FINAL REPORT

Capstone Project - The Battle of Neighbourhoods

Introduction:

New York City's demographics show that it is a large and ethnically diverse metropolis. It is the largest city in the United States with a long history of international immigration. New York City was home to nearly 8.5 million people in 2014, accounting for over 40% of the population of New York State and a slightly lower percentage of the New York metropolitan area, home to approximately 23.6 million. Over the last decade the city has been growing faster than the region. The New York region continues to be by far the leading metropolitan gateway for legal immigrants admitted into the United States.

New York City has also been a major point of entry for immigrants; the term "melting pot" was coined to describe densely populated immigrant neighbourhoods on the Lower East Side. As many as 800 languages are spoken in New York, making it the most linguistically diverse city in the world. English remains the most widely spoken language, although there are areas in the outer boroughs in which up to 25% of people speak English as an alternate language, and/or have limited or no English language fluency. English is least spoken in neighbourhoods such as Flushing, Sunset Park, and Corona.

With its diverse culture, comes diverse food items. There are many restaurants in New York City, each belonging to different categories like Chinese, Indian, and French etc.

Problem:

To find the answer to the following question:

Q1) To find best location to start an indian restaurant in neighberhoods of newyork city.

Data Section:

For this project we need the following data:

- New York City data that contains list of Boroughs, Neighbourhoods along with their latitude and longitude.
    - Data source : https://cocl.us/new_york_dataset

- Indian population in each neighbourhood of New York City.
  Data source :
  https://en.wikipedia.org/wiki/Indians_in_the_New_York_City_metropolitan_region
  Description: This data set contains Indian Population in neighborhoods of Newyork city.

- Indian Restaurents Information Queens and its Neighborhoods from Foursquare API.

Methodology:

1. We begin by collecting the New York city data from the following link "https://cocl.us/new_york_dataset".

Out[48]:

	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

```
                                          'Longitude': neighborhood_lon}, ignore_index=True)
new_york_data.Borough.unique()
```

```
Out[5]: array(['Bronx', 'Manhattan', 'Brooklyn', 'Queens', 'Staten Island'],
              dtype=object)
```
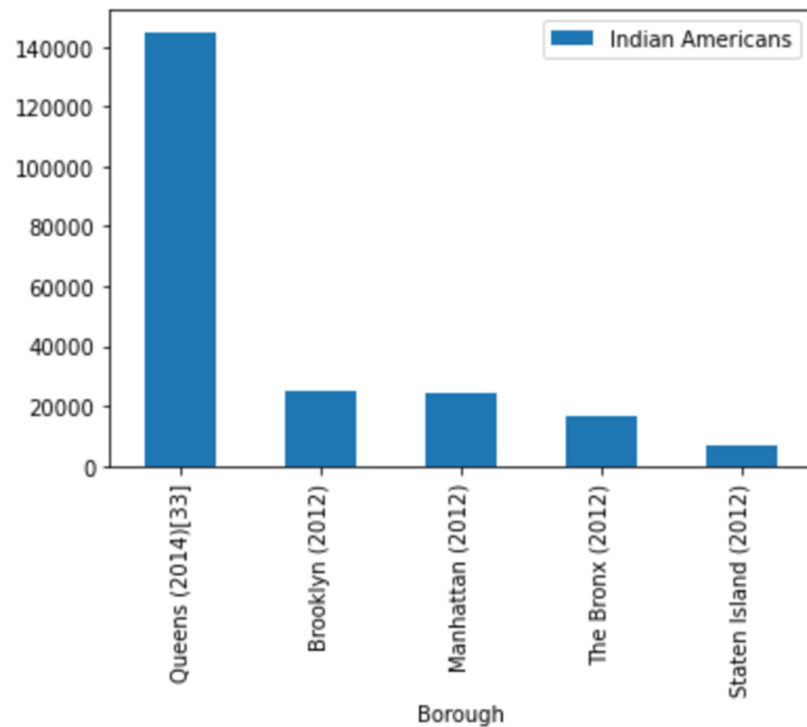
There are 5 Boroughs in Newyork City

2. Extracting indian population data from each neighberho

Out[32]:

Rank	Borough	City	Indian Americans	Density of Indian Americans per square mile	Percentage of Indian Americans in municipality's population
1.0	Queens (2014)[33]	New York City	144896	1326.5	6.2
2.0	Brooklyn (2012)	New York City	25270	357.9	1.0
3.0	Manhattan (2012)	New York City	24359	1060.9	1.5
4.0	The Bronx (2012)	New York City	16748	398.6	1.2
5.0	Staten Island (2012)	New York City	6646	113.6	1.4

3. Visualizing the extracted data.

4. Exploring number of Neighborhoods in Queens Boroughs.

Exploring Neighborhoods of Queens Borough

```
In [9]: Queens_data = new_york_data[new_york_data['Borough'] == 'Queens'].reset_index(drop=True)
        Queens_data
```

Out[9]:

	Borough	Neighborhood	Latitude	Longitude
0	Queens	Astoria	40.768509	-73.915654
1	Queens	Woodside	40.746349	-73.901842
80	Queens	Queensbridge	40.756091	-73.945631

```
In [11]: Queens_data.Neighborhood.size
```

Out[11]: 81

5. Extracting information of Indian Restaurents in neighborhoods of Queens Borough.

Out[22]:

	name	categories	address	lat	lng	labeledLatLngs	distance	postalCode	cc	city	state	country	formattedAddre
0	Indian Curry Express	Indian Restaurant	13109 Jamaica Ave	40.702128	-73.819951	[{'label': 'display', 'lat': 40.70212767659504...	5633	11418	US	Richmond Hill	NY	United States	[13109 Jama Ave, Richmo Hill, NY 11418, l
1	South Indian Hindu Temple	Hindu Temple	14307 Holly Ave	40.752567	-73.816597	[{'label': 'display', 'lat': 40.75256729125976...	1628	11355	US	Flushing	NY	United States	[14307 Holly A Flushing, 11355, United :
2	Punjabi Indian & American Restaurant	Indian Restaurant	160-20 46th Ave	40.753916	-73.805918	[{'label': 'display', 'lat': 40.75391568666028...	833	11358	US	Flushing	NY	United States	[160-20 46th A (160st and 4 ave), Flushi
3	Kabul Halal Meat and Indian	Food	4224 College Point Blvd	40.754398	-73.833199	[{'label': 'display', 'lat': 40.754398, 'lng':....	3042	11355	US	Flushing	NY	United States	[4224 Colle Point Bl Flushing, 11355
4	Rags' Indian cuisine	Indian Restaurant	NaN	40.772478	-73.819038	[{'label': 'display', 'lat': 40.77247759219799...	3101	11354	US	Flushing	NY	United States	[Flushing, 11354, Uni Stat
5	Agra Indian Cuisine	Indian Restaurant	213-35 39th Ave	40.765396	-73.771535	[{'label': 'display', 'lat': 40.76539561313631...	2801	11361	US	Bayside	NY	United States	[213-35 39th A Bayside, 11361, United S
			579 W										

Result:

So now we can answer the question asked above in the Question section:

Answers:

1. The Queens borough and its neighborhoods are the best location to start an Indian restaurant.

Conclusion:

From the above table it is seen that except jamaica, bayside, flushing, queens village, richmond hills, ozone park, remaining all neighbourhood's of queens have lack of indian restaurants.