FINAL REPORT

Capstone Project - The Battle of Neighbourhoods

Introduction

Toronto has the largest Indo-Canadian population in Canada. Almost 51% of the entire The Indo-Canadian community resides in the Greater Toronto Area. Most Indo-Canadians in the Toronto area live in Brampton, Markham, Scarborough, Etobicoke, and Mississauga. Indo-Canadians, particularly, Punjabi Sikhs, have a particularly strong presence in Brampton, where they represent about a third of the population (Most live in the northeastern and Eastern portion of the city). The area is middle and upper-middle class, homeownership is very high. The Indo-Canadians in this region are mostly of Punjabi, Telugu, Tamil, Gujarati, Marathi, Malayalee and Goan origin. When compared to the Indo-Canadian the community of Greater Vancouver, the Greater Toronto Area is home to a much more diverse community of Indians – both linguistically and religiously. Canadian carrier Air Canada operates flights from Toronto Pearson International Airport back to India.

Indo-Canadians in the Greater Toronto Area have an average household income of $86,425, which is higher than the Canadian average of $79,102 but lower than the Toronto Census Metropolitan Area's average of $95,326. Indo-Canadian students are also well-represented in Toronto-area universities; despite Indo-Canadians making up 10% of the Toronto area's population, students of Indian origin make up over 35% of Ryerson University, 30% of York University, and 20% of the University of Toronto's student bodies, respectively.

As Toronto has more number of Indo-Canadians lets do some analysis on Indian restaurant in the city.

Problem:

To find the answer to the following questions:

1. List of the major part of Toronto that has more Indian restaurant.
2. What is best location in Toronto for Indian cuisine
3. Which area lacks Indian restaurant.

Data Selection

For this the project we need the following data:

- Toronto: List of Borough, Neighourhood, Pincode, and their latitude and longitude

- o **Data Source(Borough, Neighourhood, Pincode):**
  https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M
- o **Data Source(their latitude and longitude):**
  http://cocl.us/Geospatial_data
- o **Description:** We use this dataset to explore the different neighborhoods of Toronto.

- Indian restaurant in each neighborhood of Toronto
  - **Data Source**: Foursquare API
  - **Description:** We use Foursquare API to find different Indian restaurant, their rating, etc.

Methodology:

- **We begin by collecting the Toronto data from "https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M". and we will collect latitude and longitude Data from "http://cocl.us/Geospatial_data" and combine them**

```
[28]: Toronto_data = Toronto_get_data()
      Toronto_data.head()
```

	Postcode	Borough	Neighbourhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.753259	-79.329656
1	M4A	North York	Victoria Village	43.725882	-79.315572
2	M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636
3	M6A	North York	Lawrence Manor, Lawrence Heights	43.718518	-79.464763
4	M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government	43.662301	-79.389494

```
[27]: Toronto_data.shape
```
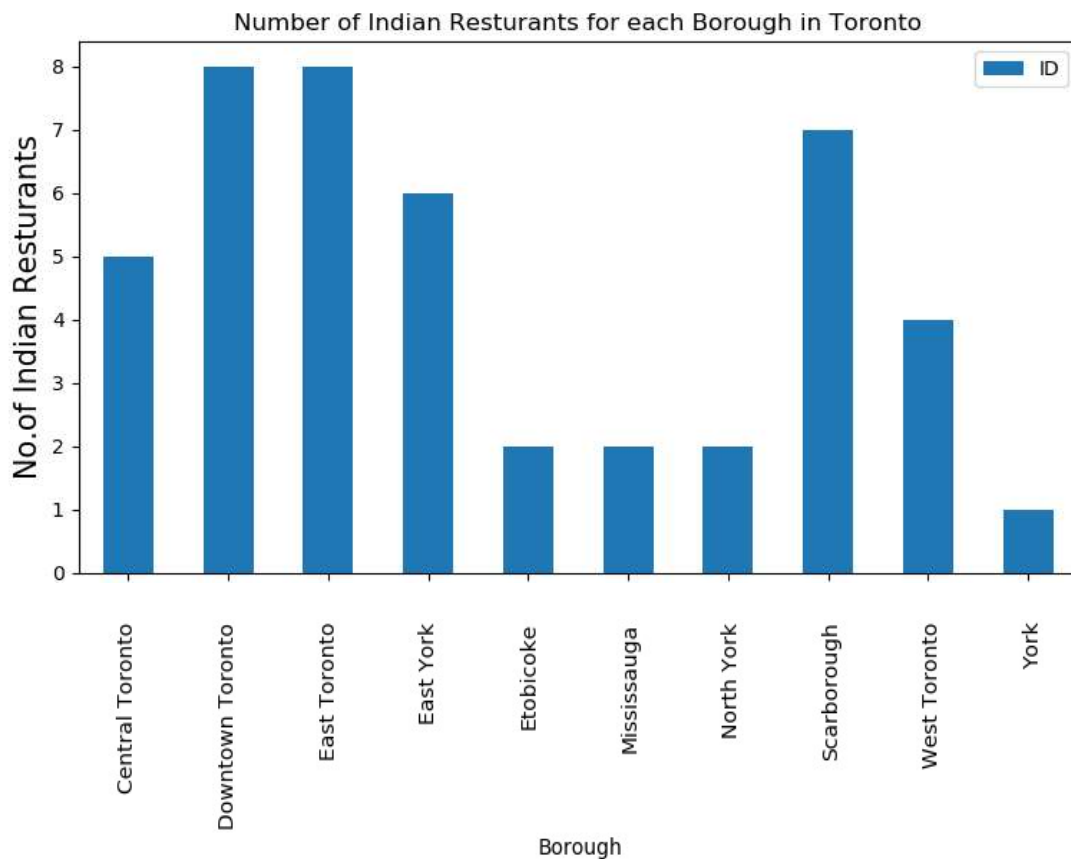
```
[27]: (103, 5)
```

The above result shows that there are 103 different Neighborhoods in Toronto.

- **We will find all venues for each neighborhood using FourSquare API.**
- **We will then filter out all Indian Restaurant venues.**

```
[216]:    indian_rest_Tr.head()
```

	Postcode	Borough	Neighbourhood	ID	Name
0	M5A	Downtown Toronto	Regent Park, Harbourfront	4af9a379f964a520c91222e3	Bombay Palace
1	M5A	Downtown Toronto	Regent Park, Harbourfront	52af6dc5498e33995b0bbf03	Sultan Of Samosas
2	M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government	4bedf8b5e24d20a17b567214	Kothur Indian Cuisine
3	M4E	East Toronto	The Beaches	4dcd7c6352b1f8915b7e7f7e	Delhi Bistro
4	M1G	Scarborough	Woburn	4c632edeedd320a19ad5ae29	Bombay Palace

- **Next we will visualize the Number of Indian Restaurant**

With the above Bar chart we can conclude that **Downtown Toronto and East Toronto** has maximum number of Indian restaurant and **York** has least no of the Indian restaurant.

- **Next using FourSquare API, we will find the Ratings, Tips, and Like count for all the Indian Restaurants.**

3

```
[225]: indian_rest_stats_Tr.head()
```

	Postcode	Borough	Neighbourhood	ID	Name	Likes	Rating	Tips
0	M5A	Downtown Toronto	Regent Park, Harbourfront	4af9a379f964a520c91222e3	Bombay Palace	14.0	7.2	13.0
1	M5A	Downtown Toronto	Regent Park, Harbourfront	52af6dc5498e33995b0bbf03	Sultan Of Samosas	9.0	6.8	4.0
2	M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government	4bedf8b5e24d20a17b567214	Kothur Indian Cuisine	16.0	8.1	19.0
3	M4E	East Toronto	The Beaches	4dcd7c6352b1f8915b7e7f7e	Delhi Bistro	6.0	7.0	3.0
4	M1G	Scarborough	Woburn	0	0	0.0	0.0	0.0

- **Next we will find out top 5 Indian restaurants with Maximum Likes, Maximum Ratings and Maximum Tips**.

  Maximum Like:

Name	Likes	Rating	Tips
Banjara Indian Cuisine	142.0	8.8	75.0
Udupi Palace	79.0	8.4	31.0
Mother India	45.0	8.0	31.0
Roti Cuisine of India	40.0	8.8	19.0
Indian Roti House	38.0	7.1	14.0

  Here Banjara Indian Cuisine got Maximum like.

  Maximum Rating:

Name	Likes	Rating	Tips
Banjara Indian Cuisine	142.0	8.8	75.0
Roti Cuisine of India	40.0	8.8	19.0
Butter Chicken Factory	18.0	8.4	10.0
Udupi Palace	79.0	8.4	31.0
Curry Twist	20.0	8.3	17.0

  Here Banjara Indian Cuisine got Maximum Rating.

Maximum Tips:

Name	Likes	Rating	Tips
Banjara Indian Cuisine	142.0	8.8	75.0
Mother India	45.0	8.0	31.0
Udupi Palace	79.0	8.4	31.0
Karaikudi Chettinad South Indian Restaurant	27.0	6.5	23.0
Madras Masala	35.0	7.9	21.0

Here Banjara Indian Cuisine got Maximum Tips

By analyzing the above data we can conclude that **Banjara Indian cuisine** is the *best* restaurant in Toronto.
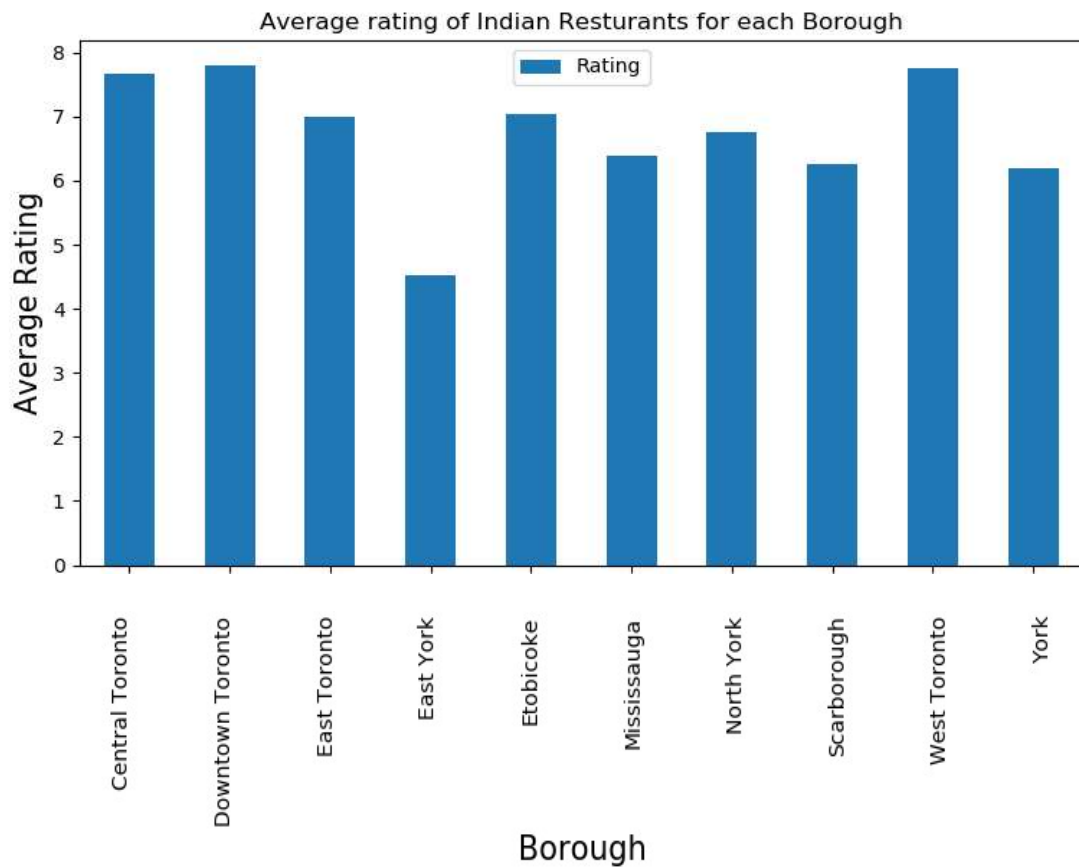
- **Next we will find the average rating of Indian Restaurants for each Borough.**

[196]:

	Borough	Average Rating
1	Downtown Toronto	7.80
8	West Toronto	7.75
0	Central Toronto	7.66
4	Etobicoke	7.05
2	East Toronto	7.00

We can conclude that Downtown Toronto Higher number of average Rating i.e (7.80) followed by West Toronto which has (7.75) average rating

Lets visualize

Average rating of Indian Resturants for each Borough

Result:

So now we can answer the questions asked above in the Questions section of the notebook.

From our analysis the answers to the above questions are:

1. Which the major part of Toronto that has more Indian restaurant?

Downtown Toronto and East Toronto has greater number of Indian restaurant

2. What is best location in Toronto for Indian cuisine?

Downtown Toronto Higher number of average Rating i.e (7.80) followed by West Toronto which has (7.75) average rating

3. Which area lacks Indian restaurant?

York has less number. of Indian restaurant

Conclusion:

1. *Banjara Indian cuisine* is the *best* restaurant in Toronto
2. *Downtown Toronto* and East Toronto has greater number of Indian restaurant
3. Downtown Toronto Higher number of average Rating i.e (7.80) followed by West Toronto which has (7.75) average rating
4. York has less number. of Indian restaurant
5. York can be the potential place for opening Indian Restaurant