ) processed
      ID      Name  Likes  Rating  Tips
0 4bf96ae65317a593d837017f Enzo's      26      8.6      11
( 83 / 86 ) processed
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0 4b10591af964a5205f6e23e3 Patricia's      84      8.5      39
( 84 / 86 ) processed
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0 4bd1d5fdcaff95211c6ed1f0 900 Park Restaurant      57      7.3      19
( 85 / 86 ) processed
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0 4b47f069f964a5208c4426e3 Pasta Pasta      9      6.3      8
( 86 / 86 ) processed

```

Get details of Italian Restaurants in Brooklyn

In [43]:

```
# prepare neighborhood list that contains italian restaurants in Brooklyn
column_names=['Borough', 'Neighborhood', 'ID','Name','Likes','Rating','Tips']
italian_rest_stats_Brooklyn=pd.DataFrame(columns=column_names)
count=1

for row in italian_rest_Brooklyn.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(italian_rest_Brooklyn),')','processed')
    italian_rest_stats_Brooklyn = italian_rest_stats_Brooklyn.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	4b70d8dff964a52063312de3	Tuscany Grill	15	7.9	7
(1 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	3fd66200f964a5205fee1ee3	Ponte Vecchio Restaurant	39	7.8	17
(2 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4ad62c95f964a5208d0521e3	Zio Toto	16	7.2	34
(3 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4bd075f2cafff952145d3cef0	Gino's Restaurant	139	8.4	57
(4 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4a7e205ef964a52012f11fe3	Sofia Restorante Italiano	15	7.0	10
(5 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4e732dff45dd41e9ccce1987	Giacomo's Wood Fired Pizza & Trattoria	23		
(6 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4e30a139483bb3fdc436a7e3	Villa Fiorita	3	8.0	4
(7 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4ae23a80f964a5200c8c21e3	il Colosseo	30	7.6	22
(8 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4e073239cc3f1ed1312dce37	Panino Rustico	45	8.7	18
(9 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	4c0791492e80a593eabf75f9	Papa Pasquale	12	8.2	5
(10 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	5095a98ae4b0038a605e6f45	Cafe Lore	7	7.3	6
(11 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	5424b085498ec9a9c4db44b70	Naked Dog	127	8.8	22
(12 / 114) processed					
	ID	Name	Likes	Rating	Tips
0	5c6dde8de3bbf002c44d83c	Forma Pasta Factory	38	9.2	12
(13 / 114) processed					
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0	4ad8c329f964a520731421e3	Joe's of Avenue U	35	7.9	27

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( 18 / 114 ) processed
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( 28 / 114 ) processed
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( 29 / 114 ) processed
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0 521a7e8a498e9a3defc15591 Casa Edesia Pizza and Grill      7      6.9      5
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0 3fd66200f964a5205fee1ee3 Ponte Vecchio Restaurant      39      7.8      17
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      Tips
0      9
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0 572d1d41498e2483c3bed970 Da Ciro Brooklyn          15      8.0      7
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( 75 / 114 ) processed
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( 76 / 114 ) processed
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0 4c2d1eb17d85a593fa1452f3 Dino          228      8.4      96
( 77 / 114 ) processed
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0 4fbabf08e4b0ffe177a56434 Aita          292      8.9      76
( 78 / 114 ) processed
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0 4d9f5a9efc4f721e7e5a9d5f Rucola          872      9.1      233
( 79 / 114 ) processed
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0 4d9f5a9efc4f721e7e5a9d5f Rucola          872      9.1      233
( 80 / 114 ) processed
      ID                               Name Likes Rating Tips
0 59bfcdfb2079551e2b628d20 Camillo          54      8.4      12
( 81 / 114 ) processed
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0 4b905bbcf964a5200f8633e3 Gino's Brick Oven Pizza and Trattoria      32

      Rating Tips
0      7.3      29
( 82 / 114 ) processed
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0 4b467ca0f964a5206d2226e3 Il Posto          14      7.5      4
( 83 / 114 ) processed
      ID Name Likes Rating Tips

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0 52b90597498ed57b85609429 Lea 116 8.2 33
( 84 / 114 ) processed
      ID      Name Likes Rating Tips
0 4c267153b012b71350e30893 Landi's Pork Store 32 8.5 11
( 85 / 114 ) processed
      ID      Name Likes Rating Tips
0 4b467ca0f964a5206d2226e3 Il Posto 14 7.5 4
( 86 / 114 ) processed
      ID      Name Likes Rating Tips
0 4c2bbd1b2219c9288312a548 Pastosa Ravioli 6 7.2 1
( 87 / 114 ) processed
      ID      Name Likes Rating Tips
0 5698109e498eb4e676c57b75 Dolce Vita 6 6.2 2
( 88 / 114 ) processed
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0 58eac71c0319b80a65d5045b Ammazza Caffè 71 9.1 14
( 89 / 114 ) processed
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0 4ffa2f57e4b05ae525579d36 Testo 132 8.6 40
( 90 / 114 ) processed
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0 4a358dfaf964a5202d9d1fe3 Il Passatore 183 8.3 65
( 91 / 114 ) processed
      ID      Name Likes Rating Tips
0 4dcabca41f6e2812677e3598 The Meatball Shop 1337 8.8 374
( 92 / 114 ) processed
      ID      Name Likes Rating Tips
0 4106ec80f964a520890b1fe3 Aurora 447 8.9 118
( 93 / 114 ) processed
      ID      Name Likes Rating Tips
0 4c0b017aa1b32d7f1d6d9af0 La Palina 34 8.6 18
( 94 / 114 ) processed
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0 4c8455bfe602b1f7a28cae7a Cafe Renaissance 4 5.9 6
( 95 / 114 ) processed
Empty DataFrame
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Index: []
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( 96 / 114 ) processed
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0 525c26bc11d277827d14468f Campania Coal Fired Pizza 75 8.8 19
( 97 / 114 ) processed
      ID      Name Likes Rating Tips
0 55ff210c498ef9c10335dc0b Positano 39 8.0 10
( 98 / 114 ) processed
      ID      Name Likes Rating Tips
0 3fd66200f964a5205fee1ee3 Ponte Vecchio Restaurant 39 7.8 17
( 99 / 114 ) processed
      ID      Name Likes Rating Tips
0 4b70d8dff964a52063312de3 Tuscany Grill 15 7.9 7
( 100 / 114 ) processed
      ID      Name Likes Rating Tips
0 5524916d498ee874044a6feb Grotto 11 7.0 5
( 101 / 114 ) processed
      ID Name Likes Rating Tips
0 52b90597498ed57b85609429 Lea 116 8.2 33
( 102 / 114 ) processed
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( 103 / 114 ) processed
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( 104 / 114 ) processed
      ID      Name Likes Rating Tips
0 4c2bbd1b2219c9288312a548 Pastosa Ravioli 6 7.2 1
( 105 / 114 ) processed
      ID      Name Likes Rating Tips
0 5698109e498eb4e676c57b75 Dolce Vita 6 6.2 2
( 106 / 114 ) processed
      ID      Name Likes Rating Tips

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0 593c0d2262420b7feccc3048 Cecconi's 333 8.7 72
( 107 / 114 ) processed
      ID      Name  Likes  Rating  Tips
0 3fd66200f964a520ece81ee3 Noodle Pudding 223 8.3 86
( 108 / 114 ) processed
      ID      Name  Likes  Rating  Tips
0 593c0d2262420b7feccc3048 Cecconi's 333 8.7 72
( 109 / 114 ) processed
      ID      Name  Likes  Rating  Tips
0 3fd66200f964a520ece81ee3 Noodle Pudding 223 8.3 86
( 110 / 114 ) processed
      ID      Name  Likes  Rating  Tips
0 593c0d2262420b7feccc3048 Cecconi's 333 8.7 72
( 111 / 114 ) processed
      ID      Name  Likes  Rating  Tips
0 3fd66200f964a520ece81ee3 Noodle Pudding 223 8.3 86
( 112 / 114 ) processed
      ID      Name  Likes  Rating  Tips
0 4c8455bfe602b1f7a28cae7a Cafe Renaissance 4 5.9 6
( 113 / 114 ) processed
      ID      Name  Likes  Rating  Tips
0 42508380f964a520c1201fe3 Michael's 57 8.1 11
( 114 / 114 ) processed

```

Get details of Italian Restaurants in Manhattan

In [44]:

```
# prepare neighborhood list that contains italian restaurants in Manhattan
column_names=['Borough', 'Neighborhood', 'ID','Name','Likes','Rating','Tips']
italian_rest_stats_Manhattan=pd.DataFrame(columns=column_names)
count=1

for row in italian_rest_Manhattan.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(italian_rest_Manhattan),')','processed')
    italian_rest_stats_Manhattan = italian_rest_stats_Manhattan.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	4d21107c6e8c37042b58ff9f	Saggio Restaurant	119	8.7	62
(1 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	56d8e01d498ef1500ae7fbfe	Fumo	102	9.0	22
(2 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	558c6d42498eab8b9ee8da37	Bono Trattoria	101	8.7	19
(3 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	457f1183f964a5204b3f1fe3	Pisticci Ristorante	403	9.1	146
(4 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	4c956003f7cfa1cd2e2ebd15	Bettolona	91	8.0	40
(5 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	56d8e01d498ef1500ae7fbfe	Fumo	102	9.0	22
(6 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	3fd66200f964a52006e91ee3	Max SoHa	112	7.8	60
(7 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	56d8e01d498ef1500ae7fbfe	Fumo	102	9.0	22
(8 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	3fd66200f964a5207de81ee3	Rao's	78	8.7	33
(9 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	51800134e4b03b4e898c8f16	Armonie	15	8.5	10
(10 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	53effc79498eddd22101127d	Nocciola Ristorante	25	7.7	9
(11 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	4a22d7f9f964a520977d1fe3	Sant Ambroeus	317	8.7	87
(12 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	4a6133a6f964a52015c21fe3	Caffe Buon Gusto - Manhattan	109	8.9	38
(13 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	4ab972d6f964a520697f20e3	Parma Restaurant	15	8.1	14
(14 / 138) processed					
	ID	Name	Likes	Rating	Tips
0	42699000f964a52049211fe3	Uva	802	9.1	231
(15 / 138) processed					

ID	Name	Likes	Rating	Tips
0 562c1df4498e2c64fb4a9faa	San Matteo Pizzeria e Cucina	105	8.7	25
(16 / 138) processed				
ID	Name	Likes	Rating	Tips
0 56bce4c5498ef768f74f4e6c	Come Prima Ristorante	15	8.6	4
(17 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4b23ee1ef964a520255d24e3	Caffe Grazie	68	8.1	26
(18 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4e4078922271a89dd083d07e	Felice 83	152	8.7	39
(19 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4b623700f964a520a83c2ae3	Nica Trattoria	29	8.4	19
(20 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4b651459f964a52030e32ae3	Italianissimo Ristorante	31	8.7	14
(21 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4b981d9af964a520802d35e3	Elio's	120	9.1	49
(22 / 138) processed				
ID	Name	Likes	Rating	Tips
0 504bb0fae4b0d1cf33ca07d0	83 1/2	43	8.3	22
(23 / 138) processed				
ID	Name	Likes	Rating	Tips
0 562c1df4498e2c64fb4a9faa	San Matteo Pizzeria e Cucina	105	8.7	25
(24 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4b775e32f964a520a6952ee3	Campagnola Restaurant	32	8.1	37
(25 / 138) processed				
ID	Name	Likes	Rating	Tips
0 42699000f964a52049211fe3	Uva	802	9.1	231
(26 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4a6133a6f964a52015c21fe3	Caffe Buon Gusto - Manhattan	109	8.9	38
(27 / 138) processed				
ID	Name	Likes	Rating	Tips
0 51c9e3f9498e2cb9c31d19ff	The Meatball Shop	656	8.4	178
(28 / 138) processed				
ID	Name	Likes	Rating	Tips
0 3fd66200f964a52075e91ee3	Bella Blu	62	8.0	24
(29 / 138) processed				
ID	Name	Likes	Rating	Tips
0 56bce4c5498ef768f74f4e6c	Come Prima Ristorante	15	8.6	4
(30 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4b775e32f964a520a6952ee3	Campagnola Restaurant	32	8.1	37
(31 / 138) processed				
ID	Name	Likes	Rating	Tips
0 42489a80f964a5208a201fe3	Celeste	240	8.5	127
(32 / 138) processed				
ID	Name	Likes	Rating	Tips
0 56afed04498e39e35747adf2	Pizzeria Sirenetta	154	8.8	35
(33 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4d68839467a8f04df7ee01be	Osteria Cotta	435	8.6	170
(34 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4a7778a1f964a5209be41fe3	Carmines Italian Restaurant	389	8.2	130
(35 / 138) processed				
ID	Name	Likes	Rating	Tips
0 5282b4bf11d2b180cc775713	Cibo E Vino	80	7.8	12
(36 / 138) processed				
ID	Name	Likes	Rating	Tips
0 459395b7f964a52047401fe3	Cafe Fiorello	252	8.2	140
(37 / 138) processed				
ID	Name	Likes	Rating	Tips
0 4b69b408f964a520c5ae2be3	Noi Due	39	8.0	26
(38 / 138) processed				
ID	Name	Likes	Rating	Tips
0 548a64ae498e972164140a84	Parm	371	8.6	73
(39 / 138) processed				

ID	Name	Likes	Rating	Tips
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0 54961b98498eccc96c4a93d7 Masseria dei Vini 108 8.5 29
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0 4ee6366b77c8e89319c7e4b8 Joanne Trattoria 132 7.7 64
( 41 / 138 ) processed
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0 5633bec0498e430fc8ba8f3c La Vela Dining & Bar 23 8.2 6
( 42 / 138 ) processed
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0 4dcae1b18877502200c95822 Sergimmo Salumeria 328 8.8 129
( 43 / 138 ) processed
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0 506e48ffe4b078ebe1c30a29 Bocca Di Bacco 107 8.1 38
( 44 / 138 ) processed
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0 49d5651df964a520915c1fe3 Nizza 196 8.0 118
( 45 / 138 ) processed
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0 511d6006e4b0a486ec088c89 The Meatball Shop 1003 8.8 192
( 46 / 138 ) processed
ID Name Likes Rating Tips
0 4533d338f964a5208f3b1fe3 Del Posto 655 8.6 281
( 47 / 138 ) processed
ID Name Likes Rating Tips
0 504b2a9ee4b006c435a465d3 Carbone 704 9.2 233
( 48 / 138 ) processed
ID Name Likes Rating \
0 5ab53749446ea6289e41b0e6 Coco Pazzo Kitchen & Restaurant 57 8.9

Tips
0 11
( 49 / 138 ) processed
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0 556f4ef2498ee60139b28c72 Dante NYC 494 9.2 134
( 50 / 138 ) processed
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0 56d92e05498e6c54b6325b19 San Carlo Osteria Piemonte 104 9.1 41
( 51 / 138 ) processed
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0 51278a09e4b0b624edbc914c Charlie Bird 731 8.8 186
( 52 / 138 ) processed
ID Name Likes Rating Tips
0 543075b3498e283e38ad9dec Cotenna 883 9.0 233
( 53 / 138 ) processed
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0 3fd66200f964a5202de71ee3 Palma 483 8.9 127
( 54 / 138 ) processed
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0 4cc6222106c25481d7a4a047 Rubirosa Ristorante 2491 9.2 825
( 55 / 138 ) processed
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0 4d9f8d97a428a1cdd92acb04 Parm 1129 8.8 494
( 56 / 138 ) processed
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0 534c7a27498efe3d035cbbe9 Baker & Co. 399 8.8 98
( 57 / 138 ) processed
ID Name Likes Rating Tips
0 54459a46498ecf8ec204cc61 Vic's 467 8.9 108
( 58 / 138 ) processed
ID Name Likes Rating Tips
0 40f1d480f964a520680a1fe3 Hearth 582 8.7 208
( 59 / 138 ) processed
ID Name Likes Rating Tips
0 4575b847f964a520a13e1fe3 Lavagna 143 8.6 76
( 60 / 138 ) processed
ID Name Likes Rating Tips
0 56cf3493cd106ae44d0c76a8 Speedy Romeo LES 302 8.8 81
( 61 / 138 ) processed
ID Name Likes Rating Tips
0 4d49d00ef53c8cfa78561c47 Gaia Italian Cafe 266 9.1 132
( 62 / 138 ) processed
ID Name Likes Rating Tips
0 42893400f964a5206c231fe3 Il Posto Accanto 118 8.8 50

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( 63 / 138 ) processed
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0  3fd66200f964a5209de41ee3  Supper    776    8.6   281
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0  4575b847f964a520a13e1fe3  Lavagna   143    8.6    76
( 65 / 138 ) processed
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0  5070d27ae4b0513ffd4ddfe7  Trapizzino    81    8.5    17
( 66 / 138 ) processed
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0  4a149749f964a52055781fe3  Locanda Verde  1438    8.8   502
( 67 / 138 ) processed
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0  4ad68c35f964a520c20721e3  Pepolino    164    8.8   114
( 68 / 138 ) processed
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0  437bc800f964a520a52a1fe3  Scalini Fedeli    61    8.6    28
( 69 / 138 ) processed
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0  54ab15df498ee7d7723bca15  Adoro Lei    107    8.3    20
( 70 / 138 ) processed
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0  4c7d4f1b8da18cfa1afc9ece  Osteria Morini   747    8.7   292
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0  4cc6222106c25481d7a4a047  Rubirosa Ristorante  2491    9.2   825
( 72 / 138 ) processed
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0  49e4f405f964a52078631fe3  Emporio    510    8.9   217
( 73 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  4d9f8d97a428a1cdd92acb04  Parm   1129    8.8   494
( 74 / 138 ) processed
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0  56d92e05498e6c54b6325b19  San Carlo Osteria Piemonte   104    9.1    41
( 75 / 138 ) processed
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0  4cc6222106c25481d7a4a047  Rubirosa Ristorante  2491    9.2   825
( 76 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  4ad68c35f964a520c20721e3  Pepolino    164    8.8   114
( 77 / 138 ) processed
      ID      Name  Likes  Rating  \
0  5ab53749446ea6289e41b0e6  Coco Pazzo Kitchen & Restaurant    57    8.9

Tips
0  11
( 78 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  4d9f8d97a428a1cdd92acb04  Parm   1129    8.8   494
( 79 / 138 ) processed
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0  49e4f405f964a52078631fe3  Emporio    510    8.9   217
( 80 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  504b2a9ee4b006c435a465d3  Carbone    704    9.2   233
( 81 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  4a27289cf964a52062911fe3  L'Artusi   1168    9.3   368
( 82 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  49bd2326f964a5204d541fe3  I Sodi    253    9.0    95
( 83 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  5c27b46a67a9fe002ce6b3ca  Fiaschetteria Pistoia    33    8.7    10
( 84 / 138 ) processed
      ID      Name  Likes  Rating  Tips
0  543c7c63498e0a3393da47a2  Via Carota    607    9.2   155
( 85 / 138 ) processed
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0  4a552b26f964a520c4b31fe3  Malatesta Trattoria   440    8.7   199
( 86 / 138 ) processed

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                                ID                               Name Likes Rating Tips
0  449e952ef964a520bc341fe3 Sant Ambroeus West Village    217    8.6    71
( 87 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4d327cc72e56236a18991db4 Malaparte          270    8.9    78
( 88 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  534c7a27498efe3d035cbbe9 Baker & Co.        399    8.8    98
( 89 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  3fd66200f964a5202de71ee3 Palma           483    8.9   127
( 90 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4eb5e354b8f786e2756cb884 The Meatball Shop 1072    9.0   277
( 91 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  5962a53dc824ae6362e9e625 Osteria 106        38    8.4    9
( 92 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  5c5b43f18194fc002c18f606 Fumo            13    8.6    5
( 93 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  5c5b43f18194fc002c18f606 Fumo            13    8.6    5
( 94 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  457f1183f964a5204b3f1fe3 Pisticci Ristorante 403    9.1   146
( 95 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4d573d8aa747b60cc83b332b Lido Harlem      339    8.6   134
( 96 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  3fd66200f964a52006e91ee3 Max SoHa         112    7.8    60
( 97 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4c956003f7cfa1cd2e2ebd15 Bettolona        91    8.0    40
( 98 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4afb2990f964a520a91b22e3 Maialino       1453    8.8   464
( 99 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4b741ab4f964a5202cc82de3 Novità Cucina Creativa 110    8.7    38
( 100 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  57c772d1498e6cb2f6531cdf Follia          110    8.4    20
( 101 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  5cc3adaa838e59002cb4629d Rezdóra         70    8.4    19
( 102 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  556cb8c6498e751e51fbcf41 Parm            246    8.0    73
( 103 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4b4f88adf964a5204c0a27e3 Gigino at Wagner Park 119    8.5    61
( 104 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4bb54fe02f70c9b6c6188430 Giardino D'oro    35    8.2    18
( 105 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4a4560a7f964a5201aa81fe3 Harry's Italian Pizza Bar 317    7.8   141
( 106 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4aad53a2f964a520b75f20e3 Lex Restaurant    17    8.5    11
( 107 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4bb4d86886a8d13a83f8de7f Sfogliata       90    8.1    54
( 108 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  4b981d9af964a520802d35e3 Elio's          120    9.1    49
( 109 / 138 ) processed

                                ID                               Name Likes Rating Tips
0  3fd66200f964a520d0e41ee3 Lil' Frankie's  892    8.8   258
( 110 / 138 ) processed

                                ID                               Name Likes Rating Tips

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0 4d49d00ef53c8cfa78561c47 Gaia Italian Cafe 266 9.1 132
( 111 / 138 ) processed
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0 42893400f964a5206c231fe3 Il Posto Accanto 118 8.8 50
( 112 / 138 ) processed
ID Name Likes Rating Tips
0 3fd66200f964a5204de41ee3 Frank Restaurant 422 8.9 162
( 113 / 138 ) processed
ID Name Likes Rating Tips
0 3fd66200f964a5201ce61ee3 Il Buco 540 8.9 146
( 114 / 138 ) processed
ID Name Likes Rating Tips
0 56cf3493cd106ae44d0c76a8 Speedy Romeo LES 302 8.8 81
( 115 / 138 ) processed
ID Name Likes Rating Tips
0 437bc800f964a520a52a1fe3 Scalini Fedeli 61 8.6 28
( 116 / 138 ) processed
ID Name Likes Rating Tips
0 4ad68c35f964a520c20721e3 Pepolino 164 8.8 114
( 117 / 138 ) processed
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0 4a149749f964a52055781fe3 Locanda Verde 1438 8.8 502
( 118 / 138 ) processed
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0 55e63b89498e3ed62f75cff3 L'Amico 390 8.4 77
( 119 / 138 ) processed
ID Name Likes Rating Tips
0 55a03533498ec7e74011d0af La Pecora Bianca 432 8.5 77
( 120 / 138 ) processed
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0 4b566000f964a520c00d28e3 Felidia 184 8.8 50
( 121 / 138 ) processed
ID Name Likes Rating Tips
0 4af610e2f964a520bf0022e3 Scalinatella 104 8.6 32
( 122 / 138 ) processed
ID Name Likes Rating Tips
0 54b1c94a498e09d5326f68fe amata 30 8.6 9
( 123 / 138 ) processed
ID Name Likes Rating Tips
0 4a8f1d7ef964a520041420e3 Isle of Capri 45 8.2 30
( 124 / 138 ) processed
ID Name Likes Rating Tips
0 4f90a618e4b0ead1972c3da6 Tony's Di Napoli 251 8.3 64
( 125 / 138 ) processed
ID Name Likes Rating Tips
0 59dfff99419a9e7fcc5b5fa2 La Pecora Bianca 94 8.2 15
( 126 / 138 ) processed
ID Name Likes Rating Tips
0 5b1db44d0d8a0f002c17fd87 Angeletto 9 7.7 1
( 127 / 138 ) processed
ID Name Likes Rating Tips
0 4b2042fff964a5208f2f24e3 Pietro's 40 8.1 19
( 128 / 138 ) processed
ID Name Likes Rating Tips
0 4b2042fff964a5208f2f24e3 Pietro's 40 8.1 19
( 129 / 138 ) processed
ID Name Likes Rating Tips
0 589a66b251666a5ffadde9ea Fiaschetteria Pistoia 81 8.4 20
( 130 / 138 ) processed
ID Name Likes Rating Tips
0 40f1d480f964a520680a1fe3 Hearth 582 8.7 208
( 131 / 138 ) processed
ID Name Likes Rating Tips
0 49c6a988f964a5206e571fe3 Gnocco 199 8.1 93
( 132 / 138 ) processed
ID Name Likes Rating Tips
0 4b741ab4f964a5202cc82de3 Novità Cucina Creativa 110 8.7 38
( 133 / 138 ) processed
ID Name Likes Rating Tips
0 4a8c84daf964a520530e20e3 da Umberto 88 9.0 38
( 134 / 138 ) processed
ID Name Likes Rating Tips
0 4afb2990f964a520a91b22e3 Maialino 1453 8.8 464

```


(135 / 138) processed

	ID	Name	Likes	Rating	Tips
0	4dcae1b18877502200c95822	Sergimmo Salumeria	328	8.8	129

(136 / 138) processed

	ID	Name	Likes	Rating	Tips
0	5633bec0498e430fc8ba8f3c	La Vela Dining & Bar	23	8.2	6

(137 / 138) processed

	ID	Name	Likes	Rating	Tips
0	4d0122e21ebe6dc3d918b91	Casa Nonna	201	8.0	79

(138 / 138) processed

Get details of Italian Restaurants in Queens

In [79]:

```
# prepare neighborhood list that contains italian restaurants in Queens
column_names=['Borough', 'Neighborhood', 'ID','Name','Likes','Rating','Tips']
italian_rest_stats_Queens=pd.DataFrame(columns=column_names)
count=1

for row in italian_rest_Queens.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(italian_rest_Queens),')','processed')
    italian_rest_stats_Queens = italian_rest_stats_Queens.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	5010b169e4b05edd9983ec7d	Antika Restaurant & Pizzeria	72	8.2	31
(1 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4ebf0e380aaf6450ba608920	Via Trenta	57	7.7	28
(2 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	53a60a88498ef405d8a78217	VITE vinosteria	106	8.8	30
(3 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4bc11e07920eb713d6491a2c	Donato's Restaurant	23	7.2	9
(4 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4a82d6adf964a5206ff91fe3	Uncle Peter's	42	8.9	11
(5 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4bae3bd0f964a52009963be3	Brothers Ravioli	10	8.2	2
(6 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4bafdb5df964a52086263ce3	Prima Pasta & Cafe	35	7.5	17
(7 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4e6409451495676d566f10b5	Bruno Ristorante Italiano	29	8.7	7
(8 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4ba148f5f964a5201da937e3	Roma View Catering	16	7.0	3
(9 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4b808501f964a5207b7930e3	Park Side	187	8.7	78
(10 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4ea2fc90cc2102b34d3d8dc7	Il Triangolo Ristorante	35	8.8	26
(11 / 106)		processed			
Empty DataFrame					
Columns: [ID, Name, Likes, Rating, Tips]					
Index: []					
No data available for id= 4e4cdc81bd413c4cc66cc144					
(12 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4c8d2ce6f87e224bfb6d3b05	Tuscan Hills	46	8.0	15
(13 / 106)		processed			
	ID	Name	Likes	Rating	Tips
0	4ba0203af964a520105c37e3	Portofino Ristorante	58	7.6	38
(14 / 106)		processed			

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

```

0 4c93eb6a72dd224be41d9591 Paul Michael Brick Oven Cafe 16 7.1 14
( 15 / 106 ) processed
      ID      Name Likes Rating Tips
0 4c93eb6a72dd224be41d9591 Paul Michael Brick Oven Cafe 16 7.1 14
( 16 / 106 ) processed
      ID      Name Likes Rating Tips
0 5aa41faf178a2a08410ce198 Beebe's 53 8.5 11
( 17 / 106 ) processed
      ID      Name Likes Rating Tips
0 53ed8f36498ea1eca81563c1 Il Falco 38 8.1 15
( 18 / 106 ) processed
      ID      Name Likes Rating Tips
0 555d29f7498eb6112f44ecac SoleLuna 119 9.1 26
( 19 / 106 ) processed
      ID      Name Likes Rating Tips
0 4ce1741194c3b60c5dc776ea Dazie's Restaurant 8 6.0 8
( 20 / 106 ) processed
      ID      Name Likes Rating Tips
0 5480b6d4498e6e352f7a8d3e Cotto 29 5.9 9
( 21 / 106 ) processed
      ID      Name Likes Rating Tips
0 5c6183b006fb60002ca6572b Patrizia's of Maspeth 6 7.4 2
( 22 / 106 ) processed
      ID      Name Likes Rating Tips
0 513d152ee4b0d54ade774b14 Forno Pizzeria & Trattoria 20 7.4 12
( 23 / 106 ) processed
      ID      Name Likes Rating Tips
0 4b89b361f964a520074c32e3 Joe's Restaurant 33 8.0 15
( 24 / 106 ) processed
      ID      Name Likes Rating Tips
0 4c1e7c9e63750f47d5d3b967 Antica Trattoria 19 8.0 14
( 25 / 106 ) processed
      ID      Name Likes Rating Tips
0 4dcf12c8fa7664b7c6b91801 Trattoria Cerbone 4 7.0 6
( 26 / 106 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 53bcb8c6498e5cf43e9785f7
( 27 / 106 ) processed
      ID      Name Likes Rating \
0 4c50f9ae9d642d7f357fc6dc Avellino Ristorante & Pizzeria 28 8.5

Tips
0 13
( 28 / 106 ) processed
      ID      Name Likes Rating Tips
0 4cb21cebdb32f04db2a7cd4d Aldo's Pizzeria & Restaurant 22 7.2 12
( 29 / 106 ) processed
      ID      Name Likes Rating Tips
0 4ac7e812f964a5207fba20e3 Don Peppe 103 8.1 48
( 30 / 106 ) processed
      ID      Name Likes Rating \
0 4ebc34954690a29fd6be2e82 Nonna's Pizzeria and Trattoria 8 7.1

Tips
0 4
( 31 / 106 ) processed
      ID      Name Likes Rating Tips
0 4ba3d448f964a5200c6438e3 Il Nocello Ristorante 7 7.0 5
( 32 / 106 ) processed
      ID      Name Likes Rating Tips
0 56071182498e48b25409f3b5 Liola Ristorante 6 6.9 4
( 33 / 106 ) processed
      ID      Name Likes Rating Tips
0 4bc1f7b6461576b025907c32 Verdi's of Whitestone 12 5.8 4
( 34 / 106 ) processed
      ID      Name Likes Rating Tips
0 4d290280342d6dcb91a7fec Villaggio Ristorante 10 5.8 4
( 35 / 106 ) processed
      ID      Name Likes Rating Tips
0 4bb7ca5b1261d13a83e2e798 Papazzio Restaurant 22 7.9 13
( 36 / 106 ) processed

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```

                                ID          Name Likes Rating Tips
0  4d4e0113869cf04dd10ce4ae Trattoria Thirty Five      33    7.1    29
( 37 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4b89d531f964a520f54f32e3 Jimmy's Trattoria      11    7.1     7
( 38 / 106 ) processed

                                ID          Name Likes Rating \
0  4b96ab2af964a520bfdc34e3 Durso's Pasta & Ravioli Company    27    8.1

Tips
0  15
( 39 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4c0aeaa1340720a1fd5b8793 Primo Amore          6    5.9     2
( 40 / 106 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c0bec6a6071a59315fae132
( 41 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bc8f64c0687ef3bda0bd9cc Aunt Bella's          9    7.9     3
( 42 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bae85bef964a52073bc3be3 Il Bacco          63    7.6    20
( 43 / 106 ) processed

                                ID          Name Likes Rating Tips
0  528ffa0b11d2ea463d2cd25c Ponte Mollo          9    8.0     3
( 44 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bc0cad874a9a59398afd0f6 Il Sapore Pizza          6    7.3     4
( 45 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4c1a9ed0b4e62d7fa119d893 La Grotta di Marcello      7    6.6     3
( 46 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bd23c50caff95215f71d2f0 Il Toscano          18    6.2    12
( 47 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bc8f64c0687ef3bda0bd9cc Aunt Bella's          9    7.9     3
( 48 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bc0cad874a9a59398afd0f6 Il Sapore Pizza          6    7.3     4
( 49 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bae85bef964a52073bc3be3 Il Bacco          63    7.6    20
( 50 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4c1a9ed0b4e62d7fa119d893 La Grotta di Marcello      7    6.6     3
( 51 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4bd23c50caff95215f71d2f0 Il Toscano          18    6.2    12
( 52 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4c450fae74ffc928328676cc Luigi's Restaurant & Bar    79    8.4    34
( 53 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4cf009ae7b94370446c43653 Trattoria Lucia          17    6.5     8
( 54 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4d0ab4386aa05481d5f5e5aa Arturo's Ristorante Italiano    6    5.9     1
( 55 / 106 ) processed

                                ID          Name Likes Rating Tips
0  4c1e3a9f8b3aa593b4b49b5f L'italiana Trattoria      7    7.5    14
( 56 / 106 ) processed

                                ID          Name Likes Rating \
0  4b9c519ef964a520065f36e3 Villa Rustica Ristorante & Pizza    13    7.4

Tips
0  13
( 57 / 106 ) processed

                                ID          Name Likes Rating Tips
0  5c087e308264440039684a37 Ninos Aq          9    8.2     5

```

```

( 58 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4afc64a8f964a520382222e3  Trattoria L'incontro    123    8.8    61
( 59 / 106 ) processed
      ID              Name  Likes  Rating  Tips \
0  4b494398f964a520d96b26e3  Porto Bello Pizza and Restaurant    59    8.2

  Tips
0    21
( 60 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  53a618d4498ea7107dabe020  Via Vai        32    8.2    10
( 61 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4b26d60cf964a520b58124e3  Ornella Trattoria Italiana    42    7.9    72
( 62 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4e22342252b1f82ffba73c1c  due ponti ristorante        7    6.8    9
( 63 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4ce9b1fcfe90a35d7bf2490e  The Clinton Restaurant    16    7.0    6
( 64 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4ba3d448f964a5200c6438e3  Il Nocello Ristorante        7    7.0    5
( 65 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4d290280342d6dcb91a7feca  Villagio Ristorante    10    5.8    4
( 66 / 106 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4db21fe4fa8c14a4d2cd2d89
( 67 / 106 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c02bbfdf56c2d7fc7dd1b66
( 68 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4bd0c0cecaff9521b878cfff0  Plum Tomatoes        5    6.2    16
( 69 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4c450fae74ffc928328676cc  Luigi's Restaurant & Bar    79    8.4    34
( 70 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4b368ed8f964a520f53725e3  Acquista Trattoria    34    8.0    28
( 71 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  5b53e651005ac10039e41a58  Botte Bar        9    7.9    11
( 72 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  53a60a88498ef405d8a78217  VITE vinosteria    106    8.8    30
( 73 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  5aa41faf178a2a08410ce198  Beebe's        53    8.5    11
( 74 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  49c68eaaf964a5205c571fe3  Vesta Trattoria & Wine Bar    185    9.0   106
( 75 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4a86124ff964a5204e0020e3  Napoli Pizza & Pasta    48    7.7    34
( 76 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4e6409451495676d566f10b5  Bruno Ristorante Italiano    29    8.7    7
( 77 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4e4e429ebd4101d0d7a63105  Matteo's        29    6.8    10
( 78 / 106 ) processed
      ID              Name  Likes  Rating  Tips \
0  4c50f9ae9d642d7f357fc6dc  Avellino Ristorante & Pizzeria    28    8.5

  Tips
0    13

```

```
( 79 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4ea2fc90cc2102b34d3d8dc7  Il Triangolo Ristorante      35      8.8    26
( 80 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4bd0c0cecaff9521b878cff0  Plum Tomatoes        5      6.2    16
( 81 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4bd0c0cecaff9521b878cff0  Plum Tomatoes        5      6.2    16
( 82 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4bdcdd7c462b2d7fd0b7113c  Cara Mia Restaurant    29      8.6    11
( 83 / 106 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c38aa2a0a71c9b6d10841c9
( 84 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4c8d2ce6f87e224bfb6d3b05  Tuscan Hills         46      8.0    15
( 85 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4ba0203af964a520105c37e3  Portofino Ristorante    58      7.6    38
( 86 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4b368ed8f964a520f53725e3  Acquista Trattoria     34      8.0    28
( 87 / 106 ) processed
      ID              Name  Likes  Rating  \
0  4bbb76328a0d95216761d930  Francesco's Pizzeria & Restaurant      6      5.8

Tips
0      4
( 88 / 106 ) processed
      ID              Name  Likes  Rating  \
0  4b494398f964a520d96b26e3  Porto Bello Pizza and Restaurant    59      8.2

Tips
0     21
( 89 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4f048814f9ab88b0c268dda3  Antonio's Kitchen      15      6.9    12
( 90 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4af4e590f964a52049f721e3  Forno Siciliano       12      7.0    11
( 91 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  463220f3f964a520fb451fe3  Manetta's Ristorante   74      8.5    35
( 92 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4a1a3f6df964a5208b7a1fe3  Bella Via             64      8.1    36
( 93 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  49f5bf5ef964a520b46b1fe3  Manducatis Rustica     70      8.3    38
( 94 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  556fb3b4498e61f524e70951  Maiella              92      8.8    28
( 95 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4f74ff83e4b09b101271b89b  Manducatis           33      7.8     9
( 96 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  540a3547498e9b339b6431ae  Le Fanfare          112      8.2    33
( 97 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  53ed8f36498ea1eca81563c1  Il Falco            38      8.1    15
( 98 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  555d29f7498eb6112f44ecac  SoleLuna           119      9.1    26
( 99 / 106 ) processed
      ID              Name  Likes  Rating  Tips
0  4bc11e07920eb713d6491a2c  Donato's Restaurant    23      7.2     9
( 100 / 106 ) processed
      ID  \
```

```
0 4c0d4e92b1b676b07c63e086
```

```

                                Name  Likes  Rating  Tips
0  Rocco's Italian Sauge / Cheese Steaks / Break...    21    7.3    15
( 101 / 106 ) processed

```

```

                                ID          Name  Likes  Rating  Tips
0  53989edf498e85ce86d65ea2  Villa Erasmo    16    8.2    4
( 102 / 106 ) processed

```

```

                                ID          Name  Likes  Rating  Tips
0  56071182498e48b25409f3b5  Liola Ristorante     6    6.9    4
( 103 / 106 ) processed

```

```

                                ID          Name  Likes  Rating  Tips
0  5aa41faf178a2a08410ce198  Beebe's      53    8.5    11
( 104 / 106 ) processed

```

```

                                ID          Name  Likes  Rating  Tips
0  53ed8f36498ea1eca81563c1  Il Falco     38    8.1    15
( 105 / 106 ) processed

```

```

                                ID          Name  Likes  Rating  Tips
0  57a13096498e42182b7df641  Oro Restaurant and Lounge  8    6.5    4
( 106 / 106 ) processed

```

Get details of Italian Restaurants in Staten Island

In [82]:

```
# prepare neighborhood list that contains italian restaurants in Staten Island
column_names=['Borough', 'Neighborhood', 'ID','Name','Likes','Rating','Tips']
italian_rest_stats_Staten_Island=pd.DataFrame(columns=column_names)
count=1
for row in italian_rest_Staten_Island.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(italian_rest_Staten_Island),')','processed')
    italian_rest_stats_Staten_Island = italian_rest_stats_Staten_Island.append({'Borough': Borough,
                                                                                'Neighborhood': Neighborhood,
                                                                                'ID': id,
                                                                                'Name' : name,
                                                                                'Likes' : likes,
                                                                                'Rating' : rating,
                                                                                'Tips' : tips
                                                                                }, ignore_index=True)

    count+=1
```

Empty DataFrame

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

Index: []

No data available for id= 590928301de7651d663ae087

(1 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4a271f0cf964a5205c911fe3	Enoteca Maria	92	7.6	40

(2 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4b76d8dbf964a520be632ee3	Pier 76 Italian Restaurant	79	7.9	44

(3 / 104) processed

	ID	Name	Likes	Rating	Tips
0	590928301de7651d663ae087	Marie's 2	9	8.1	2

(4 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4b76d8dbf964a520be632ee3	Pier 76 Italian Restaurant	79	7.9	44

(5 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4a271f0cf964a5205c911fe3	Enoteca Maria	92	7.6	40

(6 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bcc8e3bb6c49c7422ed9391	Tony's Brick Oven Pizzeria	18	8.3	18

(7 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4e179bdc52b123a586ceea11	Bin 5	19	8.2	7

(8 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bbb8986e452952190d154a4	Da Noi Fingerboard	20	7.4	6

(9 / 104) processed

Empty DataFrame

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

Index: []

No data available for id= 4b63728ff964a5208d7a2ae3

(10 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4b5b58dbf964a52088f628e3	Panini Grill	22	8.4	1136

(11 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bf872974a67c928b57725cf	Cafe Milano	19	8.0	6

(12 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4b6b0b96f964a52001ef2be3	Pastosa's	13	7.7	6

(13 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4d51deac3062a1cd37786ba3	Bella Mama Rose Italian Restaurant	6		


```

    Rating Tips
0      6.6    10
( 14 / 104 ) processed
      ID      Name Likes Rating Tips
0  4b9a599af964a5201aae35e3  Cucina Mia      5      7.1      3
( 15 / 104 ) processed
      ID      Name Likes Rating Tips
0  4e35b9daaeb7f67fbd346ef9  Waterfalls      7      5.9     25
( 16 / 104 ) processed
      ID      Name Likes Rating Tips
0  4ad910d8f964a520b81721e3  Da Noi Restaraunt     13      7.9      6
( 17 / 104 ) processed
      ID      Name Likes Rating Tips
0  4b343839f964a5203a2625e3  La Strada     24      8.4     10
( 18 / 104 ) processed
      ID      Name Likes Rating Tips
0  4be61580d4f7c9b6fe662620  Brioso      22      7.6     15
( 19 / 104 ) processed
      ID      Name Likes Rating Tips
0  4bc73ff96501c9b696063e29  Little Italy Gourmet     12      7.5      6
( 20 / 104 ) processed
      ID      Name Likes Rating Tips
0  4b9fb541f964a520fd3637e3  La Fontana Restaurant     16      6.9      8
( 21 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4eac61a861af01ea2b33028f
( 22 / 104 ) processed
      ID      Name Likes Rating \
0  517dbe77e4b0eef580c875a3  Piccolino's italian Restaurant     13      7.9

    Tips
0      2
( 23 / 104 ) processed
      ID      Name Likes Rating Tips
0  5182ef83498e59069ff5e71b  Patrizia's Pizza and Pasta     59      8.0    190
( 24 / 104 ) processed
      ID      Name Likes Rating Tips
0  4d4b4295ad4a6ea89135fbe9  Fiore Di Mare      6      8.5      5
( 25 / 104 ) processed
      ID      Name Likes Rating \
0  4cb8efaa90c9a143a5e183d6  Benvenuti Pizzeria e Trattoria      3      5.8

    Tips
0      9
( 26 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 596fd80235811b1c18aa0d51
( 27 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c87e4459c7db1f71f8d97be
( 28 / 104 ) processed
      ID      Name Likes Rating Tips
0  4c4a44f9bad7a593ee641daa  Giovannis Trattoria     10      7.4      4
( 29 / 104 ) processed
      ID      Name Likes Rating Tips
0  5182ef83498e59069ff5e71b  Patrizia's Pizza and Pasta     59      8.0    190
( 30 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4faee0e2e4b08260e41249d3
( 31 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 5b04e01362845c00243e93b7
( 32 / 104 ) processed

```

```

                                ID      Name  Likes  Rating  Tips
0  4bf08bf117880f47a3782937  Angelina's Ristorante      37      8.3    23
( 33 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  59fc9f85f193c02897fc2369  Deluca's Italian Restaurant      8      7.6     2
( 34 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  537e9b77498e6816a1f38ca6  Dinico of mulberry      5      6.3     1
( 35 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4b76d8dbf964a520be632ee3  Pier 76 Italian Restaurant     79      7.9    44
( 36 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  590928301de7651d663ae087  Marie's 2      9      8.1     2
( 37 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4a271f0cf964a5205c911fe3  Enoteca Maria     92      7.6    40
( 38 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4b8a719df964a520016d32e3  Jimmy Max      49      8.1    15
( 39 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4bddbdea587b2d7fc5e25409  Basilio's Inn     17      7.3     4
( 40 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4c2546d5a852c928e5a2e46c  Italianissimo     14      7.0     7
( 41 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4b803abff964a520cd5e30e3  Nino's      21      8.2     9
( 42 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4be73347d4f7c9b66c992720  Bocelli      35      7.6    13
( 43 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4b9bdbd8f964a5201e2e36e3  Cafe Luna      14      7.2     7
( 44 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c2546d5a852c928e5a2e46c
( 45 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4bcf46d4a8b3a593fae6615f  Pastosa Ravioli     32      9.1     8
( 46 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4be73347d4f7c9b66c992720  Bocelli      35      7.6    13
( 47 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4303cf80f964a5201c271fe3  Trattoria Romana     60      7.7    17
( 48 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4b803abff964a520cd5e30e3  Nino's      21      8.2     9
( 49 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4b9bdbd8f964a5201e2e36e3  Cafe Luna      14      7.2     7
( 50 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4daa28bd93a04642f079c973  Cielo Ristorante     12      7.0     3
( 51 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4af72d60f964a520ce0622e3  Pasticceria Bruno     39      7.5    23
( 52 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4ba80534f964a520f6c639e3  Max's Es-Ca      27      8.8   174
( 53 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  54e13989498ed2a42c122b0f  Mario's      17      7.9     9
( 54 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4af72d60f964a520ce0622e3  Pasticceria Bruno     39      7.5    23
( 55 / 104 ) processed

                                ID      Name  Likes  Rating  Tips
0  4303cf80f964a5201c271fe3  Trattoria Romana     60      7.7    17

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```
( 56 / 104 ) processed
      ID                               Name  Likes  Rating \
0  53e3fedd498ed822e0283349  Michael's Meatballs & Martinis    22    7.1

      Tips
0      8
( 57 / 104 ) processed
      ID                               Name  Likes  Rating  Tips
0  4daa28bd93a04642f079c973  Cielo Ristorante        12    7.0     3
( 58 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4addf818f964a520de6621e3
( 59 / 104 ) processed
      ID                               Name  Likes  Rating  Tips
0  4d7acef35462b60c7c97cbd8  Cucina Fresca         5    8.0     5
( 60 / 104 ) processed
      ID                               Name  Likes  Rating  Tips
0  4b343839f964a5203a2625e3  La Strada            24    8.4    10
( 61 / 104 ) processed
      ID                               Name  Likes  Rating  Tips
0  4be61580d4f7c9b6fe662620  Briosio              22    7.6    15
( 62 / 104 ) processed
      ID                               Name  Likes  Rating  Tips
0  4bc73ff96501c9b696063e29  Little Italy Gourmet  12    7.5     6
( 63 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4d93fbaf8deb8cfa1ec436c0
( 64 / 104 ) processed
      ID                               Name  Likes  Rating \
0  517dbe77e4b0eef580c875a3  Piccolino's italian Restaurant    13    7.9

      Tips
0      2
( 65 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c87e4459c7db1f71f8d97be
( 66 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 596fd80235811b1c18aa0d51
( 67 / 104 ) processed
      ID                               Name  Likes  Rating \
0  4cb8efaa90c9a143a5e183d6  Benvenuti Pizzeria e Trattoria     3    5.8

      Tips
0      9
( 68 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4cfacc6cfeec6dcbb7724236
( 69 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4ba42ec8f964a520c48938e3
( 70 / 104 ) processed
      ID                               Name  Likes  Rating  Tips
0  4ba6706af964a520875239e3  Nucci's              29    7.6     7
( 71 / 104 ) processed
      ID                               Name  Likes  Rating  Tips
0  4f5b584da17c35d95157d1ec  Zio Toto - Staten Island    14    7.2     8
( 72 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
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No data available for id= 5b66428792e7a9002ca7cc7d

(73 / 104) processed

Empty DataFrame

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

Index: []

No data available for id= 4c435d1e2d3ec9b6a3672dae

(74 / 104) processed

	ID	Name	Likes	Rating	Tips
0	50189ccee4b0d35e6d8774f8	Villa Monte's	11	6.6	5

(75 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4c364d5f93db0f4754d81d92	All Star Cafe	5	7.5	4

(76 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4ad910d8f964a520b81721e3	Da Noi Restaraunt	13	7.9	6

(77 / 104) processed

Empty DataFrame

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

Index: []

No data available for id= 4c853b75e602b1f731beb57a

(78 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bfaf5c9ab180f477f32b3ce	Cafe del Mondo	10	5.5	6

(79 / 104) processed

	ID	Name	Likes	Rating	Tips
0	5079ccdce4b065f1dd8155ad	Casa verde	8	7.8	3

(80 / 104) processed

Empty DataFrame

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

Index: []

No data available for id= 4c27cc8f3492a593cb72b628

(81 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4b9fb541f964a520fd3637e3	La Fontana Restaurant	16	6.9	8

(82 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4e179bdc52b123a586ceea11	Bin 5	19	8.2	7

(83 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bcc8e3bb6c49c7422ed9391	Tony's Brick Oven Pizzeria	18	8.3	18

(84 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bbb8986e452952190d154a4	Da Noi Fingerboard	20	7.4	6

(85 / 104) processed

Empty DataFrame

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

Index: []

No data available for id= 4b63728ff964a5208d7a2ae3

(86 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bcc8e3bb6c49c7422ed9391	Tony's Brick Oven Pizzeria	18	8.3	18

(87 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4e179bdc52b123a586ceea11	Bin 5	19	8.2	7

(88 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bcf46d4a8b3a593fae6615f	Pastosa Ravioli	32	9.1	8

(89 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4b803abff964a520cd5e30e3	Nino's	21	8.2	9

(90 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4be73347d4f7c9b66c992720	Bocelli	35	7.6	13

(91 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4b9bdb8f964a5201e2e36e3	Cafe Luna	14	7.2	7

(92 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bcf46d4a8b3a593fae6615f	Pastosa Ravioli	32	9.1	8

(93 / 104) processed

	ID	Name	Likes	Rating	Tips
0	4bf872974a67c928b57725cf	Cafe Milano	19	8.0	6

(94 / 104) processed

```

                                ID                               Name  Likes  \
0  4d51deac3062a1cd37786ba3  Bella Mama Rose Italian Restaurant      6

    Rating  Tips
0      6.6    10
( 95 / 104 ) processed
                                ID                               Name  Likes  Rating  Tips
0  4e35b9daaeb7f67fbd346ef9  Waterfalls                          7      5.9    25
( 96 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 5b04e01362845c00243e93b7
( 97 / 104 ) processed
                                ID                               Name  Likes  Rating  Tips
0  4c27cc8f3492a593cb72b628  Classic Pizza                      7      7.7    2
( 98 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c091311a1b32d7f5efb96f0
( 99 / 104 ) processed
                                ID                               Name  Likes  Rating  Tips
0  5079ccdce4b065f1dd8155ad  Casa verde                        8      7.8    3
( 100 / 104 ) processed
                                ID                               Name  Likes  Rating  Tips
0  4c27cc8f3492a593cb72b628  Classic Pizza                      7      7.7    2
( 101 / 104 ) processed
                                ID                               Name  Likes  Rating  Tips
0  4f5b584da17c35d95157d1ec  Zio Toto - Staten Island      14      7.2    8
( 102 / 104 ) processed
                                ID                               Name  Likes  Rating  Tips
0  4ba6706af964a520875239e3  Nucci's                     29      7.6    7
( 103 / 104 ) processed
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c435d1e2d3ec9b6a3672dae
( 104 / 104 ) processed

```

Compile the Italian Restaurants data for all 5 Boroughs

```
In [83]: italian_rest_stats_ny = italian_rest_stats_Bronx.append(italian_rest_stats_Brooklyn,ignore_index=True)
```

```
In [84]: italian_rest_stats_Bronx.shape
```

```
Out[84]: (86, 7)
```

In [85]:

italian_rest_stats_Bronx

Out[85]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Bronx	Riverdale	55aaee4d498e3cbb70e625d6	Bella Notte Pizzeria	9	7.1	4
1	Bronx	Kingsbridge	55aaee4d498e3cbb70e625d6	Bella Notte Pizzeria	9	7.1	4
2	Bronx	Woodlawn	511edb6de4b0d58346fd272d	Patrizia's Of Woodlawn	18	8.4	14
3	Bronx	Woodlawn	4d3cb3026b3d236a066a6364	Rivers Edge	10	6.7	8
4	Bronx	Baychester	4c9518076b35a143d5dc21dc	Fratelli's	22	8.6	6
5	Bronx	Baychester	5411894d498e4a254a11a46c	Olive Garden	26	7.4	8
6	Bronx	Pelham Parkway	4bf96ae65317a593d837017f	Enzo's	26	8.6	11
7	Bronx	Pelham Parkway	4b10591af964a5205f6e23e3	Patricia's	84	8.5	39
8	Bronx	Pelham Parkway	4b47f069f964a5208c4426e3	Pasta Pasta	9	6.3	8
9	Bronx	City Island	4514ed4df964a520e5391fe3	Artie's Steak and Seafood	44	8.2	27
10	Bronx	City Island	55905336498e1a9217de2a7a	Scavello's On The Island	13	8.5	2
11	Bronx	City Island	4b80a1c3f964a520488230e3	Portofino Restaurant	10	6.1	10
12	Bronx	Bedford Park	4b1712a8f964a520dbc123e3	Jolly Tinker	19	7.1	4
13	Bronx	Fordham	4acf80aef964a52025d420e3	Tino's Delicatessen	145	9.3	48
14	Bronx	Fordham	4bb6470cef159c7465b275f7	Calabria Pork Store	30	8.9	13
15	Bronx	Fordham	4aa425bef964a5208e4520e3	Dominick's Restaurant	101	8.4	37
16	Bronx	Fordham	59050f51b23dfa5f6649e678	Arthur Avenue Fiasco	10	8.2	4
17	Bronx	Fordham	4b5514c4f964a5207cda27e3	Enzo's	43	8.2	19
18	Bronx	Fordham	4b5a4c8ff964a52049bb28e3	Emilia's Restaurant	32	8.1	16
19	Bronx	Fordham	4af71916f964a520cf0522e3	Michaelangelo's Coal Fired Brick Oven Pizza Re...	39	7.8	25
20	Bronx	Fordham	4c9b9e7b9c663704b90463fd	Gerbasi Ristorante	15	7.7	12
21	Bronx	Fordham	53ff939c498e6b601dfa3979	San Gennaro Ristorante	17	7.1	1
22	Bronx	Fordham	4bc67f1104e8b713a833362d	Ann & Tony's - An Original Arthur Avenue Resta...	12	7.1	8
23	Bronx	Melrose	5956be26123a195de6701c2b	Porto Salvo	10	8.4	5
24	Bronx	Melrose	4bb692672ea19521a6ecab2f	Venice Restaurant & Pizzeria	8	6.8	9
25	Bronx	Mott Haven	4e6acfb1ae60950955a9b02b	Wish 37	3	6.6	6
26	Bronx	Morrisania	5956be26123a195de6701c2b	Porto Salvo	10	8.4	5
27	Bronx	Throgs Neck	4b4e3e87f964a5209de626e3	Patricia's of Tremont	48	8.2	29
28	Bronx	Throgs Neck	4b958fccf964a52091a934e3	Ice House Cafe	11	7.4	14
29	Bronx	Throgs Neck	4d4456d93616b60c953fe3c2	Tosca Marquee	20	6.8	14
30	Bronx	Throgs Neck	4c1d717b8b3aa59363a99a5f	Spoto's Italian Restaurant	6	6.6	11
31	Bronx	Throgs Neck	4b6cb1c0f964a520d04c2ce3	Mamma Lucia's Pizza & Pasta	3	6.6	10
32	Bronx	Throgs Neck	4b491198f964a5208f6426e3	Rino's Italian Restaurant	6	6.6	1
33	Bronx	Country Club	4c9e1ef2542b224b70a3f09f	Lucca Italian Restaurant	7	7.7	4
34	Bronx	Country Club	4b85b6b3f964a5209b6e31e3	Giovanni's Italian Restaurant	11	7.5	10
35	Bronx	Country Club	4b634812f964a520936f2ae3	Vito's Deli	6	6.8	5
36	Bronx	Country Club	0	0	0	0.0	0
37	Bronx	Westchester Square	51aa5120498ec578a5ad0ac4	The Pines	4	6.9	4
38	Bronx	Westchester Square	0	0	0	0.0	0
39	Bronx	Van Nest	3fd66200f964a5207bf11ee3	F & J Pine Tavern	176	8.7	72
40	Bronx	Van Nest	4bd1d5fdcaff95211c6ed1f0	900 Park Restaurant	57	7.3	19
41	Bronx	Morris Park	4b10591af964a5205f6e23e3	Patricia's	84	8.5	39

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
42	Bronx	Morris Park	4bf96ae65317a593d837017f	Enzo's	26	8.6	11
43	Bronx	Morris Park	4bd1d5fdcaff95211c6ed1f0	900 Park Restaurant	57	7.3	19
44	Bronx	Morris Park	51aa5120498ec578a5ad0ac4	The Pines	4	6.9	4
45	Bronx	Morris Park	4b47f069f964a5208c4426e3	Pasta Pasta	9	6.3	8
46	Bronx	Belmont	4acf80aef964a52025d420e3	Tino's Delicatessen	145	9.3	48
47	Bronx	Belmont	4bb6470cef159c7465b275f7	Calabria Pork Store	30	8.9	13
48	Bronx	Belmont	4af0fa29f964a52060e021e3	Antonio's Trattoria	117	8.9	44
49	Bronx	Belmont	59050f51b23dfa5f6649e678	Arthur Avenue Fiasco	10	8.2	4
50	Bronx	Belmont	4aa425bef964a5208e4520e3	Dominick's Restaurant	101	8.4	37
51	Bronx	Belmont	4b5514c4f964a5207cda27e3	Enzo's	43	8.2	19
52	Bronx	Belmont	4af71916f964a520cf0522e3	Michaelangelo's Coal Fired Brick Oven Pizza Re...	39	7.8	25
53	Bronx	Belmont	4b5a4c8ff964a52049bb28e3	Emilia's Restaurant	32	8.1	16
54	Bronx	Belmont	4c9b9e7b9c663704b90463fd	Gerbasì Ristorante	15	7.7	12
55	Bronx	Belmont	4aa193d5f964a520124120e3	Mario's Restaurant & Catering	54	8.0	26
56	Bronx	Belmont	4a8e261cf964a5201c1220e3	Roberto's	65	8.1	23
57	Bronx	Belmont	4c79d294278eb713f6a05580	Cafe al Mercato	10	7.9	5
58	Bronx	Belmont	4cb0d382ef1b370419643e00	David Greco's Arthur Avenue Trattoria	6	7.7	6
59	Bronx	Belmont	4b5bc595f964a520431529e3	Pasquale Riggaletto's	33	7.5	18
60	Bronx	Belmont	53ff939c498e6b601dfa3979	San Gennaro Ristorante	17	7.1	1
61	Bronx	Spuyten Duyvil	55aaee4d498e3cbb70e625d6	Bella Notte Pizzeria	9	7.1	4
62	Bronx	North Riverdale	4b3bdd2cf964a520f57c25e3	Madison's	12	7.5	4
63	Bronx	North Riverdale	4b451a29f964a520ad0426e3	Beccofino	28	7.8	18
64	Bronx	Pelham Bay	4b85b6b3f964a5209b6e31e3	Giovanni's Italian Restaurant	11	7.5	10
65	Bronx	Pelham Bay	4c9e1ef2542b224b70a3f09f	Lucca Italian Restaurant	7	7.7	4
66	Bronx	Pelham Bay	4bc20b8d2a89ef3b6f1af388	Villa Barone Ristorante	15	6.9	12
67	Bronx	Pelham Bay	4b634812f964a520936f2ae3	Vito's Deli	6	6.8	5
68	Bronx	Schuylerville	4b4e3e87f964a5209de626e3	Patricia's of Tremont	48	8.2	29
69	Bronx	Schuylerville	4b491198f964a5208f6426e3	Rino's Italian Restaurant	6	6.6	1
70	Bronx	Schuylerville	4c1d717b8b3aa59363a99a5f	Spoto's Italian Restaurant	6	6.6	11
71	Bronx	Edgewater Park	4b4e3e87f964a5209de626e3	Patricia's of Tremont	48	8.2	29
72	Bronx	Edgewater Park	4b958fccf964a52091a934e3	Ice House Cafe	11	7.4	14
73	Bronx	Edgewater Park	4d4456d93616b60c953fe3c2	Tosca Marquee	20	6.8	14
74	Bronx	Edgewater Park	4c1d717b8b3aa59363a99a5f	Spoto's Italian Restaurant	6	6.6	11
75	Bronx	Edgewater Park	4b491198f964a5208f6426e3	Rino's Italian Restaurant	6	6.6	1
76	Bronx	Edgewater Park	4b6cb1c0f964a520d04c2ce3	Mamma Lucia's Pizza & Pasta	3	6.6	10
77	Bronx	Pelham Gardens	4c9518076b35a143d5dc21dc	Fratelli's	22	8.6	6
78	Bronx	Concourse	4bfd8d06f61dc9b669309fde	Tiny's Pizza & Pasta	6	7.1	4
79	Bronx	Concourse Village	5956be26123a195de6701c2b	Porto Salvo	10	8.4	5
80	Bronx	Concourse Village	4bfd8d06f61dc9b669309fde	Tiny's Pizza & Pasta	6	7.1	4
81	Bronx	Bronxdale	3fd66200f964a5207bf11ee3	F & J Pine Tavern	176	8.7	72
82	Bronx	Bronxdale	4bf96ae65317a593d837017f	Enzo's	26	8.6	11
83	Bronx	Bronxdale	4b10591af964a5205f6e23e3	Patricia's	84	8.5	39
84	Bronx	Bronxdale	4bd1d5fdcaff95211c6ed1f0	900 Park Restaurant	57	7.3	19
85	Bronx	Bronxdale	4b47f069f964a5208c4426e3	Pasta Pasta	9	6.3	8

In [86]: `italian_rest_stats_Brooklyn.shape`

Out[86]: `(114, 7)`

In [87]:

italian_rest_stats_Brooklyn

Out[87]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Brooklyn	Bay Ridge	4b70d8dff964a52063312de3	Tuscany Grill	15	7.9	7
1	Brooklyn	Bay Ridge	3fd66200f964a5205fee1ee3	Ponte Vecchio Restaurant	39	7.8	17
2	Brooklyn	Bay Ridge	4ad62c95f964a5208d0521e3	Zio Toto	16	7.2	34
3	Brooklyn	Bay Ridge	4bd075f2caff952145d3cef0	Gino's Restaurant	139	8.4	57
4	Brooklyn	Bay Ridge	4a7e205ef964a52012f11fe3	Sofia Restorante Italiano	15	7.0	10
5	Brooklyn	Bay Ridge	4e732dff45dd41e9ccce1987	Giacomo's Wood Fired Pizza & Trattoria	23	7.1	20
6	Brooklyn	Bensonhurst	4e30a139483bb3fdc436a7e3	Villa Fiorita	3	8.0	4
7	Brooklyn	Bensonhurst	4ae23a80f964a5200c8c21e3	il Colosseo	30	7.6	22
8	Brooklyn	Bensonhurst	4e073239cc3f1ed1312dce37	Panino Rustico	45	8.7	18
9	Brooklyn	Bensonhurst	4c0791492e80a593eabf75f9	Papa Pasquale	12	8.2	5
10	Brooklyn	Sunset Park	5095a98ae4b0038a605e6f45	Cafe Lore	7	7.3	6
11	Brooklyn	Greenpoint	5424b085498ec9a9cddb44b70	Naked Dog	127	8.8	22
12	Brooklyn	Greenpoint	5c6dde8de3bbf002c44d83c	Forma Pasta Factory	38	9.2	12
13	Brooklyn	Gravesend	4ad8c329f964a520731421e3	Joe's of Avenue U	35	7.9	27
14	Brooklyn	Sheepshead Bay	5a10a9d76e465053a63ca8c7	Patrizia's Of Sheepshead Bay	11	8.2	0
15	Brooklyn	Sheepshead Bay	4ad9fb95f964a520bb1c21e3	Il Fornetto	63	7.5	28
16	Brooklyn	Sheepshead Bay	4c9e81bb54c8a1cdea8f8e4b	Anthony's Place	28	8.2	10
17	Brooklyn	Sheepshead Bay	55466c7e498e28eca31fc3e9	Next Door	17	7.3	4
18	Brooklyn	Sheepshead Bay	4c03fc29f423a59314f7d016	Maria's Ristorante Italiano	12	6.7	4
19	Brooklyn	Flatbush	52b90597498ed57b85609429	Lea	116	8.2	33
20	Brooklyn	Windsor Terrace	4ec7fa185c5ce271be2b2bfa	Giovanni's Brooklyn Eats	129	8.7	56
21	Brooklyn	Windsor Terrace	4a85fd26f964a520f4ff1fe3	Provini	186	8.9	53
22	Brooklyn	Windsor Terrace	582466b8a130da5121eb7b36	Flora	11	8.1	8
23	Brooklyn	Windsor Terrace	4d7c069273ca54818e2c577c	Piccoli	10	7.0	13
24	Brooklyn	Windsor Terrace	5689b018498e9a7081b667e3	Della	31	6.8	2
25	Brooklyn	Williamsburg	5cdf51a01f74400039a39cdf	Dough Vale	6	8.1	5
26	Brooklyn	Bushwick	5a98aed16a59506d7a60d67c	Carmenta's	58	9.4	21
27	Brooklyn	Bushwick	587fad59e786b27f550ce708	Nicandra's	33	8.7	10
28	Brooklyn	Brooklyn Heights	4be30f9dd27a20a1cd1f915b	River Deli	301	9.0	99
29	Brooklyn	Brooklyn Heights	3fd66200f964a520ece81ee3	Noodle Pudding	223	8.3	86
30	Brooklyn	Brooklyn Heights	5a0740a3e1f22816d11723d5	Lillo	46	9.3	9
31	Brooklyn	Brooklyn Heights	5044f749e4b0dd909d2cc123	Table 87	108	8.3	38
32	Brooklyn	Cobble Hill	5a0740a3e1f22816d11723d5	Lillo	46	9.3	9
33	Brooklyn	Cobble Hill	593329652632ec0582bd71df	Popina	46	7.9	14
34	Brooklyn	Cobble Hill	5044f749e4b0dd909d2cc123	Table 87	108	8.3	38
35	Brooklyn	Cobble Hill	3fd66200f964a52042f11ee3	Ferdinando's Focacceria	73	8.4	34
36	Brooklyn	Cobble Hill	5bdcfb3e6e69af0025d9e331	The Longshoreman	20	8.3	4
37	Brooklyn	Cobble Hill	4be30f9dd27a20a1cd1f915b	River Deli	301	9.0	99
38	Brooklyn	Carroll Gardens	49c4ff90f964a520da561fe3	Fragole	103	8.3	46
39	Brooklyn	Carroll Gardens	41abb800f964a520561e1fe3	Frankies 457 Spuntino	822	9.1	234
40	Brooklyn	Carroll Gardens	4aa85f31f964a520075120e3	Vinny's of Carroll Gardens	63	7.9	40
41	Brooklyn	Carroll Gardens	5c034c3ff5e9d7002c2a78b1	Franks Wine Bar	55	8.2	8
42	Brooklyn	Carroll Gardens	5a56ac38dd70c54d5825002f	Panzerotti Bites	23	7.9	3
43	Brooklyn	Carroll Gardens	5766ad56498ebf269c3737d2	Gersi	75	7.7	15

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
44	Brooklyn	Carroll Gardens	4bba7f7be3db7b7131269239a	Verde on Smith	108	7.8	58
45	Brooklyn	Gowanus	41abb800f964a520561e1fe3	Frankies 457 Spuntino	822	9.1	234
46	Brooklyn	Gowanus	5c034c3ff5e9d7002c2a78b1	Franks Wine Bar	55	8.2	8
47	Brooklyn	Gowanus	49d10b5af964a520545b1fe3	Bar Tano	143	7.9	50
48	Brooklyn	Gowanus	49c4ff90f964a520da561fe3	Fragole	103	8.3	46
49	Brooklyn	Fort Greene	5a00f3538496ca58fd9e2856	Evelina Restaurant	192	9.4	34
50	Brooklyn	Fort Greene	4c2d1eb17d85a593fa1452f3	Dino	228	8.4	96
51	Brooklyn	Fort Greene	4afca48af964a520ab2422e3	Roman's	295	8.7	116
52	Brooklyn	Fort Greene	57a3dfc8498e490e4b231778	LaRina Pastificio & Vino	148	9.1	20
53	Brooklyn	Fort Greene	4fbabf08e4b0ffe177a56434	Aita	292	8.9	76
54	Brooklyn	Park Slope	44bcb47ef964a5209b351fe3	al di là	558	8.9	192
55	Brooklyn	Starrett City	4b2fd53cf964a520d8f024e3	Olive Garden	147	6.7	53
56	Brooklyn	Manhattan Beach	5a10a9d76e465053a63ca8c7	Patrizia's Of Sheepshead Bay	11	8.2	0
57	Brooklyn	Manhattan Beach	4ad9fb95f964a520bb1c21e3	Il Fornetto	63	7.5	28
58	Brooklyn	Manhattan Beach	55466c7e498e28eca31fc3e9	Next Door	17	7.3	4
59	Brooklyn	Manhattan Beach	4c0183fd58dbc928d581ee6b	Papa Leone Pizza	5	7.4	7
60	Brooklyn	Manhattan Beach	4c03fc29f423a59314f7d016	Maria's Ristorante Italiano	12	6.7	4
61	Brooklyn	Coney Island	4b4a6c40f964a5201e8726e3	Gargiulo's Restaurant	88	8.4	24
62	Brooklyn	Bath Beach	4afac880f964a520ad1822e3	Pino's Ristorante	7	7.0	7
63	Brooklyn	Bath Beach	521a7e8a498e9a3defc15591	Casa Edesia Pizza and Grill	7	6.9	5
64	Brooklyn	Bath Beach	5caa190cf427de002cc9c76f	Olive Garden	3	6.8	3
65	Brooklyn	Dyker Heights	3fd66200f964a5205fee1ee3	Ponte Vecchio Restaurant	39	7.8	17
66	Brooklyn	Dyker Heights	4fcc08eebb3d3d2d8021af06	Tony's Pizzeria	12	7.4	7
67	Brooklyn	Dyker Heights	0	0	0	0.0	0
68	Brooklyn	Gerritsen Beach	4c03fc29f423a59314f7d016	Maria's Ristorante Italiano	12	6.7	4
69	Brooklyn	Gerritsen Beach	0	0	0	0.0	0
70	Brooklyn	Marine Park	4b92c1e7f964a520eb1834e3	Frank's Pizzeria & Restaurant	26	7.2	9
71	Brooklyn	Marine Park	4c0ad38aa1b32d7fb4109af0	Salvi's	7	7.2	4
72	Brooklyn	Clinton Hill	57a3dfc8498e490e4b231778	LaRina Pastificio & Vino	148	9.1	20
73	Brooklyn	Clinton Hill	572d1d41498e2483c3bed970	Da Ciro Brooklyn	15	8.0	7
74	Brooklyn	Clinton Hill	5a00f3538496ca58fd9e2856	Evelina Restaurant	192	9.4	34
75	Brooklyn	Clinton Hill	4afca48af964a520ab2422e3	Roman's	295	8.7	116
76	Brooklyn	Clinton Hill	4c2d1eb17d85a593fa1452f3	Dino	228	8.4	96
77	Brooklyn	Clinton Hill	4fbabf08e4b0ffe177a56434	Aita	292	8.9	76
78	Brooklyn	Downtown	4d9f5a9efc4f721e7e5a9d5f	Rucola	872	9.1	233
79	Brooklyn	Boerum Hill	4d9f5a9efc4f721e7e5a9d5f	Rucola	872	9.1	233
80	Brooklyn	Prospect Lefferts Gardens	59bfcdfb2079551e2b628d20	Camillo	54	8.4	12
81	Brooklyn	Prospect Lefferts Gardens	4b905bbcf964a5200f8633e3	Gino's Brick Oven Pizza and Trattoria	32	7.3	29
82	Brooklyn	Bergen Beach	4b467ca0f964a5206d2226e3	Il Posto	14	7.5	4
83	Brooklyn	Prospect Park South	52b90597498ed57b85609429	Lea	116	8.2	33
84	Brooklyn	Georgetown	4c267153b012b71350e30893	Landi's Pork Store	32	8.5	11
85	Brooklyn	Georgetown	4b467ca0f964a5206d2226e3	Il Posto	14	7.5	4
86	Brooklyn	Georgetown	4c2bbd1b2219c9288312a548	Pastosa Ravioli	6	7.2	1
87	Brooklyn	Georgetown	5698109e498eb4e676c57b75	Dolce Vita	6	6.2	2
88	Brooklyn	East Williamsburg	58eac71c0319b80a65d5045b	Ammazza Caffè	71	9.1	14

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
89	Brooklyn	East Williamsburg	4ffa2f57e4b05ae525579d36	Testo	132	8.6	40
90	Brooklyn	East Williamsburg	4a358dfaf964a5202d9d1fe3	Il Passatore	183	8.3	65
91	Brooklyn	North Side	4dcabca41f6e2812677e3598	The Meatball Shop	1337	8.8	374
92	Brooklyn	North Side	4106ec80f964a520890b1fe3	Aurora	447	8.9	118
93	Brooklyn	Ocean Parkway	4c0b017aa1b32d7f1d6d9af0	La Palina	34	8.6	18
94	Brooklyn	Ocean Parkway	4c8455bfe602b1f7a28cae7a	Cafe Renaissance	4	5.9	6
95	Brooklyn	Ocean Parkway	0	0	0	0.0	0
96	Brooklyn	Fort Hamilton	525c26bc11d277827d14468f	Campania Coal Fired Pizza	75	8.8	19
97	Brooklyn	Fort Hamilton	55ff210c498ef9c10335dc0b	Positano	39	8.0	10
98	Brooklyn	Fort Hamilton	3fd66200f964a5205fee1ee3	Ponte Vecchio Restaurant	39	7.8	17
99	Brooklyn	Fort Hamilton	4b70d8dff964a52063312de3	Tuscany Grill	15	7.9	7
100	Brooklyn	Fort Hamilton	5524916d498ee874044a6feb	Grotto	11	7.0	5
101	Brooklyn	Ditmas Park	52b90597498ed57b85609429	Lea	116	8.2	33
102	Brooklyn	Remsen Village	0	0	0	0.0	0
103	Brooklyn	Mill Basin	4c267153b012b71350e30893	Landi's Pork Store	32	8.5	11
104	Brooklyn	Mill Basin	4c2bbd1b2219c9288312a548	Pastosa Ravioli	6	7.2	1
105	Brooklyn	Mill Basin	5698109e498eb4e676c57b75	Dolce Vita	6	6.2	2
106	Brooklyn	Fulton Ferry	593c0d2262420b7feccc3048	Cecconi's	333	8.7	72
107	Brooklyn	Fulton Ferry	3fd66200f964a520ece81ee3	Noodle Pudding	223	8.3	86
108	Brooklyn	Vinegar Hill	593c0d2262420b7feccc3048	Cecconi's	333	8.7	72
109	Brooklyn	Vinegar Hill	3fd66200f964a520ece81ee3	Noodle Pudding	223	8.3	86
110	Brooklyn	Dumbo	593c0d2262420b7feccc3048	Cecconi's	333	8.7	72
111	Brooklyn	Dumbo	3fd66200f964a520ece81ee3	Noodle Pudding	223	8.3	86
112	Brooklyn	Homecrest	4c8455bfe602b1f7a28cae7a	Cafe Renaissance	4	5.9	6
113	Brooklyn	Madison	42508380f964a520c1201fe3	Michael's	57	8.1	11

In [88]: `italian_rest_stats_Manhattan.shape`

Out[88]: (138, 7)

In [89]:

italian_rest_stats_Manhattan

Out[89]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Manhattan	Washington Heights	4d21107c6e8c37042b58ff9f	Saggio Restaurant	119	8.7	62
1	Manhattan	Hamilton Heights	56d8e01d498ef1500ae7fbfe	Fumo	102	9.0	22
2	Manhattan	Hamilton Heights	558c6d42498eab8b9ee8da37	Bono Trattoria	101	8.7	19
3	Manhattan	Manhattanville	457f1183f964a5204b3f1fe3	Pisticci Ristorante	403	9.1	146
4	Manhattan	Manhattanville	4c956003f7cfa1cd2e2ebd15	Bettolona	91	8.0	40
5	Manhattan	Manhattanville	56d8e01d498ef1500ae7fbfe	Fumo	102	9.0	22
6	Manhattan	Manhattanville	3fd66200f964a52006e91ee3	Max SoHa	112	7.8	60
7	Manhattan	Central Harlem	56d8e01d498ef1500ae7fbfe	Fumo	102	9.0	22
8	Manhattan	East Harlem	3fd66200f964a5207de81ee3	Rao's	78	8.7	33
9	Manhattan	East Harlem	51800134e4b03b4e898c8f16	Armonie	15	8.5	10
10	Manhattan	East Harlem	53effc79498eddd22101127d	Nocciola Ristorante	25	7.7	9
11	Manhattan	Upper East Side	4a22d7f9f964a520977d1fe3	Sant Ambroeus	317	8.7	87
12	Manhattan	Upper East Side	4a6133a6f964a52015c21fe3	Caffe Buon Gusto - Manhattan	109	8.9	38
13	Manhattan	Upper East Side	4ab972d6f964a520697f20e3	Parma Restaurant	15	8.1	14
14	Manhattan	Upper East Side	42699000f964a52049211fe3	Uva	802	9.1	231
15	Manhattan	Upper East Side	562c1df4498e2c64fb4a9faa	San Matteo Pizzeria e Cucina	105	8.7	25
16	Manhattan	Upper East Side	56bce4c5498ef768f74f4e6c	Come Prima Ristorante	15	8.6	4
17	Manhattan	Upper East Side	4b23ee1ef964a520255d24e3	Caffe Grazie	68	8.1	26
18	Manhattan	Yorkville	4e4078922271a89dd083d07e	Felice 83	152	8.7	39
19	Manhattan	Yorkville	4b623700f964a520a83c2ae3	Nica Trattoria	29	8.4	19
20	Manhattan	Yorkville	4b651459f964a52030e32ae3	Italianissimo Ristorante	31	8.7	14
21	Manhattan	Yorkville	4b981d9af964a520802d35e3	Elio's	120	9.1	49
22	Manhattan	Yorkville	504bb0fae4b0d1cf33ca07d0	83 1/2	43	8.3	22
23	Manhattan	Yorkville	562c1df4498e2c64fb4a9faa	San Matteo Pizzeria e Cucina	105	8.7	25
24	Manhattan	Lenox Hill	4b775e32f964a520a6952ee3	Campagnola Restaurant	32	8.1	37
25	Manhattan	Lenox Hill	42699000f964a52049211fe3	Uva	802	9.1	231
26	Manhattan	Lenox Hill	4a6133a6f964a52015c21fe3	Caffe Buon Gusto - Manhattan	109	8.9	38
27	Manhattan	Lenox Hill	51c9e3f9498e2cb9c31d19ff	The Meatball Shop	656	8.4	178
28	Manhattan	Lenox Hill	3fd66200f964a52075e91ee3	Bella Blu	62	8.0	24
29	Manhattan	Lenox Hill	56bce4c5498ef768f74f4e6c	Come Prima Ristorante	15	8.6	4
30	Manhattan	Roosevelt Island	4b775e32f964a520a6952ee3	Campagnola Restaurant	32	8.1	37
31	Manhattan	Upper West Side	42489a80f964a5208a201fe3	Celeste	240	8.5	127
32	Manhattan	Upper West Side	56afed04498e39e35747adf2	Pizzeria Sirenetta	154	8.8	35
33	Manhattan	Upper West Side	4d68839467a8f04df7ee01be	Osteria Cotta	435	8.6	170
34	Manhattan	Upper West Side	4a7778a1f964a5209be41fe3	Carmine's Italian Restaurant	389	8.2	130
35	Manhattan	Upper West Side	5282b4bf11d2b180cc775713	Cibo E Vino	80	7.8	12
36	Manhattan	Lincoln Square	459395b7f964a52047401fe3	Cafe Fiorello	252	8.2	140
37	Manhattan	Lincoln Square	4b69b408f964a520c5ae2be3	Noi Due	39	8.0	26
38	Manhattan	Lincoln Square	548a64ae498e972164140a84	Parm	371	8.6	73
39	Manhattan	Lincoln Square	54961b98498ecc96c4a93d7	Masseria dei Vini	108	8.5	29
40	Manhattan	Lincoln Square	4ee6366b77c8e89319c7e4b8	Joanne Trattoria	132	7.7	64
41	Manhattan	Clinton	5633bec0498e430fc8ba8f3c	La Vela Dining & Bar	23	8.2	6
42	Manhattan	Clinton	4dcae1b18877502200c95822	Sergimmo Salumeria	328	8.8	129
43	Manhattan	Clinton	506e48ffe4b078ebe1c30a29	Bocca Di Bacco	107	8.1	38

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
44	Manhattan	Clinton	49d5651df964a520915c1fe3	Nizza	196	8.0	118
45	Manhattan	Chelsea	511d6006e4b0a486ec088c89	The Meatball Shop	1003	8.8	192
46	Manhattan	Chelsea	4533d338f964a5208f3b1fe3	Del Posto	655	8.6	281
47	Manhattan	Greenwich Village	504b2a9ee4b006c435a465d3	Carbone	704	9.2	233
48	Manhattan	Greenwich Village	5ab53749446ea6289e41b0e6	Coco Pazzo Kitchen & Restaurant	57	8.9	11
49	Manhattan	Greenwich Village	556f4ef2498ee60139b28c72	Dante NYC	494	9.2	134
50	Manhattan	Greenwich Village	56d92e05498e6c54b6325b19	San Carlo Osteria Piemonte	104	9.1	41
51	Manhattan	Greenwich Village	51278a09e4b0b624edbc914c	Charlie Bird	731	8.8	186
52	Manhattan	Greenwich Village	543075b3498e283e38ad9dec	Cotenna	883	9.0	233
53	Manhattan	Greenwich Village	3fd66200f964a5202de71ee3	Palma	483	8.9	127
54	Manhattan	Greenwich Village	4cc6222106c25481d7a4a047	Rubirosa Ristorante	2491	9.2	825
55	Manhattan	Greenwich Village	4d9f8d97a428a1cdd92acb04	Parm	1129	8.8	494
56	Manhattan	Greenwich Village	534c7a27498efe3d035cbbe9	Baker & Co.	399	8.8	98
57	Manhattan	Greenwich Village	54459a46498ecf8ec204cc61	Vic's	467	8.9	108
58	Manhattan	East Village	40f1d480f964a520680a1fe3	Hearth	582	8.7	208
59	Manhattan	East Village	4575b847f964a520a13e1fe3	Lavagna	143	8.6	76
60	Manhattan	Lower East Side	56cf3493cd106ae44d0c76a8	Speedy Romeo LES	302	8.8	81
61	Manhattan	Lower East Side	4d49d00ef53c8cfa78561c47	Gaia Italian Cafe	266	9.1	132
62	Manhattan	Lower East Side	42893400f964a5206c231fe3	Il Posto Accanto	118	8.8	50
63	Manhattan	Lower East Side	3fd66200f964a5209de41ee3	Supper	776	8.6	281
64	Manhattan	Lower East Side	4575b847f964a520a13e1fe3	Lavagna	143	8.6	76
65	Manhattan	Lower East Side	5070d27ae4b0513ffd4ddfe7	Trapizzino	81	8.5	17
66	Manhattan	Tribeca	4a149749f964a52055781fe3	Locanda Verde	1438	8.8	502
67	Manhattan	Tribeca	4ad68c35f964a520c20721e3	Pepolino	164	8.8	114
68	Manhattan	Tribeca	437bc800f964a520a52a1fe3	Scalini Fedeli	61	8.6	28
69	Manhattan	Tribeca	54ab15df498ee7d7723bca15	Adoro Lei	107	8.3	20
70	Manhattan	Little Italy	4c7d4f1b8da18cfa1afc9ece	Osteria Morini	747	8.7	292
71	Manhattan	Little Italy	4cc6222106c25481d7a4a047	Rubirosa Ristorante	2491	9.2	825
72	Manhattan	Little Italy	49e4f405f964a52078631fe3	Emporio	510	8.9	217
73	Manhattan	Little Italy	4d9f8d97a428a1cdd92acb04	Parm	1129	8.8	494
74	Manhattan	Soho	56d92e05498e6c54b6325b19	San Carlo Osteria Piemonte	104	9.1	41
75	Manhattan	Soho	4cc6222106c25481d7a4a047	Rubirosa Ristorante	2491	9.2	825
76	Manhattan	Soho	4ad68c35f964a520c20721e3	Pepolino	164	8.8	114
77	Manhattan	Soho	5ab53749446ea6289e41b0e6	Coco Pazzo Kitchen & Restaurant	57	8.9	11
78	Manhattan	Soho	4d9f8d97a428a1cdd92acb04	Parm	1129	8.8	494
79	Manhattan	Soho	49e4f405f964a52078631fe3	Emporio	510	8.9	217
80	Manhattan	Soho	504b2a9ee4b006c435a465d3	Carbone	704	9.2	233
81	Manhattan	West Village	4a27289cf964a52062911fe3	L'Artusi	1168	9.3	368
82	Manhattan	West Village	49bd2326f964a5204d541fe3	I Sodi	253	9.0	95
83	Manhattan	West Village	5c27b46a67a9fe002ce6b3ca	Fiaschetteria Pistoia	33	8.7	10
84	Manhattan	West Village	543c7c63498e0a3393da47a2	Via Carota	607	9.2	155
85	Manhattan	West Village	4a552b26f964a520c4b31fe3	Malatesta Trattoria	440	8.7	199
86	Manhattan	West Village	449e952ef964a520bc341fe3	Sant Ambroeus West Village	217	8.6	71
87	Manhattan	West Village	4d327cc72e56236a18991db4	Malaparte	270	8.9	78
88	Manhattan	West Village	534c7a27498efe3d035cbbe9	Baker & Co.	399	8.8	98
89	Manhattan	West Village	3fd66200f964a5202de71ee3	Palma	483	8.9	127

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
90	Manhattan	West Village	4eb5e354b8f786e2756cb884	The Meatball Shop	1072	9.0	277
91	Manhattan	Manhattan Valley	5962a53dc824ae6362e9e625	Osteria 106	38	8.4	9
92	Manhattan	Manhattan Valley	5c5b43f18194fc002c18f606	Fumo	13	8.6	5
93	Manhattan	Morningside Heights	5c5b43f18194fc002c18f606	Fumo	13	8.6	5
94	Manhattan	Morningside Heights	457f1183f964a5204b3f1fe3	Pisticci Ristorante	403	9.1	146
95	Manhattan	Morningside Heights	4d573d8aa747b60cc83b332b	Lido Harlem	339	8.6	134
96	Manhattan	Morningside Heights	3fd66200f964a52006e91ee3	Max SoHa	112	7.8	60
97	Manhattan	Morningside Heights	4c956003f7cfa1cd2e2ebd15	Bettolona	91	8.0	40
98	Manhattan	Gramercy	4afb2990f964a520a91b22e3	Maialino	1453	8.8	464
99	Manhattan	Gramercy	4b741ab4f964a5202cc82de3	Novità Cucina Creativa	110	8.7	38
100	Manhattan	Gramercy	57c772d1498e6cb2f6531cdf	Follia	110	8.4	20
101	Manhattan	Gramercy	5cc3adaa838e59002cb4629d	Rezdóra	70	8.4	19
102	Manhattan	Battery Park City	556cb8c6498e751e51bfc4f1	Parm	246	8.0	73
103	Manhattan	Battery Park City	4b4f88adf964a5204c0a27e3	Gigino at Wagner Park	119	8.5	61
104	Manhattan	Financial District	4bb54fe02f70c9b6c6188430	Giardino D'oro	35	8.2	18
105	Manhattan	Financial District	4a4560a7f964a5201aa81fe3	Harry's Italian Pizza Bar	317	7.8	141
106	Manhattan	Carnegie Hill	4aad53a2f964a520b75f20e3	Lex Restaurant	17	8.5	11
107	Manhattan	Carnegie Hill	4bb4d86886a8d13a83f8de7f	Sfoglia	90	8.1	54
108	Manhattan	Carnegie Hill	4b981d9af964a520802d35e3	Elio's	120	9.1	49
109	Manhattan	Noho	3fd66200f964a520d0e41ee3	Lil' Frankie's	892	8.8	258
110	Manhattan	Noho	4d49d00ef53c8cfa78561c47	Gaia Italian Cafe	266	9.1	132
111	Manhattan	Noho	42893400f964a5206c231fe3	Il Posto Accanto	118	8.8	50
112	Manhattan	Noho	3fd66200f964a5204de41ee3	Frank Restaurant	422	8.9	162
113	Manhattan	Noho	3fd66200f964a5201ce61ee3	Il Buo	540	8.9	146
114	Manhattan	Noho	56cf3493cd106ae44d0c76a8	Speedy Romeo LES	302	8.8	81
115	Manhattan	Civic Center	437bc800f964a520a52a1fe3	Scalini Fedeli	61	8.6	28
116	Manhattan	Civic Center	4ad68c35f964a520c20721e3	Pepolino	164	8.8	114
117	Manhattan	Civic Center	4a149749f964a52055781fe3	Locanda Verde	1438	8.8	502
118	Manhattan	Midtown South	55e63b89498e3ed62f75cff3	L'Amico	390	8.4	77
119	Manhattan	Midtown South	55a03533498ec7e74011d0af	La Pecora Bianca	432	8.5	77
120	Manhattan	Sutton Place	4b566000f964a520c00d28e3	Felidia	184	8.8	50
121	Manhattan	Sutton Place	4af610e2f964a520bf0022e3	Scalinatella	104	8.6	32
122	Manhattan	Sutton Place	54b1c94a498e09d5326f68fe	amata	30	8.6	9
123	Manhattan	Sutton Place	4a8f1d7ef964a520041420e3	Isle of Capri	45	8.2	30
124	Manhattan	Sutton Place	4f90a618e4b0ead1972c3da6	Tony's Di Napoli	251	8.3	64
125	Manhattan	Turtle Bay	59dfff99419a9e7fcc5b5fa2	La Pecora Bianca	94	8.2	15
126	Manhattan	Turtle Bay	5b1db44d0d8a0f002c17fd87	Angeletto	9	7.7	1
127	Manhattan	Turtle Bay	4b2042fff964a5208f2f24e3	Pietro's	40	8.1	19
128	Manhattan	Tudor City	4b2042fff964a5208f2f24e3	Pietro's	40	8.1	19
129	Manhattan	Stuyvesant Town	589a66b251666a5ffadde9ea	Fiaschetteria Pistoia	81	8.4	20
130	Manhattan	Stuyvesant Town	40f1d480f964a520680a1fe3	Hearth	582	8.7	208
131	Manhattan	Stuyvesant Town	49c6a988f964a5206e571fe3	Gnocco	199	8.1	93
132	Manhattan	Flatiron	4b741ab4f964a5202cc82de3	Novità Cucina Creativa	110	8.7	38
133	Manhattan	Flatiron	4a8c84daf964a520530e20e3	da Umberto	88	9.0	38
134	Manhattan	Flatiron	4afb2990f964a520a91b22e3	Maialino	1453	8.8	464
135	Manhattan	Hudson Yards	4dcae1b18877502200c95822	Sergimmo Salumeria	328	8.8	129

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
136	Manhattan	Hudson Yards	5633bec0498e430fc8ba8f3c	La Vela Dining & Bar	23	8.2	6
137	Manhattan	Hudson Yards	4d0122e21ebe6dcb3d918b91	Casa Nonna	201	8.0	79

In [90]: `italian_rest_stats_Queens.shape`

Out[90]: `(106, 7)`

In [91]:

italian_rest_stats_Queens

Out[91]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Queens	Astoria	5010b169e4b05edd9983ec7d	Antika Restaurant & Pizzeria	72	8.2	31
1	Queens	Astoria	4ebf0e380aaf6450ba608920	Via Trenta	57	7.7	28
2	Queens	Astoria	53a60a88498ef405d8a78217	VITE vinosteria	106	8.8	30
3	Queens	Woodside	4bc11e07920eb713d6491a2c	Donato's Restaurant	23	7.2	9
4	Queens	Jackson Heights	4a82d6adf964a5206ff91fe3	Uncle Peter's	42	8.9	11
5	Queens	Howard Beach	4bae3bd0f964a52009963be3	Brothers Ravioli	10	8.2	2
6	Queens	Howard Beach	4bafdb5df964a52086263ce3	Prima Pasta & Cafe	35	7.5	17
7	Queens	Howard Beach	4e6409451495676d566f10b5	Bruno Ristorante Italiano	29	8.7	7
8	Queens	Howard Beach	4ba148f5f964a5201da937e3	Roma View Catering	16	7.0	3
9	Queens	Corona	4b808501f964a5207b7930e3	Park Side	187	8.7	78
10	Queens	Corona	4ea2fc90cc2102b34d3d8dc7	Il Triangolo Ristorante	35	8.8	26
11	Queens	Corona	0	0	0	0.0	0
12	Queens	Forest Hills	4c8d2ce6f87e224bfb6d3b05	Tuscan Hills	46	8.0	15
13	Queens	Forest Hills	4ba0203af964a520105c37e3	Portofino Ristorante	58	7.6	38
14	Queens	Kew Gardens	4c93eb6a72dd224be41d9591	Paul Michael Brick Oven Cafe	16	7.1	14
15	Queens	Richmond Hill	4c93eb6a72dd224be41d9591	Paul Michael Brick Oven Cafe	16	7.1	14
16	Queens	Long Island City	5aa41faf178a2a08410ce198	Beebe's	53	8.5	11
17	Queens	Long Island City	53ed8f36498ea1eca81563c1	Il Falco	38	8.1	15
18	Queens	Sunnyside	555d29f7498eb6112f44ecac	SoleLuna	119	9.1	26
19	Queens	Sunnyside	4ce1741194c3b60c5dc776ea	Dazie's Restaurant	8	6.0	8
20	Queens	East Elmhurst	5480b6d4498e6e352f7a8d3e	Cotto	29	5.9	9
21	Queens	Maspeth	5c6183b006fb60002ca6572b	Patrizia's of Maspeth	6	7.4	2
22	Queens	Maspeth	513d152ee4b0d54ade774b14	Forno Pizzeria & Trattoria	20	7.4	12
23	Queens	Ridgewood	4b89b361f964a520074c32e3	Joe's Restaurant	33	8.0	15
24	Queens	Ridgewood	4c1e7c9e63750f47d5d3b967	Antica Trattoria	19	8.0	14
25	Queens	Ridgewood	4dcf12c8fa7664b7c6b91801	Trattoria Cerbone	4	7.0	6
26	Queens	Glendale	0	0	0	0.0	0
27	Queens	Rego Park	4c50f9ae9d642d7f357fc6dc	Avellino Ristorante & Pizzeria	28	8.5	13
28	Queens	Ozone Park	4cb21cebdb32f04db2a7cd4d	Aldo's Pizzeria & Restaurant	22	7.2	12
29	Queens	South Ozone Park	4ac7e812f964a5207fba20e3	Don Peppe	103	8.1	48
30	Queens	Whitestone	4ebc34954690a29fd6be2e82	Nonna's Pizzeria and Trattoria	8	7.1	4
31	Queens	Whitestone	4ba3d448f964a5200c6438e3	Il Nocello Ristorante	7	7.0	5
32	Queens	Whitestone	56071182498e48b25409f3b5	Liola Ristorante	6	6.9	4
33	Queens	Whitestone	4bc1f7b6461576b025907c32	Verdi's of Whitestone	12	5.8	4
34	Queens	Whitestone	4d290280342d6dcb91a7fec	Villaggio Ristorante	10	5.8	4
35	Queens	Bayside	4bb7ca5b1261d13a83e2e798	Papazzio Restaurant	22	7.9	13
36	Queens	Bayside	4d4e0113869cf04dd10ce4ae	Trattoria Thirty Five	33	7.1	29
37	Queens	Bayside	4b89d531f964a520f54f32e3	Jimmy's Trattoria	11	7.1	7
38	Queens	Auburndale	4b96ab2af964a520bfcd34e3	Durso's Pasta & Ravioli Company	27	8.1	15
39	Queens	Auburndale	4c0aeaa1340720a1fd5b8793	Primo Amore	6	5.9	2
40	Queens	Auburndale	0	0	0	0.0	0
41	Queens	Little Neck	4bc8f64c0687ef3bda0bd9cc	Aunt Bella's	9	7.9	3
42	Queens	Little Neck	4bae85bef964a52073bc3be3	Il Bacco	63	7.6	20
43	Queens	Little Neck	528ffa0b11d2ea463d2cd25c	Ponte Mollo	9	8.0	3

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
44	Queens	Little Neck	4bc0cad874a9a59398afd0f6	Il Sapore Pizza	6	7.3	4
45	Queens	Little Neck	4c1a9ed0b4e62d7fa119d893	La Grotta di Marcello	7	6.6	3
46	Queens	Little Neck	4bd23c50caff95215f71d2f0	Il Toscano	18	6.2	12
47	Queens	Douglaston	4bc8f64c0687ef3bda0bd9cc	Aunt Bella's	9	7.9	3
48	Queens	Douglaston	4bc0cad874a9a59398afd0f6	Il Sapore Pizza	6	7.3	4
49	Queens	Douglaston	4bae85bef964a52073bc3be3	Il Bacco	63	7.6	20
50	Queens	Douglaston	4c1a9ed0b4e62d7fa119d893	La Grotta di Marcello	7	6.6	3
51	Queens	Douglaston	4bd23c50caff95215f71d2f0	Il Toscano	18	6.2	12
52	Queens	Glen Oaks	4c450fae74ffc928328676cc	Luigi's Restaurant & Bar	79	8.4	34
53	Queens	Bellerose	4cf009ae7b94370446c43653	Trattoria Lucia	17	6.5	8
54	Queens	Bellerose	4d0ab4386aa05481d5f5e5aa	Arturo's Ristorante Italiano	6	5.9	1
55	Queens	Oakland Gardens	4c1e3a9f8b3aa593b4b49b5f	L'italiana Trattoria	7	7.5	14
56	Queens	Oakland Gardens	4b9c519ef964a520065f36e3	Villa Rustica Ristorante & Pizza	13	7.4	13
57	Queens	Steinway	5c087e308264440039684a37	Ninos Aq	9	8.2	5
58	Queens	Steinway	4afc64a8f964a520382222e3	Trattoria L'incontro	123	8.8	61
59	Queens	Steinway	4b494398f964a520d96b26e3	Porto Bello Pizza and Restaurant	59	8.2	21
60	Queens	Steinway	53a618d4498ea7107dabe020	Via Vai	32	8.2	10
61	Queens	Steinway	4b26d60cf964a520b58124e3	Ornella Trattoria Italiana	42	7.9	72
62	Queens	Beechhurst	4e22342252b1f82ffba73c1c	due ponti ristorante	7	6.8	9
63	Queens	Beechhurst	4ce9b1fcfe90a35d7bf2490e	The Clinton Restaurant	16	7.0	6
64	Queens	Beechhurst	4ba3d448f964a5200c6438e3	Il Nocello Ristorante	7	7.0	5
65	Queens	Beechhurst	4d290280342d6dcb91a7fec	Villagio Ristorante	10	5.8	4
66	Queens	Beechhurst	0	0	0	0.0	0
67	Queens	Bay Terrace	0	0	0	0.0	0
68	Queens	Neponsit	4bd0c0cecaff9521b878cff0	Plum Tomatoes	5	6.2	16
69	Queens	Floral Park	4c450fae74ffc928328676cc	Luigi's Restaurant & Bar	79	8.4	34
70	Queens	Hillcrest	4b368ed8f964a520f53725e3	Acquista Trattoria	34	8.0	28
71	Queens	Ravenswood	5b53e651005ac10039e41a58	Botte Bar	9	7.9	11
72	Queens	Ravenswood	53a60a88498ef405d8a78217	VITE vinosteria	106	8.8	30
73	Queens	Ravenswood	5aa41faf178a2a08410ce198	Beebe's	53	8.5	11
74	Queens	Ravenswood	49c68eaa9f964a5205c571fe3	Vesta Trattoria & Wine Bar	185	9.0	106
75	Queens	Ravenswood	4a86124ff964a5204e0020e3	Napoli Pizza & Pasta	48	7.7	34
76	Queens	Lindenwood	4e6409451495676d566f10b5	Bruno Ristorante Italiano	29	8.7	7
77	Queens	Lindenwood	4e4e429ebd4101d0d7a63105	Matteo's	29	6.8	10
78	Queens	Lefrak City	4c50f9ae9d642d7f357fc6dc	Avellino Ristorante & Pizzeria	28	8.5	13
79	Queens	Lefrak City	4ea2fc90cc2102b34d3d8dc7	Il Triangolo Ristorante	35	8.8	26
80	Queens	Belle Harbor	4bd0c0cecaff9521b878cff0	Plum Tomatoes	5	6.2	16
81	Queens	Rockaway Park	4bd0c0cecaff9521b878cff0	Plum Tomatoes	5	6.2	16
82	Queens	Bellaire	4bdcd7c462b2d7fd0b7113c	Cara Mia Restaurant	29	8.6	11
83	Queens	Bellaire	0	0	0	0.0	0
84	Queens	Forest Hills Gardens	4c8d2ce6f87e224bfb6d3b05	Tuscan Hills	46	8.0	15
85	Queens	Forest Hills Gardens	4ba0203af964a520105c37e3	Portofino Ristorante	58	7.6	38
86	Queens	Utopia	4b368ed8f964a520f53725e3	Acquista Trattoria	34	8.0	28
87	Queens	Pomonok	4bbb76328a0d95216761d930	Francesco's Pizzeria & Restaurant	6	5.8	4
88	Queens	Astoria Heights	4b494398f964a520d96b26e3	Porto Bello Pizza and Restaurant	59	8.2	21

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
89	Queens	Astoria Heights	4f048814f9ab88b0c268dda3	Antonio's Kitchen	15	6.9	12
90	Queens	Astoria Heights	4af4e590f964a52049f721e3	Forno Siciliano	12	7.0	11
91	Queens	Hunters Point	463220f3f964a520fb451fe3	Manetta's Ristorante	74	8.5	35
92	Queens	Hunters Point	4a1a3f6df964a5208b7a1fe3	Bella Via	64	8.1	36
93	Queens	Hunters Point	49f5bf5ef964a520b46b1fe3	Manducatis Rustica	70	8.3	38
94	Queens	Hunters Point	556fb3b4498e61f524e70951	Maiella	92	8.8	28
95	Queens	Hunters Point	4f74ff83e4b09b101271b89b	Manducatis	33	7.8	9
96	Queens	Hunters Point	540a3547498e9b339b6431ae	Le Fanfare	112	8.2	33
97	Queens	Hunters Point	53ed8f36498ea1eca81563c1	Il Falco	38	8.1	15
98	Queens	Sunnyside Gardens	555d29f7498eb6112f44ecac	SoleLuna	119	9.1	26
99	Queens	Sunnyside Gardens	4bc11e07920eb713d6491a2c	Donato's Restaurant	23	7.2	9
100	Queens	Sunnyside Gardens	4c0d4e92b1b676b07c63e086	Rocco's Italian Sauage / Cheese Steaks / Break...	21	7.3	15
101	Queens	Middle Village	53989edf498e85ce86d65ea2	Villa Erasmo	16	8.2	4
102	Queens	Malba	56071182498e48b25409f3b5	Liola Ristorante	6	6.9	4
103	Queens	Queensbridge	5aa41faf178a2a08410ce198	Beebe's	53	8.5	11
104	Queens	Queensbridge	53ed8f36498ea1eca81563c1	Il Falco	38	8.1	15
105	Queens	Queensbridge	57a13096498e42182b7df641	Oro Restaurant and Lounge	8	6.5	4

In [92]: `italian_rest_stats_Staten_Island.shape`

Out[92]: `(104, 7)`

In [93]:

italian_rest_stats Staten_Island

Out[93]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Staten Island	St. George	0	0	0	0	0
1	Staten Island	St. George	4a271f0cf964a5205c911fe3	Enoteca Maria	92	7.6	40
2	Staten Island	St. George	4b76d8dbf964a520be632ee3	Pier 76 Italian Restaurant	79	7.9	44
3	Staten Island	New Brighton	590928301de7651d663ae087	Marie's 2	9	8.1	2
4	Staten Island	New Brighton	4b76d8dbf964a520be632ee3	Pier 76 Italian Restaurant	79	7.9	44
5	Staten Island	New Brighton	4a271f0cf964a5205c911fe3	Enoteca Maria	92	7.6	40
6	Staten Island	Rosebank	4bcc8e3bb6c49c7422ed9391	Tony's Brick Oven Pizzeria	18	8.3	18
7	Staten Island	Rosebank	4e179bdc52b123a586ceea11	Bin 5	19	8.2	7
8	Staten Island	Rosebank	4bbb8986e452952190d154a4	Da Noi Fingerboard	20	7.4	6
9	Staten Island	Rosebank	0	0	0	0	0
10	Staten Island	West Brighton	4b5b58dbf964a5208f628e3	Panini Grill	22	8.4	1136
11	Staten Island	West Brighton	4bf872974a67c928b57725cf	Cafe Milano	19	8	6
12	Staten Island	West Brighton	4b6b0b96f964a52001ef2be3	Pastosa's	13	7.7	6
13	Staten Island	Mariner's Harbor	4d51deac3062a1cd37786ba3	Bella Mama Rose Italian Restaurant	6	6.6	10
14	Staten Island	Castleton Corners	4b9a599af964a5201aae35e3	Cucina Mia	5	7.1	3
15	Staten Island	Castleton Corners	4e35b9daaeb7f67fbd346ef9	Waterfalls	7	5.9	25
16	Staten Island	Travis	4ad910d8f964a520b81721e3	Da Noi Restaraunt	13	7.9	6
17	Staten Island	New Dorp	4b343839f964a5203a2625e3	La Strada	24	8.4	10
18	Staten Island	New Dorp	4be61580d4f7c9b6fe662620	Brioso	22	7.6	15
19	Staten Island	New Dorp	4bc73ff96501c9b696063e29	Little Italy Gourmet	12	7.5	6
20	Staten Island	New Dorp	4b9fb541f964a520fd3637e3	La Fontana Restaurant	16	6.9	8
21	Staten Island	New Dorp	0	0	0	0	0
22	Staten Island	Great Kills	517dbe77e4b0eef580c875a3	Piccolino's italian Restaurant	13	7.9	2
23	Staten Island	Great Kills	5182ef83498e59069ff5e71b	Patrizia's Pizza and Pasta	59	8	190
24	Staten Island	Great Kills	4d4b4295ad4a6ea89135f9e9	Fiore Di Mare	6	8.5	5
25	Staten Island	Great Kills	4cb8efaa90c9a143a5e183d6	Benvenuti Pizzeria e Trattoria	3	5.8	9
26	Staten Island	Great Kills	0	0	0	0	0
27	Staten Island	Great Kills	0	0	0	0	0
28	Staten Island	Eltingville	4c4a44f9bad7a593ee641daa	Giovannis Trattoria	10	7.4	4
29	Staten Island	Eltingville	5182ef83498e59069ff5e71b	Patrizia's Pizza and Pasta	59	8	190
30	Staten Island	Eltingville	0	0	0	0	0
31	Staten Island	Woodrow	0	0	0	0	0
32	Staten Island	Tottenville	4bf08bf117880f47a3782937	Angelina's Ristorante	37	8.3	23
33	Staten Island	Tottenville	59fc9f85f193c02897fc2369	Deluca's Italian Restaurant	8	7.6	2
34	Staten Island	Tottenville	537e9b77498e6816a1f38ca6	Dinico of mulberry	5	6.3	1
35	Staten Island	Tompkinsville	4b76d8dbf964a520be632ee3	Pier 76 Italian Restaurant	79	7.9	44
36	Staten Island	Tompkinsville	590928301de7651d663ae087	Marie's 2	9	8.1	2
37	Staten Island	Tompkinsville	4a271f0cf964a5205c911fe3	Enoteca Maria	92	7.6	40
38	Staten Island	Westerleigh	4b8a719df964a520016d32e3	Jimmy Max	49	8.1	15
39	Staten Island	Arrochar	4bddbdea587b2d7fc5e25409	Basilio's Inn	17	7.3	4
40	Staten Island	Arrochar	4c2546d5a852c928e5a2e46c	Italianissimo	14	7	7
41	Staten Island	Grasmere	4b803abff964a520cd5e30e3	Nino's	21	8.2	9
42	Staten Island	Grasmere	4be73347d4f7c9b66c992720	Bocelli	35	7.6	13
43	Staten Island	Grasmere	4b9bdbd8f964a5201e2e36e3	Cafe Luna	14	7.2	7

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
44	Staten Island	Grasmere	0	0	0	0	0
45	Staten Island	Old Town	4bcf46d4a8b3a593fae6615f	Pastosa Ravioli	32	9.1	8
46	Staten Island	Old Town	4be73347d4f7c9b66c992720	Bocelli	35	7.6	13
47	Staten Island	Old Town	4303cf80f964a5201c271fe3	Trattoria Romana	60	7.7	17
48	Staten Island	Old Town	4b803abff964a520cd5e30e3	Nino's	21	8.2	9
49	Staten Island	Old Town	4b9bdbd8f964a5201e2e36e3	Cafe Luna	14	7.2	7
50	Staten Island	Old Town	4daa28bd93a04642f079c973	Cielo Ristorante	12	7	3
51	Staten Island	Old Town	4af72d60f964a520ce0622e3	Pasticceria Bruno	39	7.5	23
52	Staten Island	Dongan Hills	4ba80534f964a520f6c639e3	Max's Es-Ca	27	8.8	174
53	Staten Island	Dongan Hills	54e13989498ed2a42c122b0f	Mario's	17	7.9	9
54	Staten Island	Dongan Hills	4af72d60f964a520ce0622e3	Pasticceria Bruno	39	7.5	23
55	Staten Island	Dongan Hills	4303cf80f964a5201c271fe3	Trattoria Romana	60	7.7	17
56	Staten Island	Dongan Hills	53e3fedd498ed822e0283349	Michael's Meatballs & Martinis	22	7.1	8
57	Staten Island	Dongan Hills	4daa28bd93a04642f079c973	Cielo Ristorante	12	7	3
58	Staten Island	Dongan Hills	0	0	0	0	0
59	Staten Island	Grant City	4d7acef35462b60c7c97cbd8	Cucina Fresca	5	8	5
60	Staten Island	Grant City	4b343839f964a5203a2625e3	La Strada	24	8.4	10
61	Staten Island	Grant City	4be61580d4f7c9b6fe662620	Brioso	22	7.6	15
62	Staten Island	Grant City	4bc73ff96501c9b696063e29	Little Italy Gourmet	12	7.5	6
63	Staten Island	New Dorp Beach	0	0	0	0	0
64	Staten Island	Bay Terrace	517dbe77e4b0eef580c875a3	Piccolino's italian Restaurant	13	7.9	2
65	Staten Island	Bay Terrace	0	0	0	0	0
66	Staten Island	Bay Terrace	0	0	0	0	0
67	Staten Island	Bay Terrace	4cb8efaa90c9a143a5e183d6	Benvenuti Pizzeria e Trattoria	3	5.8	9
68	Staten Island	Bay Terrace	0	0	0	0	0
69	Staten Island	Huguenot	0	0	0	0	0
70	Staten Island	Charleston	4ba6706af964a520875239e3	Nucci's	29	7.6	7
71	Staten Island	Charleston	4f5b584da17c35d95157d1ec	Zio Toto - Staten Island	14	7.2	8
72	Staten Island	Charleston	0	0	0	0	0
73	Staten Island	Charleston	0	0	0	0	0
74	Staten Island	Arden Heights	50189ccee4b0d35e6d8774f8	Villa Monte's	11	6.6	5
75	Staten Island	Greenridge	4c364d5f93db0f4754d81d92	All Star Cafe	5	7.5	4
76	Staten Island	Chelsea	4ad910d8f964a520b81721e3	Da Noi Restaraunt	13	7.9	6
77	Staten Island	Bulls Head	0	0	0	0	0
78	Staten Island	Bulls Head	4bfaf5c9ab180f477f32b3ce	Cafe del Mondo	10	5.5	6
79	Staten Island	Richmond Town	5079ccdce4b065f1dd8155ad	Casa verde	8	7.8	3
80	Staten Island	Richmond Town	0	0	0	0	0
81	Staten Island	Richmond Town	4b9fb541f964a520fd3637e3	La Fontana Restaurant	16	6.9	8
82	Staten Island	Shore Acres	4e179bdc52b123a586ceea11	Bin 5	19	8.2	7
83	Staten Island	Shore Acres	4bcc8e3bb6c49c7422ed9391	Tony's Brick Oven Pizzeria	18	8.3	18
84	Staten Island	Shore Acres	4bbb8986e452952190d154a4	Da Noi Fingerboard	20	7.4	6
85	Staten Island	Shore Acres	0	0	0	0	0
86	Staten Island	Clifton	4bcc8e3bb6c49c7422ed9391	Tony's Brick Oven Pizzeria	18	8.3	18
87	Staten Island	Clifton	4e179bdc52b123a586ceea11	Bin 5	19	8.2	7
88	Staten Island	Concord	4bcf46d4a8b3a593fae6615f	Pastosa Ravioli	32	9.1	8
89	Staten Island	Concord	4b803abff964a520cd5e30e3	Nino's	21	8.2	9

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
90	Staten Island	Concord	4be73347d4f7c9b66c992720	Bocelli	35	7.6	13
91	Staten Island	Concord	4b9bdb8f964a5201e2e36e3	Cafe Luna	14	7.2	7
92	Staten Island	Emerson Hill	4bcf46d4a8b3a593fae6615f	Pastosa Ravioli	32	9.1	8
93	Staten Island	Randall Manor	4bf872974a67c928b57725cf	Cafe Milano	19	8	6
94	Staten Island	Elm Park	4d51deac3062a1cd37786ba3	Bella Mama Rose Italian Restaurant	6	6.6	10
95	Staten Island	Willowbrook	4e35b9daeb7f67bd346ef9	Waterfalls	7	5.9	25
96	Staten Island	Sandy Ground	0	0	0	0	0
97	Staten Island	Egbertville	4c27cc8f3492a593cb72b628	Classic Pizza	7	7.7	2
98	Staten Island	Prince's Bay	0	0	0	0	0
99	Staten Island	Lighthouse Hill	5079ccdc4b065f1dd8155ad	Casa verde	8	7.8	3
100	Staten Island	Lighthouse Hill	4c27cc8f3492a593cb72b628	Classic Pizza	7	7.7	2
101	Staten Island	Richmond Valley	4f5b584da17c35d95157d1ec	Zio Toto - Staten Island	14	7.2	8
102	Staten Island	Richmond Valley	4ba6706af964a520875239e3	Nucci's	29	7.6	7
103	Staten Island	Richmond Valley	0	0	0	0	0

In [94]: `italian_rest_stats_ny.shape`

Out[94]: (548, 7)

Save the Restaurants data in a csv file

In [95]: `italian_rest_stats_ny.to_csv('italian_rest_stats_ny.csv', index=False)`

In [96]: `# verify the data in csv
italian_rest_stats_ny_csv=pd.read_csv('italian_rest_stats_ny.csv')`

In [97]: `italian_rest_stats_ny_csv.shape`

Out[97]: (548, 7)

In [98]: `italian_rest_stats_ny_csv.head()`

Out[98]:

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Bronx	Riverdale	55aaee4d498e3cbb70e625d6	Bella Notte Pizzeria	9	7.1	4
1	Bronx	Kingsbridge	55aaee4d498e3cbb70e625d6	Bella Notte Pizzeria	9	7.1	4
2	Bronx	Woodlawn	511edb6de4b0d58346fd272d	Patrizia's Of Woodlawn	18	8.4	14
3	Bronx	Woodlawn	4d3cb3026b3d236a066a6364	Rivers Edge	10	6.7	8
4	Bronx	Baychester	4c9518076b35a143d5dc21dc	Fratelli's	22	8.6	6

In [99]: `italian_rest_stats_ny.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 548 entries, 0 to 547
Data columns (total 7 columns):
#   Column          Non-Null Count  Dtype
---  -
0   Borough         548 non-null    object
1   Neighborhood     548 non-null    object
2   ID              548 non-null    object
3   Name            548 non-null    object
4   Likes           548 non-null    object
5   Rating          548 non-null    object
6   Tips            548 non-null    object
dtypes: object(7)
memory usage: 30.1+ KB
```

Convert the data type of Likes and Tips to Float

```
In [100]: # convert Likes to float
italian_rest_stats_ny['Likes']=italian_rest_stats_ny['Likes'].astype('float64')

In [101]: # convert Tips to float
italian_rest_stats_ny['Tips']=italian_rest_stats_ny['Tips'].astype('float64')

In [109]: # convert Rating to float
italian_rest_stats_ny['Rating']=italian_rest_stats_ny['Rating'].astype('float64')

In [110]: italian_rest_stats_ny.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 548 entries, 0 to 547
Data columns (total 7 columns):
#   Column          Non-Null Count  Dtype
---  ---
0   Borough         548 non-null   object
1   Neighborhood     548 non-null   object
2   ID              548 non-null   object
3   Name            548 non-null   object
4   Likes           548 non-null   float64
5   Rating          548 non-null   float64
6   Tips            548 non-null   float64
dtypes: float64(3), object(4)
memory usage: 30.1+ KB
```

Restaurant with maximum Likes

```
In [111]: italian_rest_stats_ny.iloc[italian_rest_stats_ny['Likes'].idxmax()]

Out[111]: Borough                Manhattan
Neighborhood          Greenwich Village
ID              4cc6222106c25481d7a4a047
Name              Rubirosa Ristorante
Likes                2491
Rating              9.2
Tips                825
Name: 254, dtype: object
```

Restaurant with maximum Rating

```
In [112]: italian_rest_stats_ny.iloc[italian_rest_stats_ny['Rating'].idxmax()]

Out[112]: Borough                Brooklyn
Neighborhood          Bushwick
ID              5a98aed16a59506d7a60d67c
Name              Carmenta's
Likes                58
Rating              9.4
Tips                21
Name: 112, dtype: object
```

Restaurant with maximum Tips

```
In [113]: italian_rest_stats.ny.iloc[italian_rest_stats.ny['Tips'].idxmax()]
```

```
Out[113]: Borough          Staten Island
Neighborhood      West Brighton
ID              4b5b58dbf964a52088f628e3
Name              Panini Grill
Likes              22
Rating             8.4
Tips              1136
Name: 454, dtype: object
```

Top 10 NYC neighborhoods with highly rated Italian Restaurants

```
In [115]: ny_neighborhood_stats=italian_rest_stats.ny.groupby('Neighborhood',as_index=False).mean()[['Neighborhood',
ny_neighborhood_stats.columns=['Neighborhood','Average Rating']
```

```
In [116]: ny_neighborhood_stats.sort_values(['Average Rating'],ascending=False).head(10)
```

```
Out[116]:
```

	Neighborhood	Average Rating
45	Downtown	9.100000
19	Boerum Hill	9.100000
56	Emerson Hill	9.100000
23	Bushwick	9.050000
77	Greenpoint	9.000000
27	Central Harlem	9.000000
151	Soho	8.985714
79	Greenwich Village	8.981818
176	West Village	8.910000
87	Jackson Heights	8.900000

Average Rating of Italian Restaurants in the 5 NYC Boroughs

```
In [117]: ny_borough_stats=italian_rest_stats.ny.groupby('Borough',as_index=False).mean()[['Borough','Rating']]
ny_borough_stats.columns=['Borough','Average Rating']
```

```
In [118]: ny_borough_stats.sort_values(['Average Rating'],ascending=False)
```

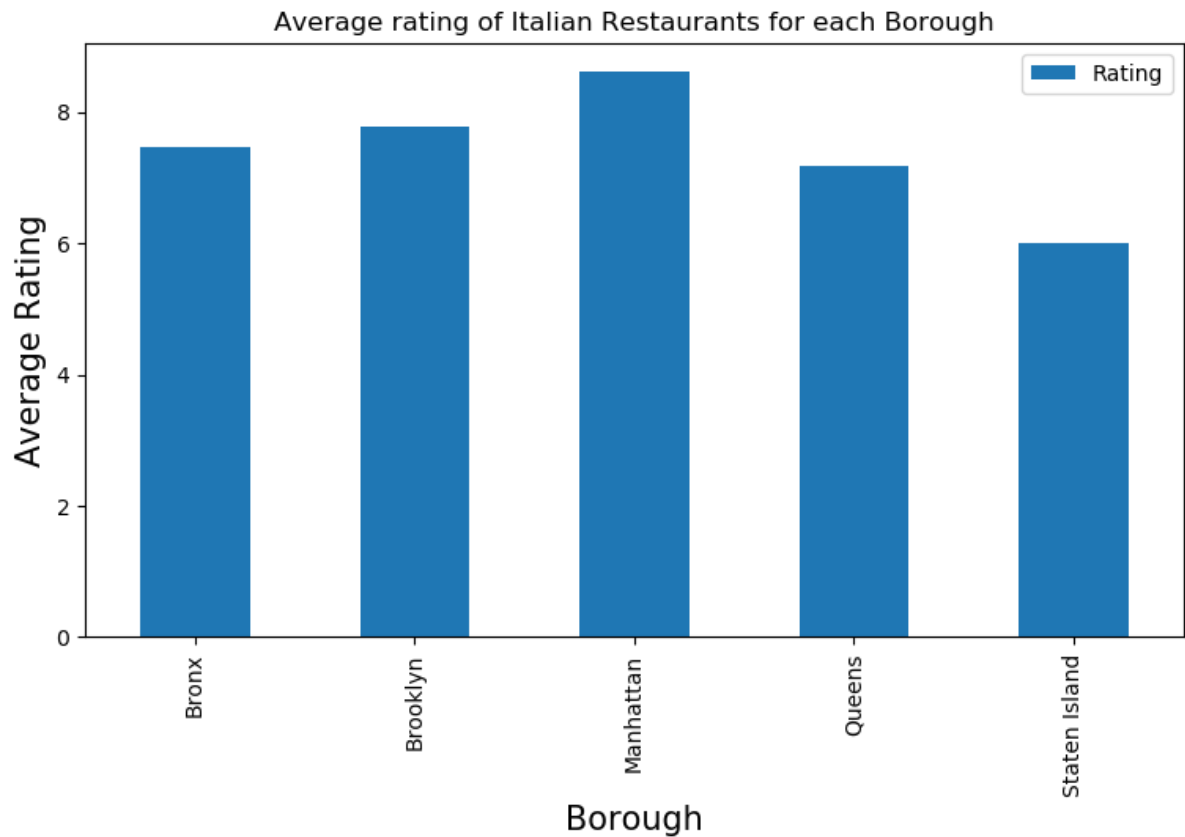
```
Out[118]:
```

	Borough	Average Rating
2	Manhattan	8.614493
1	Brooklyn	7.774561
0	Bronx	7.460465
3	Queens	7.166038
4	Staten Island	6.003846

Plot the Average rating of Italian Restaurants by Borough

In [119]:

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



Get the list of NYC neighborhoods with an Average rating of 8.5 or higher

In [120]:

```
ny_neighborhood_stats=ny_neighborhood_stats[ny_neighborhood_stats['Average Rating']>=8.5]
```


In [121]:

ny_neighborhood_stats

Out[121]:

	Neighborhood	Average Rating
19	Boerum Hill	9.100000
21	Brooklyn Heights	8.725000
23	Bushwick	9.050000
24	Carnegie Hill	8.566667
27	Central Harlem	9.000000
31	Civic Center	8.733333
34	Clinton Hill	8.750000
35	Cobble Hill	8.533333
45	Downtown	9.100000
46	Dumbo	8.500000
50	East Village	8.650000
51	East Williamsburg	8.666667
56	Emerson Hill	9.100000
59	Flatiron	8.833333
64	Fort Greene	8.900000
66	Fulton Ferry	8.500000
72	Gramercy	8.575000
77	Greenpoint	9.000000
79	Greenwich Village	8.981818
80	Hamilton Heights	8.850000
87	Jackson Heights	8.900000
90	Lefrak City	8.650000
91	Lenox Hill	8.516667
95	Little Italy	8.900000
98	Lower East Side	8.733333
102	Manhattan Valley	8.500000
119	Noho	8.883333
121	North Side	8.850000
126	Park Slope	8.900000
128	Pelham Gardens	8.600000
137	Rego Park	8.500000
151	Soho	8.985714
161	Sutton Place	8.500000
166	Tribeca	8.625000
169	Upper East Side	8.600000
173	Vinegar Hill	8.500000
174	Washington Heights	8.700000
176	West Village	8.910000
186	Yorkville	8.650000

In [122]:

ny_neighborhood_stats.shape

Out[122]:

(39, 2)

Total of 39 Italian Restaurants with an average rating of 8.5 or higher

```
In [123]: ny_neighborhood_stats=pd.merge(ny_neighborhood_stats,new_york_data, on='Neighborhood')
```

Merge the Neighborhoods geospatial data with the ratings data

```
In [124]: ny_neighborhood_stats
```

```
Out[124]:
```

	Neighborhood	Average Rating	Borough	Latitude	Longitude
0	Boerum Hill	9.100000	Brooklyn	40.685683	-73.983748
1	Brooklyn Heights	8.725000	Brooklyn	40.695864	-73.993782
2	Bushwick	9.050000	Brooklyn	40.698116	-73.925258
3	Carnegie Hill	8.566667	Manhattan	40.782683	-73.953256
4	Central Harlem	9.000000	Manhattan	40.815976	-73.943211
5	Civic Center	8.733333	Manhattan	40.715229	-74.005415
6	Clinton Hill	8.750000	Brooklyn	40.693229	-73.967843
7	Cobble Hill	8.533333	Brooklyn	40.687920	-73.998561
8	Downtown	9.100000	Brooklyn	40.690844	-73.983463
9	Dumbo	8.500000	Brooklyn	40.703176	-73.988753
10	East Village	8.650000	Manhattan	40.727847	-73.982226
11	East Williamsburg	8.666667	Brooklyn	40.708492	-73.938858
12	Emerson Hill	9.100000	Staten Island	40.606794	-74.097762
13	Flatiron	8.833333	Manhattan	40.739673	-73.990947
14	Fort Greene	8.900000	Brooklyn	40.688527	-73.972906
15	Fulton Ferry	8.500000	Brooklyn	40.703281	-73.995508
16	Gramercy	8.575000	Manhattan	40.737210	-73.981376
17	Greenpoint	9.000000	Brooklyn	40.730201	-73.954241
18	Greenwich Village	8.981818	Manhattan	40.726933	-73.999914
19	Hamilton Heights	8.850000	Manhattan	40.823604	-73.949688
20	Jackson Heights	8.900000	Queens	40.751981	-73.882821
21	Lefrak City	8.650000	Queens	40.736075	-73.862525
22	Lenox Hill	8.516667	Manhattan	40.768113	-73.958860
23	Little Italy	8.900000	Manhattan	40.719324	-73.997305
24	Lower East Side	8.733333	Manhattan	40.717807	-73.980890
25	Manhattan Valley	8.500000	Manhattan	40.797307	-73.964286
26	Noho	8.883333	Manhattan	40.723259	-73.988434
27	North Side	8.850000	Brooklyn	40.714823	-73.958809
28	Park Slope	8.900000	Brooklyn	40.672321	-73.977050
29	Pelham Gardens	8.600000	Bronx	40.862966	-73.841612
30	Rego Park	8.500000	Queens	40.728974	-73.857827
31	Soho	8.985714	Manhattan	40.722184	-74.000657
32	Sutton Place	8.500000	Manhattan	40.760280	-73.963556
33	Tribeca	8.625000	Manhattan	40.721522	-74.010683
34	Upper East Side	8.600000	Manhattan	40.775639	-73.960508
35	Vinegar Hill	8.500000	Brooklyn	40.703321	-73.981116
36	Washington Heights	8.700000	Manhattan	40.851903	-73.936900
37	West Village	8.910000	Manhattan	40.734434	-74.006180
38	Yorkville	8.650000	Manhattan	40.775930	-73.947118

In [125]: `ny_neighborhood_stats.shape`

Out[125]: `(39, 5)`

In [126]: `ny_neighborhood_stats=ny_neighborhood_stats[['Borough','Neighborhood','Latitude','Longitude','Average`

```
In [127]: ny_neighborhood_stats.sort_values(by=['Average Rating'], ascending=False, inplace=True)
ny_neighborhood_stats
```

```
Out[127]:
```

	Borough	Neighborhood	Latitude	Longitude	Average Rating
0	Brooklyn	Boerum Hill	40.685683	-73.983748	9.100000
8	Brooklyn	Downtown	40.690844	-73.983463	9.100000
12	Staten Island	Emerson Hill	40.606794	-74.097762	9.100000
2	Brooklyn	Bushwick	40.698116	-73.925258	9.050000
17	Brooklyn	Greenpoint	40.730201	-73.954241	9.000000
4	Manhattan	Central Harlem	40.815976	-73.943211	9.000000
31	Manhattan	Soho	40.722184	-74.000657	8.985714
18	Manhattan	Greenwich Village	40.726933	-73.999914	8.981818
37	Manhattan	West Village	40.734434	-74.006180	8.910000
28	Brooklyn	Park Slope	40.672321	-73.977050	8.900000
20	Queens	Jackson Heights	40.751981	-73.882821	8.900000
14	Brooklyn	Fort Greene	40.688527	-73.972906	8.900000
23	Manhattan	Little Italy	40.719324	-73.997305	8.900000
26	Manhattan	Noho	40.723259	-73.988434	8.883333
27	Brooklyn	North Side	40.714823	-73.958809	8.850000
19	Manhattan	Hamilton Heights	40.823604	-73.949688	8.850000
13	Manhattan	Flatiron	40.739673	-73.990947	8.833333
6	Brooklyn	Clinton Hill	40.693229	-73.967843	8.750000
24	Manhattan	Lower East Side	40.717807	-73.980890	8.733333
5	Manhattan	Civic Center	40.715229	-74.005415	8.733333
1	Brooklyn	Brooklyn Heights	40.695864	-73.993782	8.725000
36	Manhattan	Washington Heights	40.851903	-73.936900	8.700000
11	Brooklyn	East Williamsburg	40.708492	-73.938858	8.666667
38	Manhattan	Yorkville	40.775930	-73.947118	8.650000
21	Queens	Lefrak City	40.736075	-73.862525	8.650000
10	Manhattan	East Village	40.727847	-73.982226	8.650000
33	Manhattan	Tribeca	40.721522	-74.010683	8.625000
29	Bronx	Pelham Gardens	40.862966	-73.841612	8.600000
34	Manhattan	Upper East Side	40.775639	-73.960508	8.600000
16	Manhattan	Gramercy	40.737210	-73.981376	8.575000
3	Manhattan	Carnegie Hill	40.782683	-73.953256	8.566667
7	Brooklyn	Cobble Hill	40.687920	-73.998561	8.533333
22	Manhattan	Lenox Hill	40.768113	-73.958860	8.516667
30	Queens	Rego Park	40.728974	-73.857827	8.500000
15	Brooklyn	Fulton Ferry	40.703281	-73.995508	8.500000
32	Manhattan	Sutton Place	40.760280	-73.963556	8.500000
9	Brooklyn	Dumbo	40.703176	-73.988753	8.500000
25	Manhattan	Manhattan Valley	40.797307	-73.964286	8.500000
35	Brooklyn	Vinegar Hill	40.703321	-73.981116	8.500000

Create a map and display the restaurants neighborhoods

```
In [128]: ny_map = folium.Map(location=geo_location('New York'), zoom_start=12)
```

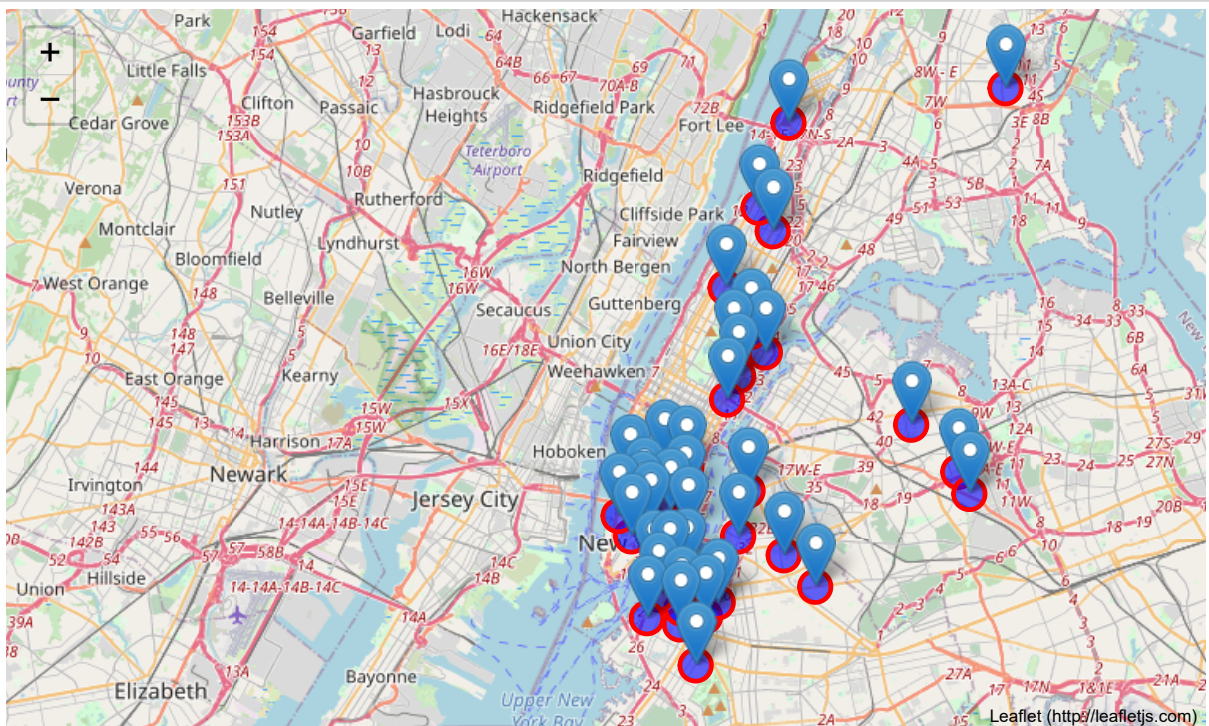
```
In [129]: # instantiate a feature group for the restaurants in the dataframe
restaurants = folium.map.FeatureGroup()

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

```
In [130]: ny_neighborhood_stats['Label']=ny_neighborhood_stats['Neighborhood']+', '+ny_neighborhood_stats['Borough']
```

```
In [131]: # 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 restaurants to map
ny_map.add_child(restaurants)
```

Out[131]:



Visualize the Boroughs based on average Rating using a Choropleth Map

```

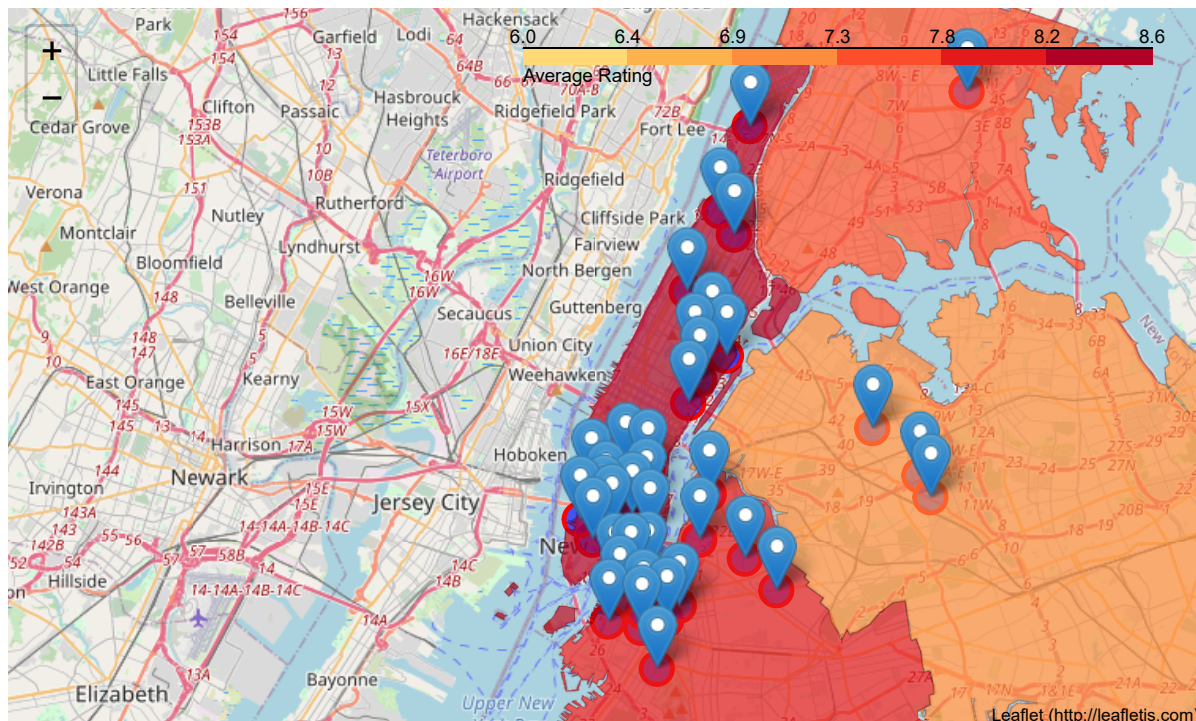
In [132]: ny_geo = r'Borough Boundaries.geojson'

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')
ny_map

```

Out[132]:



Visit https://nbviewer.jupyter.org/github/pcomandur/Coursera-Capstone-Project/blob/master/The_Battle_of_NYC_Neighborhoods.ipynb (https://nbviewer.jupyter.org/github/pcomandur/Coursera-Capstone-Project/blob/master/The_Battle_of_NYC_Neighborhoods.ipynb) to view the Notebook with Maps

Conclusion

In []:

Nearly 550 Italian restaurants have been identified, dotted across all 5 Boroughs. Whilst Manhattan bc there's a fairly even spread of restaurants amongst all the Boroughs.

Borough	No. of Italian Restaurants
Manhattan	138
Brooklyn	114
Queens	106
Staten Island	104
Bronx	86

In terms of Neighborhoods, the following have the most number of Italian Restaurants **and** can be consid **while in NYC**

Neighborhood	Number of Italian Restaurants
Belmont	15
Greenwich Village	11
Fordham	10
West Village	10
Carroll Gardens	7
Old Town	7
Upper East Side	7
Dongan Hills	7
Hunters Point	7
Soho	7

Neighborhoods that have the most highly rated (Rating >=9) Italian Restaurants are

Neighborhood	Average Rating of Italian Restaurants
Downtown	9.10
Boerum Hill	9.10
Emerson Hill	9.10
Bushwick	9.05
Central Harlem	9.00
Greenpoint	9.00

Manhattan has the highest average rating of Italian Restaurants **and** Staten Island has the least averag

Borough	Average Rating
Manhattan	8.61
Brooklyn	7.77
Bronx	7.46
Queens	7.17
Staten Island	6.00

This indicates that opening up a high quality Italian Restaurant **in** Staten Island could be a good busi

Limitations

The ranking of Italian Restaurants **is** solely based on the users rating **in** FourSquare
The accuracy of the analysis depends on the data provided by FourSquare

In []: