

# Capstone

May 24, 2020

```
[5]: !conda install -c conda-forge folium=0.5.0 --yes
```

```
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-1.0.3	py36h830a2c2_1	11.1 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:		13.0 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-2.9-py_1
importlib_metadata conda-forge/noarch::importlib_metadata-1.6.0-0
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-1.0.3-py36h830a2c2_1
pyopenssl         conda-forge/noarch::pyopenssl-19.1.0-py_1
pyrsistent        conda-forge/linux-64::pyrsistent-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-2.23.0-pyh8c360ce_2
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%
pandas-1.0.3       | 11.1 MB    | ##### | 100%
altair-4.1.0       | 614 KB     | ##### | 100%
vincent-0.4.4      | 28 KB      | ##### | 100%

```

Preparing transaction: done

Verifying transaction: done

Executing transaction: done

```
[6]: !conda install -c conda-forge geopy --yes
```

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-1.22.0	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-1.22.0-pyh9f0ad1d_0

Downloading and Extracting Packages

geopy-1.22.0	63 KB	#####   100%
geographiclib-1.50	34 KB	#####   100%

Preparing transaction: done  
Verifying transaction: done  
Executing transaction: done

## 0.1 Import the libs

```
[8]: 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

#!pip install geopy
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
#!pip install -U scikit-learn scipy matplotlib
from sklearn.cluster import KMeans

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

print('Libraries imported.')

```

Libraries imported.

Now we define a function to get the geocodes i.e latitude and longitude of a given location using geopy.

```

[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

```

We define a function to interact with FourSquare API and get top 100 venues within a radius of 1000 metres for a given latitude and longitude. Below function will return us the venue id , venue name and category.

```

[26]: def get_venues(lat, lng):

    #set variables
    radius=500
    LIMIT=10
    CLIENT_ID = 'OxJKHYRTY4LRGIZTIXIHJMIUONYXI2SDZIG4OUMZQBK21LOL' # your
↳ Foursquare ID
    CLIENT_SECRET = 'MBX42WGUOATSEJZBUR2NRCRBDY3DCRFTITHONMAYNSI3FQ2M' # your
↳ Foursquare Secret
    VERSION = '20200401' # Foursquare API version

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

```

```

# get all the data
results = requests.get(url).json()
try:
    venue_data=results["response"]["groups"][0]['items']
    venue_details=[]
except:
    return
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

```

Now we will define a function to get venue details like like count , rating , tip counts for a given venue id. This will be used for ranking.

```

[11]: def get_venue_details(venue_id):

    CLIENT_ID = 'OXJKHYRTY4LRGIZTIXIHJMIUONYXI2SDZIG40UMZQBK21LOL' # your
    ↪Foursquare ID
    CLIENT_SECRET = 'MBX42WGUOATSEJZBUR2NRCRBDY3DCRFTITHONMAYNSI3FQ2M' # your
    ↪Foursquare Secret
    VERSION = '20200401' # Foursquare API version

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

    # get all the data
    results = requests.get(url).json()
    venue_data=results['response']['venue']
    venue_details=[]
    try:
        venue_id=venue_data['id']
        venue_name=venue_data['name']

```

```

venue_likes=venue_data['likes']['count']
venue_rating=venue_data['rating']
venue_tips=venue_data['tips']['count']
venue_details.
→append([venue_id,venue_name,venue_likes,venue_rating,venue_tips])
except KeyError:
    print("error")
    pass

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

```

Now we define a function to get the new york city data such as Boroughs, Neighborhoods along with their latitude and longitude.

```

[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

```

We will call the above function to get the new york city data.

```

[13]: new_york_data=get_new_york_data()
new_york_data.head()

```

```
[13]: 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
```

```
[14]: new_york_data.shape
```

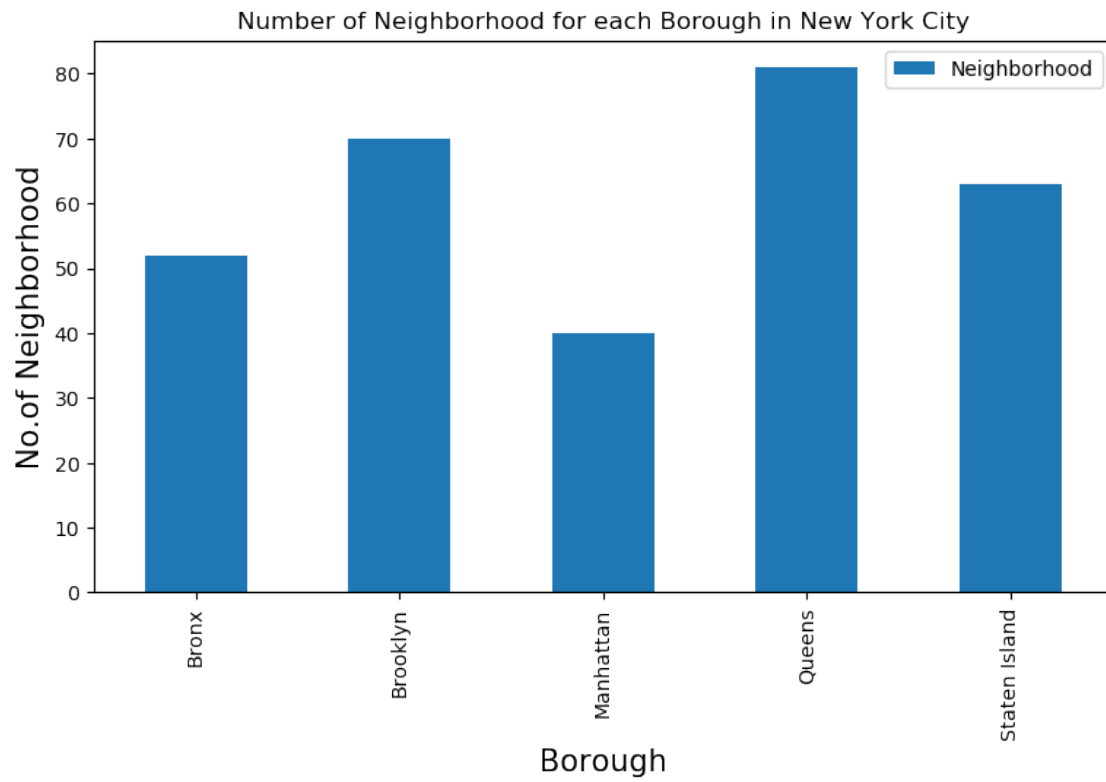
```
[14]: (306, 4)
```

**0.1.1 The above result shows that there are 306 different Neighborhoods in New York.**

Now let create a BAR PLOT to show different Neighborhoods in New York.

```
[15]: import matplotlib.pyplot as plt

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



0.2 Next we will collect museums for each Neighborhood.



```
[27]: # prepare neighborhood list that contains museums
column_names=['Borough', 'Neighborhood', 'ID','Name']
Chinese_food_ny=pd.DataFrame(columns=column_names)
count=1

for row in new_york_data.values.tolist():
    Borough, Neighborhood, Latitude, Longitude=row
    venues = get_venues(Latitude,Longitude)
    Chinese_food=venues[venues['Category']=='Chinese Restaurant']

    print('(',count, '/',len(new_york_data),')','Chinese food in_
→'+Neighborhood+', '+ Borough+' :'+str(len(Chinese_food)))
    for Chinese_food_detail in Chinese_food.values.tolist():
        id, name , category = Chinese_food_detail
        Chinese_food_ny = Chinese_food_ny.append({'Borough': Borough,
                                                    'Neighborhood': Neighborhood,
                                                    'ID': id,
                                                    'Name' : name
                                                    }, ignore_index=True)

    count+=1
```

```
( 1 / 306 ) Chinese food in Wakefield, Bronx:0
( 2 / 306 ) Chinese food in Co-op City, Bronx:0
( 3 / 306 ) Chinese food in Eastchester, Bronx:0
( 4 / 306 ) Chinese food in Fieldston, Bronx:0
( 5 / 306 ) Chinese food in Riverdale, Bronx:0
( 6 / 306 ) Chinese food in Kingsbridge, Bronx:0
( 7 / 306 ) Chinese food in Marble Hill, Manhattan:0
( 8 / 306 ) Chinese food in Woodlawn, Bronx:0
( 9 / 306 ) Chinese food in Norwood, Bronx:0
( 10 / 306 ) Chinese food in Williamsbridge, Bronx:0
( 11 / 306 ) Chinese food in Baychester, Bronx:0
( 12 / 306 ) Chinese food in Pelham Parkway, Bronx:1
( 13 / 306 ) Chinese food in City Island, Bronx:0
( 14 / 306 ) Chinese food in Bedford Park, Bronx:0
( 15 / 306 ) Chinese food in University Heights, Bronx:0
( 16 / 306 ) Chinese food in Morris Heights, Bronx:0
( 17 / 306 ) Chinese food in Fordham, Bronx:0
( 18 / 306 ) Chinese food in East Tremont, Bronx:0
( 19 / 306 ) Chinese food in West Farms, Bronx:0
( 20 / 306 ) Chinese food in High Bridge, Bronx:0
( 21 / 306 ) Chinese food in Melrose, Bronx:0
( 22 / 306 ) Chinese food in Mott Haven, Bronx:0
( 23 / 306 ) Chinese food in Port Morris, Bronx:0
( 24 / 306 ) Chinese food in Longwood, Bronx:0
( 25 / 306 ) Chinese food in Hunts Point, Bronx:0
( 26 / 306 ) Chinese food in Morrisania, Bronx:0
```

( 27 / 306 ) Chinese food in Soundview, Bronx:2  
( 28 / 306 ) Chinese food in Clason Point, Bronx:0  
( 29 / 306 ) Chinese food in Throgs Neck, Bronx:0  
( 30 / 306 ) Chinese food in Country Club, Bronx:0  
( 31 / 306 ) Chinese food in Parkchester, Bronx:1  
( 32 / 306 ) Chinese food in Westchester Square, Bronx:0  
( 33 / 306 ) Chinese food in Van Nest, Bronx:0  
( 34 / 306 ) Chinese food in Morris Park, Bronx:0  
( 35 / 306 ) Chinese food in Belmont, Bronx:0  
( 36 / 306 ) Chinese food in Spuyten Duyvil, Bronx:0  
( 37 / 306 ) Chinese food in North Riverdale, Bronx:0  
( 38 / 306 ) Chinese food in Pelham Bay, Bronx:0  
( 39 / 306 ) Chinese food in Schuylerville, Bronx:0  
( 40 / 306 ) Chinese food in Edgewater Park, Bronx:0  
( 41 / 306 ) Chinese food in Castle Hill, Bronx:0  
( 42 / 306 ) Chinese food in Olinville, Bronx:0  
( 43 / 306 ) Chinese food in Pelham Gardens, Bronx:0  
( 44 / 306 ) Chinese food in Concourse, Bronx:1  
( 45 / 306 ) Chinese food in Unionport, Bronx:0  
( 46 / 306 ) Chinese food in Edenwald, Bronx:0  
( 47 / 306 ) Chinese food in Bay Ridge, Brooklyn:0  
( 48 / 306 ) Chinese food in Bensonhurst, Brooklyn:0  
( 49 / 306 ) Chinese food in Sunset Park, Brooklyn:0  
( 50 / 306 ) Chinese food in Greenpoint, Brooklyn:0  
( 51 / 306 ) Chinese food in Gravesend, Brooklyn:0  
( 52 / 306 ) Chinese food in Brighton Beach, Brooklyn:0  
( 53 / 306 ) Chinese food in Sheepshead Bay, Brooklyn:0  
( 54 / 306 ) Chinese food in Manhattan Terrace, Brooklyn:0  
( 55 / 306 ) Chinese food in Flatbush, Brooklyn:0  
( 56 / 306 ) Chinese food in Crown Heights, Brooklyn:0  
( 57 / 306 ) Chinese food in East Flatbush, Brooklyn:1  
( 58 / 306 ) Chinese food in Kensington, Brooklyn:0  
( 59 / 306 ) Chinese food in Windsor Terrace, Brooklyn:1  
( 60 / 306 ) Chinese food in Prospect Heights, Brooklyn:0  
( 61 / 306 ) Chinese food in Brownsville, Brooklyn:1  
( 62 / 306 ) Chinese food in Williamsburg, Brooklyn:0  
( 63 / 306 ) Chinese food in Bushwick, Brooklyn:0  
( 64 / 306 ) Chinese food in Bedford Stuyvesant, Brooklyn:0  
( 65 / 306 ) Chinese food in Brooklyn Heights, Brooklyn:0  
( 66 / 306 ) Chinese food in Cobble Hill, Brooklyn:0  
( 67 / 306 ) Chinese food in Carroll Gardens, Brooklyn:0  
( 68 / 306 ) Chinese food in Red Hook, Brooklyn:0  
( 69 / 306 ) Chinese food in Gowanus, Brooklyn:0  
( 70 / 306 ) Chinese food in Fort Greene, Brooklyn:0  
( 71 / 306 ) Chinese food in Park Slope, Brooklyn:0  
( 72 / 306 ) Chinese food in Cypress Hills, Brooklyn:0  
( 73 / 306 ) Chinese food in East New York, Brooklyn:0  
( 74 / 306 ) Chinese food in Starrett City, Brooklyn:0

( 75 / 306 ) Chinese food in Canarsie, Brooklyn:1  
 ( 76 / 306 ) Chinese food in Flatlands, Brooklyn:0  
 ( 77 / 306 ) Chinese food in Mill Island, Brooklyn:0  
 ( 78 / 306 ) Chinese food in Manhattan Beach, Brooklyn:0  
 ( 79 / 306 ) Chinese food in Coney Island, Brooklyn:0  
 ( 80 / 306 ) Chinese food in Bath Beach, Brooklyn:0  
 ( 81 / 306 ) Chinese food in Borough Park, Brooklyn:0  
 ( 82 / 306 ) Chinese food in Dyker Heights, Brooklyn:0  
 ( 83 / 306 ) Chinese food in Gerritsen Beach, Brooklyn:0  
 ( 84 / 306 ) Chinese food in Marine Park, Brooklyn:1  
 ( 85 / 306 ) Chinese food in Clinton Hill, Brooklyn:0  
 ( 86 / 306 ) Chinese food in Sea Gate, Brooklyn:0  
 ( 87 / 306 ) Chinese food in Downtown, Brooklyn:1  
 ( 88 / 306 ) Chinese food in Boerum Hill, Brooklyn:0  
 ( 89 / 306 ) Chinese food in Prospect Lefferts Gardens, Brooklyn:0  
 ( 90 / 306 ) Chinese food in Ocean Hill, Brooklyn:0  
 ( 91 / 306 ) Chinese food in City Line, Brooklyn:0  
 ( 92 / 306 ) Chinese food in Bergen Beach, Brooklyn:0  
 ( 93 / 306 ) Chinese food in Midwood, Brooklyn:0  
 ( 94 / 306 ) Chinese food in Prospect Park South, Brooklyn:0  
 ( 95 / 306 ) Chinese food in Georgetown, Brooklyn:0  
 ( 96 / 306 ) Chinese food in East Williamsburg, Brooklyn:0  
 ( 97 / 306 ) Chinese food in North Side, Brooklyn:1  
 ( 98 / 306 ) Chinese food in South Side, Brooklyn:0  
 ( 99 / 306 ) Chinese food in Ocean Parkway, Brooklyn:0  
 ( 100 / 306 ) Chinese food in Fort Hamilton, Brooklyn:0  
 ( 101 / 306 ) Chinese food in Chinatown, Manhattan:0  
 ( 102 / 306 ) Chinese food in Washington Heights, Manhattan:0  
 ( 103 / 306 ) Chinese food in Inwood, Manhattan:0  
 ( 104 / 306 ) Chinese food in Hamilton Heights, Manhattan:0  
 ( 105 / 306 ) Chinese food in Manhattanville, Manhattan:0  
 ( 106 / 306 ) Chinese food in Central Harlem, Manhattan:0  
 ( 107 / 306 ) Chinese food in East Harlem, Manhattan:0  
 ( 108 / 306 ) Chinese food in Upper East Side, Manhattan:0  
 ( 109 / 306 ) Chinese food in Yorkville, Manhattan:0  
 ( 110 / 306 ) Chinese food in Lenox Hill, Manhattan:0  
 ( 111 / 306 ) Chinese food in Roosevelt Island, Manhattan:0  
 ( 112 / 306 ) Chinese food in Upper West Side, Manhattan:1  
 ( 113 / 306 ) Chinese food in Lincoln Square, Manhattan:0  
 ( 114 / 306 ) Chinese food in Clinton, Manhattan:0  
 ( 115 / 306 ) Chinese food in Midtown, Manhattan:0  
 ( 116 / 306 ) Chinese food in Murray Hill, Manhattan:0  
 ( 117 / 306 ) Chinese food in Chelsea, Manhattan:1  
 ( 118 / 306 ) Chinese food in Greenwich Village, Manhattan:0  
 ( 119 / 306 ) Chinese food in East Village, Manhattan:0  
 ( 120 / 306 ) Chinese food in Lower East Side, Manhattan:1  
 ( 121 / 306 ) Chinese food in Tribeca, Manhattan:0  
 ( 122 / 306 ) Chinese food in Little Italy, Manhattan:0

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

( 171 / 306 ) Chinese food in Far Rockaway, Queens:2  
 ( 172 / 306 ) Chinese food in Broad Channel, Queens:0  
 ( 173 / 306 ) Chinese food in Breezy Point, Queens:0  
 ( 174 / 306 ) Chinese food in Steinway, Queens:0  
 ( 175 / 306 ) Chinese food in Beechhurst, Queens:0  
 ( 176 / 306 ) Chinese food in Bay Terrace, Queens:0  
 ( 177 / 306 ) Chinese food in Edgemere, Queens:0  
 ( 178 / 306 ) Chinese food in Arverne, Queens:0  
 ( 179 / 306 ) Chinese food in Rockaway Beach, Queens:0  
 ( 180 / 306 ) Chinese food in Neponsit, Queens:0  
 ( 181 / 306 ) Chinese food in Murray Hill, Queens:0  
 ( 182 / 306 ) Chinese food in Floral Park, Queens:1  
 ( 183 / 306 ) Chinese food in Holliswood, Queens:0  
 ( 184 / 306 ) Chinese food in Jamaica Estates, Queens:0  
 ( 185 / 306 ) Chinese food in Queensboro Hill, Queens:2  
 ( 186 / 306 ) Chinese food in Hillcrest, Queens:0  
 ( 187 / 306 ) Chinese food in Ravenswood, Queens:0  
 ( 188 / 306 ) Chinese food in Lindenwood, Queens:1  
 ( 189 / 306 ) Chinese food in Laurelton, Queens:0  
 ( 190 / 306 ) Chinese food in Lefrak City, Queens:0  
 ( 191 / 306 ) Chinese food in Belle Harbor, Queens:0  
 ( 192 / 306 ) Chinese food in Rockaway Park, Queens:0  
 ( 193 / 306 ) Chinese food in Somerville, Queens:0  
 ( 194 / 306 ) Chinese food in Brookville, Queens:0  
 ( 195 / 306 ) Chinese food in Bellaire, Queens:1  
 ( 196 / 306 ) Chinese food in North Corona, Queens:0  
 ( 197 / 306 ) Chinese food in Forest Hills Gardens, Queens:0  
 ( 198 / 306 ) Chinese food in St. George, Staten Island:0  
 ( 199 / 306 ) Chinese food in New Brighton, Staten Island:0  
 ( 200 / 306 ) Chinese food in Stapleton, Staten Island:0  
 ( 201 / 306 ) Chinese food in Rosebank, Staten Island:0  
 ( 202 / 306 ) Chinese food in West Brighton, Staten Island:0  
 ( 203 / 306 ) Chinese food in Grymes Hill, Staten Island:0  
 ( 204 / 306 ) Chinese food in Todt Hill, Staten Island:0  
 ( 205 / 306 ) Chinese food in South Beach, Staten Island:0  
 ( 206 / 306 ) Chinese food in Port Richmond, Staten Island:0  
 ( 207 / 306 ) Chinese food in Mariner's Harbor, Staten Island:0  
 ( 208 / 306 ) Chinese food in Port Ivory, Staten Island:0  
 ( 209 / 306 ) Chinese food in Castleton Corners, Staten Island:0  
 ( 210 / 306 ) Chinese food in New Springville, Staten Island:0  
 ( 211 / 306 ) Chinese food in Travis, Staten Island:0  
 ( 212 / 306 ) Chinese food in New Dorp, Staten Island:0  
 ( 213 / 306 ) Chinese food in Oakwood, Staten Island:0  
 ( 214 / 306 ) Chinese food in Great Kills, Staten Island:1  
 ( 215 / 306 ) Chinese food in Eltingville, Staten Island:0  
 ( 216 / 306 ) Chinese food in Annadale, Staten Island:0  
 ( 217 / 306 ) Chinese food in Woodrow, Staten Island:0  
 ( 218 / 306 ) Chinese food in Tottenville, Staten Island:0

( 219 / 306 ) Chinese food in Tompkinsville, Staten Island:0  
 ( 220 / 306 ) Chinese food in Silver Lake, Staten Island:0  
 ( 221 / 306 ) Chinese food in Sunnyside, Staten Island:0  
 ( 222 / 306 ) Chinese food in Ditmas Park, Brooklyn:0  
 ( 223 / 306 ) Chinese food in Wingate, Brooklyn:0  
 ( 224 / 306 ) Chinese food in Rugby, Brooklyn:0  
 ( 225 / 306 ) Chinese food in Park Hill, Staten Island:0  
 ( 226 / 306 ) Chinese food in Westerleigh, Staten Island:0  
 ( 227 / 306 ) Chinese food in Graniteville, Staten Island:0  
 ( 228 / 306 ) Chinese food in Arlington, Staten Island:0  
 ( 229 / 306 ) Chinese food in Arrochar, Staten Island:0  
 ( 230 / 306 ) Chinese food in Grasmere, Staten Island:0  
 ( 231 / 306 ) Chinese food in Old Town, Staten Island:0  
 ( 232 / 306 ) Chinese food in Dongan Hills, Staten Island:1  
 ( 233 / 306 ) Chinese food in Midland Beach, Staten Island:1  
 ( 234 / 306 ) Chinese food in Grant City, Staten Island:0  
 ( 235 / 306 ) Chinese food in New Dorp Beach, Staten Island:0  
 ( 236 / 306 ) Chinese food in Bay Terrace, Staten Island:0  
 ( 237 / 306 ) Chinese food in Huguenot, Staten Island:0  
 ( 238 / 306 ) Chinese food in Pleasant Plains, Staten Island:0  
 ( 239 / 306 ) Chinese food in Butler Manor, Staten Island:0  
 ( 240 / 306 ) Chinese food in Charleston, Staten Island:0  
 ( 241 / 306 ) Chinese food in Rossville, Staten Island:0  
 ( 242 / 306 ) Chinese food in Arden Heights, Staten Island:0  
 ( 243 / 306 ) Chinese food in Greenridge, Staten Island:0  
 ( 244 / 306 ) Chinese food in Heartland Village, Staten Island:0  
 ( 245 / 306 ) Chinese food in Chelsea, Staten Island:0  
 ( 246 / 306 ) Chinese food in Bloomfield, Staten Island:0  
 ( 247 / 306 ) Chinese food in Bulls Head, Staten Island:1  
 ( 248 / 306 ) Chinese food in Carnegie Hill, Manhattan:0  
 ( 249 / 306 ) Chinese food in Noho, Manhattan:0  
 ( 250 / 306 ) Chinese food in Civic Center, Manhattan:0  
 ( 251 / 306 ) Chinese food in Midtown South, Manhattan:0  
 ( 252 / 306 ) Chinese food in Richmond Town, Staten Island:0  
 ( 253 / 306 ) Chinese food in Shore Acres, Staten Island:1  
 ( 254 / 306 ) Chinese food in Clifton, Staten Island:1  
 ( 255 / 306 ) Chinese food in Concord, Staten Island:0  
 ( 256 / 306 ) Chinese food in Emerson Hill, Staten Island:0  
 ( 257 / 306 ) Chinese food in Randall Manor, Staten Island:0  
 ( 258 / 306 ) Chinese food in Howland Hook, Staten Island:0  
 ( 259 / 306 ) Chinese food in Elm Park, Staten Island:0  
 ( 260 / 306 ) Chinese food in Remsen Village, Brooklyn:0  
 ( 261 / 306 ) Chinese food in New Lots, Brooklyn:1  
 ( 262 / 306 ) Chinese food in Paerdegat Basin, Brooklyn:0  
 ( 263 / 306 ) Chinese food in Mill Basin, Brooklyn:0  
 ( 264 / 306 ) Chinese food in Jamaica Hills, Queens:1  
 ( 265 / 306 ) Chinese food in Utopia, Queens:0  
 ( 266 / 306 ) Chinese food in Pomonok, Queens:0

```
( 267 / 306 ) Chinese food in Astoria Heights, Queens:1
( 268 / 306 ) Chinese food in Claremont Village, Bronx:1
( 269 / 306 ) Chinese food in Concourse Village, Bronx:0
( 270 / 306 ) Chinese food in Mount Eden, Bronx:0
( 271 / 306 ) Chinese food in Mount Hope, Bronx:0
( 272 / 306 ) Chinese food in Sutton Place, Manhattan:0
( 273 / 306 ) Chinese food in Hunters Point, Queens:0
( 274 / 306 ) Chinese food in Turtle Bay, Manhattan:0
( 275 / 306 ) Chinese food in Tudor City, Manhattan:0
( 276 / 306 ) Chinese food in Stuyvesant Town, Manhattan:0
( 277 / 306 ) Chinese food in Flatiron, Manhattan:0
( 278 / 306 ) Chinese food in Sunnyside Gardens, Queens:0
( 279 / 306 ) Chinese food in Blissville, Queens:0
( 280 / 306 ) Chinese food in Fulton Ferry, Brooklyn:0
( 281 / 306 ) Chinese food in Vinegar Hill, Brooklyn:0
( 282 / 306 ) Chinese food in Weeksville, Brooklyn:1
( 283 / 306 ) Chinese food in Broadway Junction, Brooklyn:0
( 284 / 306 ) Chinese food in Dumbo, Brooklyn:0
( 285 / 306 ) Chinese food in Manor Heights, Staten Island:1
( 286 / 306 ) Chinese food in Willowbrook, Staten Island:0
( 287 / 306 ) Chinese food in Sandy Ground, Staten Island:0
( 288 / 306 ) Chinese food in Egbertville, Staten Island:0
( 289 / 306 ) Chinese food in Roxbury, Queens:0
( 290 / 306 ) Chinese food in Homecrest, Brooklyn:1
( 291 / 306 ) Chinese food in Middle Village, Queens:0
( 292 / 306 ) Chinese food in Prince's Bay, Staten Island:1
( 293 / 306 ) Chinese food in Lighthouse Hill, Staten Island:0
( 294 / 306 ) Chinese food in Richmond Valley, Staten Island:0
( 295 / 306 ) Chinese food in Malba, Queens:0
( 296 / 306 ) Chinese food in Highland Park, Brooklyn:0
( 297 / 306 ) Chinese food in Madison, Brooklyn:0
( 298 / 306 ) Chinese food in Bronxdale, Bronx:1
( 299 / 306 ) Chinese food in Allerton, Bronx:0
( 300 / 306 ) Chinese food in Kingsbridge Heights, Bronx:1
( 301 / 306 ) Chinese food in Erasmus, Brooklyn:0
( 302 / 306 ) Chinese food in Hudson Yards, Manhattan:0
( 303 / 306 ) Chinese food in Hammels, Queens:0
( 304 / 306 ) Chinese food in Bayswater, Queens:0
( 305 / 306 ) Chinese food in Queensbridge, Queens:0
( 306 / 306 ) Chinese food in Fox Hills, Staten Island:0
```

```
[28]: Chinese_food_ny.head()
```

```
[28]:   Borough      Neighborhood      ID \
0   Bronx  Pelham Parkway  4b9d6b45f964a52078ab36e3
1   Bronx      Soundview  4cc63e36bde8f04dcbfeb54b
2   Bronx      Soundview  4e656e8252b1260c14683b4b
```

```

3   Bronx      Parkchester  4b89b62df964a520ff4c32e3
4   Bronx      Concourse    4d9a695ee5fd6ea8e3096df5

```

```

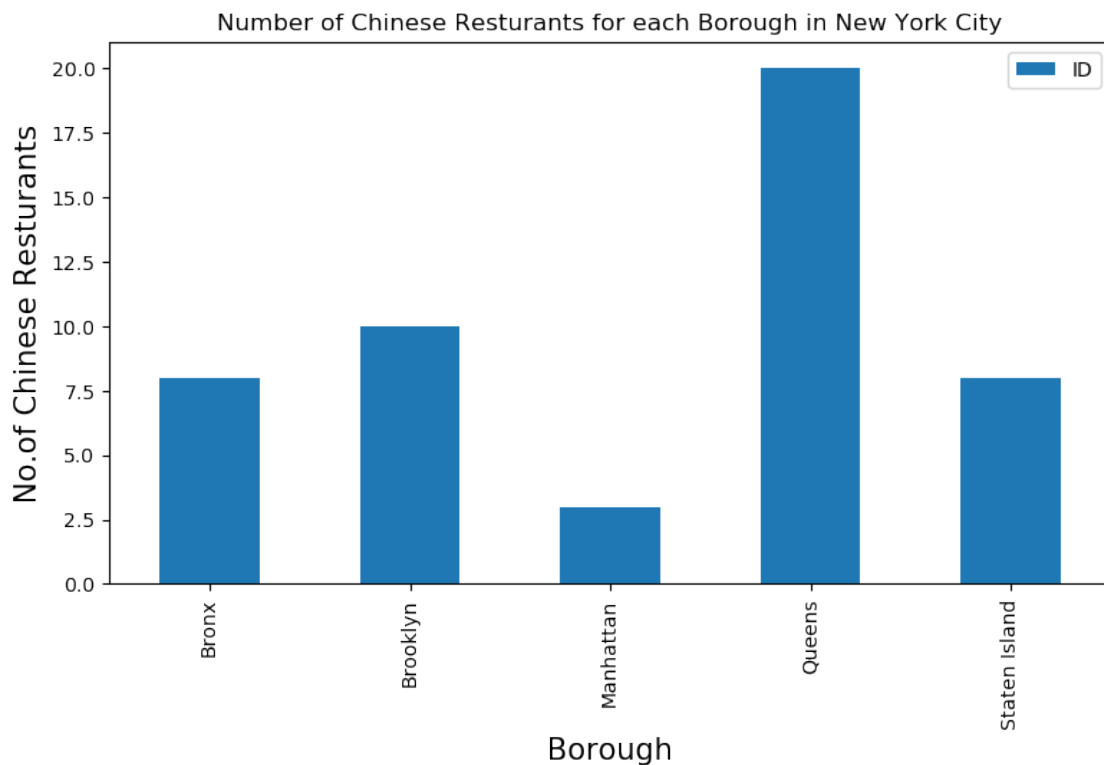
                                Name
0      Mr. Q's Chinese Restaurant
1   Golden City Chinese Restaurant
2                Kee Hing Restaurant
3   Sabor Latino Seafood Restaurant
4   Lucky House Chinese Restaurant

```

```

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

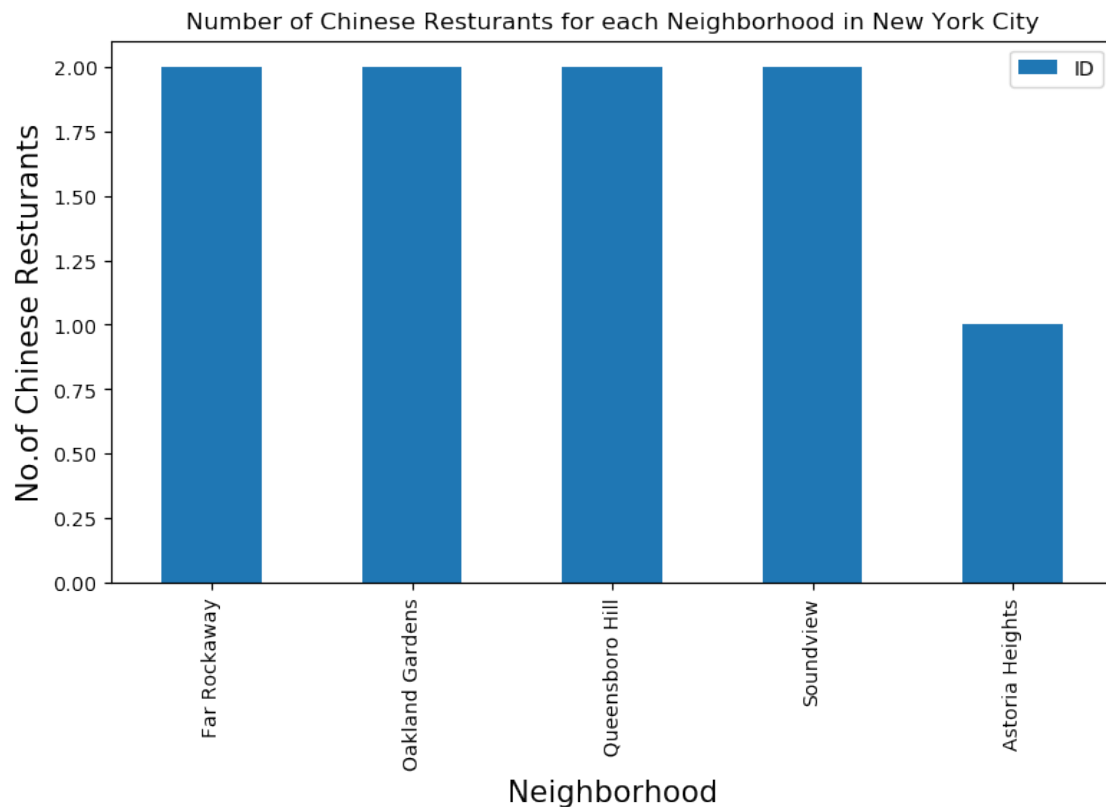
```





0.3 From the above Bar Plot, we can see that Queens has highest number of Chinese resturants

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



```
[33]: Chinese_food_ny[Chinese_food_ny['Neighborhood']=='Far Rockaway']
```

```
[33]:
```

	Borough	Neighborhood	ID	Name
26	Queens	Far Rockaway	4e4e41e8bd4101d0d7a620e0	Magic Wok
27	Queens	Far Rockaway	4eb9c26046906fa3574d411f	Lucky Cornaga

0.4 We can see that, Far Rockaway in Queens has the highest number of Indian Resturants with a total count of 2

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

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

    count+=1
```

	ID	Name	Likes	Rating	Tips
0	4b9d6b45f964a52078ab36e3	Mr. Q's Chinese Restaurant	9	7.2	10

( 1 / 49 ) processed  
error  
Empty DataFrame  
Columns: [ID, Name, Likes, Rating, Tips]  
Index: []  
No data available for id= 4cc63e36bde8f04dcbfeb54b  
( 2 / 49 ) processed  
error  
Empty DataFrame  
Columns: [ID, Name, Likes, Rating, Tips]

```

Index: []
No data available for id= 4e656e8252b1260c14683b4b
( 3 / 49 ) processed
      ID                               Name  Likes  Rating  \
0  4b89b62df964a520ff4c32e3  Sabor Latino Seafood Restaurant      6      6.9

      Tips
0      8
( 4 / 49 ) processed
      ID                               Name  Likes  Rating  \
0  4d9a695ee5fd6ea8e3096df5  Lucky House Chinese Restaurant      5      7.6

      Tips
0      2
( 5 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c6b208e0c3ac9b6be76d138
( 6 / 49 ) processed
      ID                               Name  Likes  Rating  Tips
0  54e39b14498e9c646b42958e  East Wind Snack Shop      138      8.9      50
( 7 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c38b7421e06d13acf3c783e
( 8 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4d4dadd04aa3a093c4c145ae
( 9 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c5075d73940be9ae2124a07
( 10 / 49 ) processed
      ID                               Name  Likes  Rating  Tips
0  59da9590e1f0aa52976b8f35  Han Dynasty      161      8.6      32
( 11 / 49 ) processed
      ID                               Name  Likes  Rating  Tips
0  58df00318cfe546addb99246  Birds of a Feather      341      8.9      71
( 12 / 49 ) processed

```

	ID	Name	Likes	Rating	Tips
0	5529bfd8498ec6ce692d8015	Han Dynasty	322	8.6	66
( 13 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	44e9b421f964a520a5371fe3	Buddakan	1488	8.8	521
( 14 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	5b380f649deb7d00399fdf9d	Kings County Imperial	67	9.2	10
( 15 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	56296f14498edb1ed77b64a3	Five Loaves and Two Fishes	10	7.9	1
( 16 / 49 ) processed					
	ID	Name	Likes	Rating	\
0	4b68c90ff964a520da8c2be3	Great Wall Chinese Restaurant	7	7.5	
Tips					
0	2				
( 17 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	5747a89b498ee4b7a5106556	DunHuang Lanzhou Beef Noodle	34	8.1	10
( 18 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	4d8805b7d85f370481b0c9db	Little Pepper	73	8.1	38
( 19 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	53794fd211d282a3cce576a2	Little Dumpling	100	7.6	31
( 20 / 49 ) processed					
error					
Empty DataFrame					
Columns: [ID, Name, Likes, Rating, Tips]					
Index: []					
No data available for id= 4ba022fbf964a520cf5c37e3					
( 21 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	4b0ae7a3f964a520c92923e3	Empire Garden	7	7.2	6
( 22 / 49 ) processed					
	ID	Name	Likes	Rating	Tips
0	5a2b366193bd636532b50bdb	Little Dumpling	10	7.2	1
( 23 / 49 ) processed					
error					
Empty DataFrame					
Columns: [ID, Name, Likes, Rating, Tips]					
Index: []					
No data available for id= 4b8db729f964a520330a33e3					
( 24 / 49 ) processed					
error					
Empty DataFrame					
Columns: [ID, Name, Likes, Rating, Tips]					

```

Index: []
No data available for id= 4e4dfb24bd4101d0d79f8cf5
( 25 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4d82419c2fb7370411ea8811
( 26 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4e4e41e8bd4101d0d7a620e0  Magic Wok      13      8.4      8
( 27 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4eb9c26046906fa3574d411f  Lucky Cornaga      7      7.3      0
( 28 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4c801dd02f1c236ab8c62343
( 29 / 49 ) processed
      ID      Name  Likes  \
0  4ac90140f964a520f7bd20e3  Main Street Taiwanese Gourmet      63

      Rating  Tips
0      7.5      28
( 30 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4f844c6fe4b0059705cb042c  Lake Pavilion Restaurant      117      6.7      41
( 31 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4b9e559af964a520c4da36e3
( 32 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4c59c1d3d3aee21ea2066955  China King      4      7.0      3
( 33 / 49 ) processed
      ID      Name  Likes  Rating  \
0  4b747adcf964a52010df2de3  Lucky Fortune Chinese Restaurant      7      6.6

      Tips
0      6
( 34 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4bba73677421a593ebd4c340  Jac Mao      23      8.1      12
( 35 / 49 ) processed

```

```

error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4cc61c46b2beb1f74faa264c
( 36 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  5165e9fee4b08d4837e87f35  Empire East      5      7.3      4
( 37 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4bd36553caff95212bd4d4f0
( 38 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4cf9aa7ad8468cfadaa9e86b
( 39 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 5090507fe4b095c5d7dab120
( 40 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4ce49482e571a09332bc8587  Sagar Chinese      17      6.9      15
( 41 / 49 ) processed
error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4f3234e019836c91c7c0a983
( 42 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4ca3bffalee76dcb1ee6fbdd  Empire King Chinese Food      3      5.8      2
( 43 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4daa263f0cb6a89c62682125  Hardee      16      8.1      6
( 44 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4be75c8f2468c928fc720243  Tack's Chinese Take Out      7      7.1      8
( 45 / 49 ) processed
      ID      Name  Likes  Rating  Tips
0  4b46743ff964a520892126e3  Golden "Z" Restaurant      9      7.6      6
( 46 / 49 ) processed

```

```

error
Empty DataFrame
Columns: [ID, Name, Likes, Rating, Tips]
Index: []
No data available for id= 4bb7d282b35776b0b83dc801
( 47 / 49 ) processed

```

	ID	Name	Likes	Rating	Tips
0	4c3f7f2eda3dc928b8f6c5b9	Peking Kitchen	9	7.8	2

```

( 48 / 49 ) processed

```

```

↳ -----
↳
KeyError                                Traceback (most recent call↳
↳last)

<ipython-input-36-91dc7e2a9e1f> in <module>
      8     Borough,Neighborhood,ID,Name=row
      9     try:
--> 10         venue_details=get_venue_details(ID)
      11         print(venue_details)
      12         id,name,likes,rating,tips=venue_details.values.tolist()[0]

<ipython-input-11-31f6f13daf6b> in get_venue_details(venue_id)
      14     # get all the data
      15     results = requests.get(url).json()
--> 16     venue_data=results['response']['venue']
      17     venue_details=[]
      18     try:

KeyError: 'venue'

```

```
[37]: Chinese_rest_stats_ny.head()
```

```
[37]:
```

	Borough	Neighborhood	ID \
0	Bronx	Pelham Parkway	4b9d6b45f964a52078ab36e3
1	Bronx	Soundview	0
2	Bronx	Soundview	0
3	Bronx	Parkchester	4b89b62df964a520ff4c32e3
4	Bronx	Concourse	4d9a695ee5fd6ea8e3096df5

	Name	Likes	Rating	Tips
0	Mr. Q's Chinese Restaurant	9	7.2	10
1		0	0.0	0

2		0	0	0.0	0
3	Sabor Latino Seafood Restaurant	6	6.9	8	
4	Lucky House Chinese Restaurant	5	7.6	2	

```
[38]: Chinese_rest_stats_ny['Likes']=Chinese_rest_stats_ny['Likes'].astype('float64')
Chinese_rest_stats_ny['Tips']=Chinese_rest_stats_ny['Tips'].astype('float64')
```

```
[39]: Chinese_rest_stats_ny.iloc[Chinese_rest_stats_ny['Likes'].idxmax()]
```

```
[39]: Borough                Manhattan
Neighborhood                Chelsea
ID                44e9b421f964a520a5371fe3
Name                Buddakan
Likes                1488
Rating                8.8
Tips                521
Name: 13, dtype: object
```

```
[40]: Chinese_rest_stats_ny.iloc[Chinese_rest_stats_ny['Rating'].idxmax()]
```

```
[40]: Borough                Manhattan
Neighborhood                Lower East Side
ID                5b380f649deb7d00399fdf9d
Name                Kings County Imperial
Likes                67
Rating                9.2
Tips                10
Name: 14, dtype: object
```

```
[41]: ny_neighborhood_stats=Chinese_rest_stats_ny.
↳groupby('Neighborhood',as_index=False).mean()[['Neighborhood','Rating']]
ny_neighborhood_stats.columns=['Neighborhood','Average Rating']
```

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

```
[42]:
```

	Neighborhood	Average Rating
26	Lower East Side	9.2
43	Windsor Terrace	8.9
31	North Side	8.9
6	Chelsea	8.8
41	Upper West Side	8.6
12	Downtown	8.6
42	Weeksville	8.1
9	College Point	8.1
17	Flushing	8.1
11	Dongan Hills	8.1



```
[43]: ny_neighborhood_stats=ny_neighborhood_stats[ny_neighborhood_stats['Average_Rating']>=9.0]
ny_neighborhood_stats
```

```
[43]:      Neighborhood  Average Rating
26  Lower East Side           9.2
```

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

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

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