

# Battle of Neighbourhood

September 13, 2019

## 0.1 Problem Description

Newyork is the most popular place in the world, there are lots of business scopes so we have decided to explore its neighbourhoods and find out the best indian restaurents alongside as well as we analyse which place is best suitable for opening a new restaurents for indian foods lover.

## 0.2 Data Extarction

First we collect newtork data set having its borough and neighbourhood i.e. from internet warehouse data or from wiki page by web scrapping.

I use this to extract my data

```
[14]: !wget -q -O 'newyork_data.json' https://cocl.us/new_york_dataset
      print('Data downloaded!')
```

Data downloaded!

```
[15]: with open('newyork_data.json') as json_data:
      newyork_data = json.load(json_data)
```

```
[21]: for data in neighborhoods_data:
      borough = neighborhood_name = data['properties']['borough']
      neighborhood_name = data['properties']['name']

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

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

```
[23]: neighborhoods.head(10)
```

```
[23]:   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
5	Bronx	Kingsbridge	40.881687	-73.902818
6	Manhattan	Marble Hill	40.876551	-73.910660
7	Bronx	Woodlawn	40.898273	-73.867315
8	Bronx	Norwood	40.877224	-73.879391
9	Bronx	Williamsbridge	40.881039	-73.857446

```
[24]: print('The dataframe has {} boroughs and {} neighborhoods.'.format(
        len(neighborhoods['Borough'].unique()),
        neighborhoods.shape[0]
    )
)
```

The dataframe has 5 boroughs and 306 neighborhoods.

### 0.3 Data Exploration

we store our Newyork Data in Dataframe for further analysis, we make four columns borough, neighbourhood, latitude and longitude then we use folium to visualize Newyork data in map.

Here is the codes below

```
[25]: address = 'New York City, NY'

geolocator = Nominatim(user_agent="ny_explorer")
location = geolocator.geocode(address)
latitude = location.latitude
longitude = location.longitude
print('The geograpical coordinate of New York City are {}, {}.'.
      ↪format(latitude, longitude))
```

The geograpical coordinate of New York City are 40.7127281, -74.0060152.

```
[27]: map_newyork = folium.Map(location=[latitude, longitude], zoom_start=10)

# add markers to map
for lat, lng, borough, neighborhood in zip(neighborhoods['Latitude'],
      ↪neighborhoods['Longitude'], neighborhoods['Borough'],
      ↪neighborhoods['Neighborhood']):
    label = '{} , {}'.format(neighborhood, borough)
    label = folium.Popup(label, parse_html=True)
    folium.CircleMarker(
        [lat, lng],
        radius=5,
        popup=label,
```

```

color='blue',
fill=True,
fill_color='#3186cc',
fill_opacity=0.7,
parse_html=False).add_to(map_newyork)

```

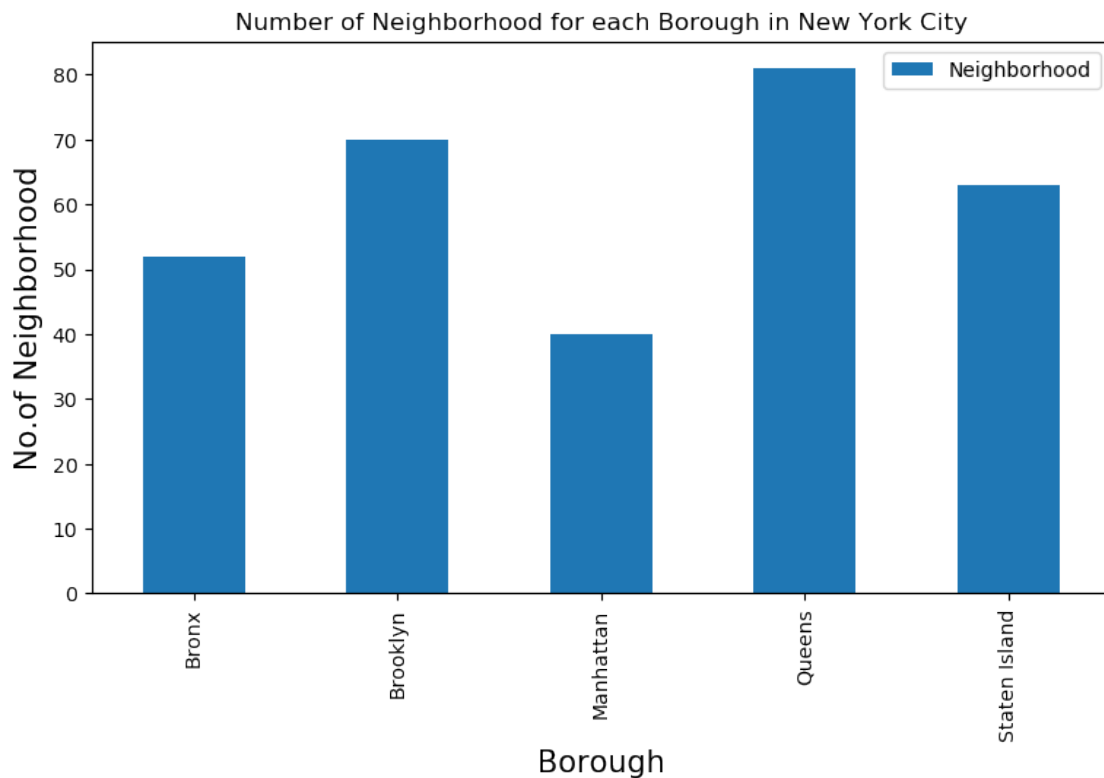
map\_newyork

[27]: <folium.folium.Map at 0x7f4511a186a0>

```

[32]: 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()

```



## 0.4 Foursquire API

Then we Use foursquire api to find the places having most indian restaurants nearby. we can also use tips provided by other users rating data from foursquire then we visualize the most located and good indian restaurants by bar plot and we get the results.

Here is the codes below

```
[21]: indian_rest_ny.shape
```

```
[21]: (156, 4)
```

```
[22]: indian_rest_ny.head()
```

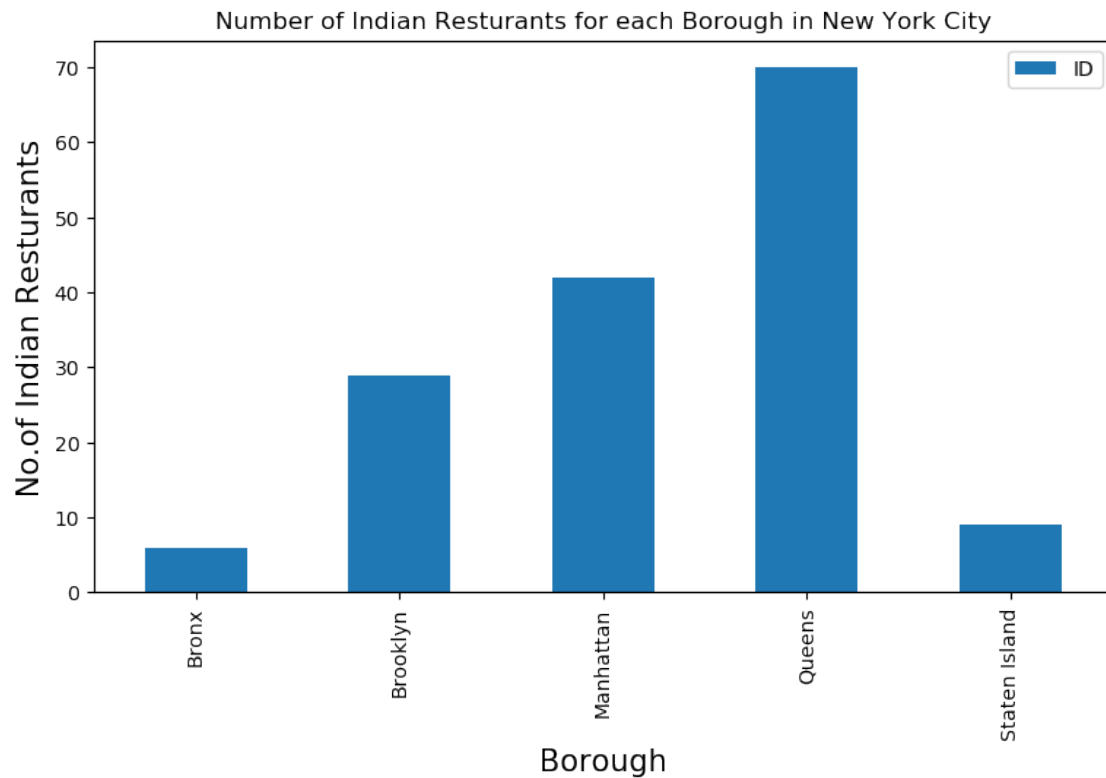
```
[22]:
```

	Borough	Neighborhood	ID \
0	Bronx	Woodlawn	4c0448d9310fc9b6bf1dc761
1	Bronx	Parkchester	4c194631838020a13e78e561
2	Bronx	Spuyten Duyvil	4c04544df423a593ac83d116
3	Bronx	Concourse	551b7f75498e86c00a0ed2e1
4	Bronx	Unionport	4c194631838020a13e78e561

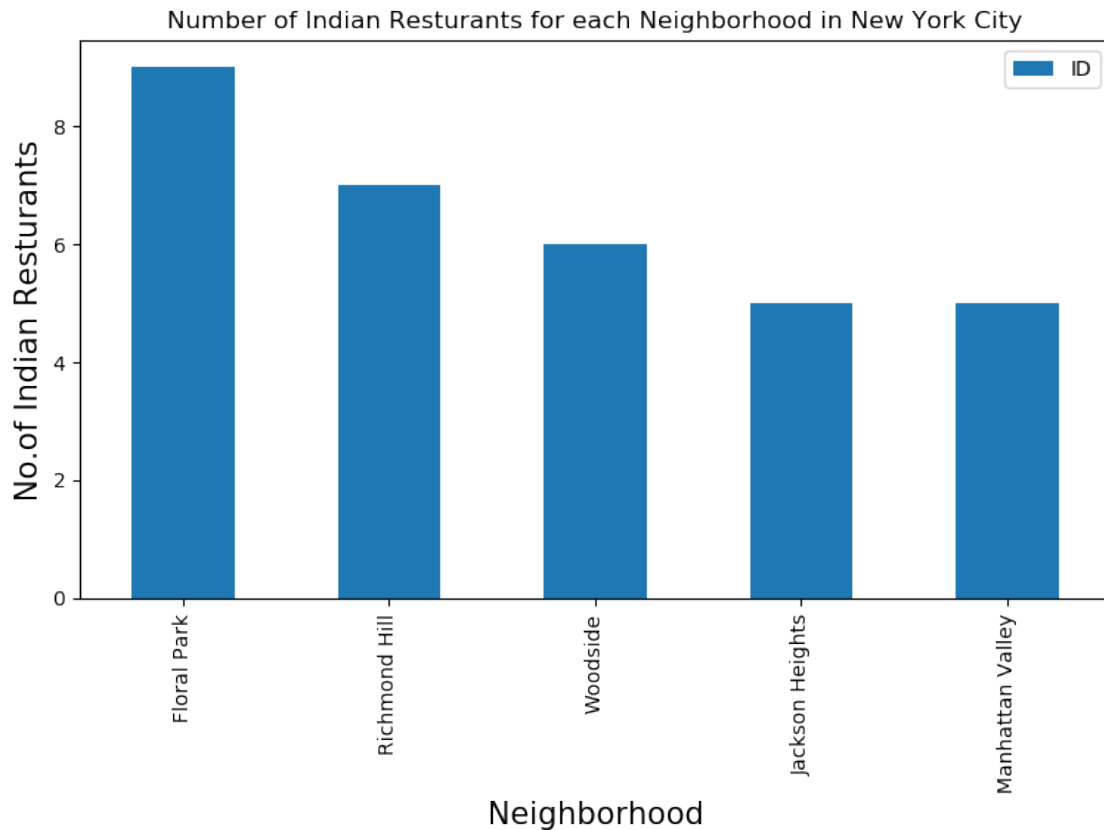
  

	Name
0	Curry Spot
1	Melanies Roti Bar And Grill
2	Cumin Indian Cuisine
3	Hungry Bird
4	Melanies Roti Bar And Grill

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



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



```
[25]: indian_rest_ny[indian_rest_ny['Neighborhood']=='Floral Park']
```

```
[25]:
```

	Borough	Neighborhood	ID \
105	Queens	Floral Park	4e4e3e22bd4101d0d7a5c2d1
106	Queens	Floral Park	4b647b56f964a520c4b62ae3
107	Queens	Floral Park	527ffc0811d2d329d5e49abd
108	Queens	Floral Park	4b787c49f964a5209cd12ee3
109	Queens	Floral Park	4c0c01e0bbc676b00d6b4cd5
110	Queens	Floral Park	4c76ff35a5676dcb72671721
111	Queens	Floral Park	4df0f39dd4c04d0392c853ea
112	Queens	Floral Park	55d68c1b498ecf05fa196fe1
113	Queens	Floral Park	4e6bfe1c7d8b2c711b17bbe5

	Name
105	Kerala Kitchen
106	Usha Foods & Usha Sweets
107	Jackson Diner
108	Santoor Indian Restaurant
109	Mumbai Xpress
110	Flavor Of India

111                      Sagar Chinese  
112    Namaste Restaurant and Cafe  
113              Surya sweets and snacks

## 0.5 Conclusion

After anlysisng we found Manhattan is the best place to open an restaurents and its neighbourhood floral park is famous for indian resataurents. so if we open a restaurents nesr manhattan and floral Park area our business will take a path.