The Battle of Neighborhoods

(Applied Data Science Capstone Project)

Detecting location Information for Opening Indian restaurant in Toronto ,Canada

1. Introduction :

1.1 Background -

Canada is a country in the northern part of North America. Its ten provinces and three territories extend from the Atlantic to the Pacific and northward into the Arctic Ocean, covering 9.98 million square kilometers (3.85 million square miles), making it the world's second-largest country by total area. Its southern and western border with the United States, stretching 8,891 kilometers (5,525 mi), is the world's longest bi-national land border. Canada's capital is Ottawa, and its three largest metropolitan areas are Toronto, Montreal, and Vancouver. Canadians of South Asian descent are one of the largest non-European ethnic groups in Canada (second only to Chinese-Canadians), making up the tenth largest ethnic group in the country. In the 2016 census, 1,963,330 people of South Asian origin were recorded as calling Canada 'home'. Canada contains the world's eighth largest Indian diaspora. The largest group of Indian Canadians are of Punjabi origin, accounting for around 50 percent of the Indo-Canadian population.The highest concentrations of Indian Canadians are found in the provinces of Ontario and British Columbia, followed by growing communities in Alberta and Quebec as well, with the majority of them being foreign-born.

1.2 Business Problem -

So looking at the diverse Indian population in Canada, it's a good Idea to start an authentic Indian restaurant to fulfill the taste demand of the Indian in Canada and extend the business of the restaurant chain across the boundaries.
To find a the answers to following:
- List all major parts of Toronto that already have Indian restaurants.
- Find the best location in Toronto for Indian Cuisine.
- Find areas in Toronto have Potential Indian restaurant Market.
- Find areas in Toronto that lack Indian restaurants.
- Which is the best place in Toronto to stay if you prefer Indian Cuisine.

1.3 Interest -

Obviously , The Restaurant owners would be very interested in getting the location information of various areas that will be beneficial for them to open a new authentic Indian Restaurant.

2. Data acquisition and cleaning :

2.1 Data Source -

For this Project we need the following data:
- Toronto City data that contains the list Boroughs, Neighborhood and Postal Code.
- Data Source : https://en.wikipedia.org/wiki/List_of_postal_codes_of_Cana da:_M
- Data Source: http://cocl.us/Geospatial_data.
- Description: These data sets collectively contain the required information. And we will use this data set to explore various neighborhoods of Toronto.
- Indian restaurant in each neighborhood of Toronto.
  - Data source: Foursquare API.
  - Description: By using this API we will get all the venues in each neighborhood. We can filter these venues to get only Indian restaurants.

2.2 Data Cleaning -

For the analysis and finding the required information from the data we would discard the 'Not assigned' Neighbourhood because it will create difficulty in generating the location coordinates.

2.3 Feature Selection -

From the Canada location dataset we would require Postal codes , which will be required to merge the Canada location dataframe with the latitude and longitude dataframe.

Neighborhoods will be required for getting names of the areas, and most important one are the latitude and longitude coordinates.

After we have the Venues information around different Neighborhoods we would require the Venue_id of the venue for finding important details related to the venues.

3. Exploratory Analysis :

To find the answers related to the above tasks had performed the following steps:

- Firstly , we found the various different venues in the nearby neighborhood of Toronto and related information about the venues like most important one is the Venue_id.
- Once we collected the Venue_id for each venue we found that there are Same Indian Restaurant in different locations in Toronto.
- From this data we found the number of restaurants in a particular neighborhood.
- From this we were able to answer the locations which have an already established Indian Restaurant Market.
- From this data we were also able to answer that which are the potential areas to open an Indian Restaurant.
- By using the venue data of various different venues we could find out the customers rating to the restaurants which have been rated on actual customer experience.
- From this we found the best restaurant serving Indian Cuisine.
- And once we found the best restaurants nearby it could suggest favourable places to stay if someone prefers to have Indian Cuisine.
- In this way we have found the answers to various questions in the task.

4. Conclusions :
So we can conclude that under the range of 5 km the above areas have a very good and established Market of Indian Restaurant.
- Davisville.
- India Bazaar, The Beaches West.
- North Toronto West, Lawrence Park.
- Roselawn.

So if someone prefers to have Indian Cuisine they should prefer to stay in such Neighborhoods.

whereas the areas like :

- Christie.
- Studio District.
- Summerhill West, Rathnelly, South Hill, Forest Hill SE, Deer Park.
- The Annex, North Midtown, Yorkville.
- The Danforth West, Riverdale.

lacks in the no. of Indian Restaurant.

The most important thing is that the neighborhoods which have an average no. of Indian restaurants have a good potential market for Indian Restaurant owners because of the following reasons.

- It has less competition than the more established Market and it is not very much far from them also.
- Due to less no. of Indian Restaurant in the Neighborhood, a new restaurant gives customers opportunities to choose.
- Get more chances to establish itself.

    - We have listed the Neighbourhood which has an established Indian Restaurant Market.
    - We have found the best locations in Toronto to have Indian Cuisine, which is Pukka Restaurant. since there are mulitple branches of Pukka Restaurant one could try any of the following:
        - Pukka Restaurant ,Davisville North   .
        - Pukka Restaurant ,North Toronto West, Lawrence Park.
        - Pukka Restaurant ,Summerhill West, Rathnelly, South Hill.
        - Pukka Restaurant ,Roselawn.
        - Pukka Restaurant ,Forest Hill North & West, Forest Hill Road Park.
        - Pukka Restaurant ,The Annex, North Midtown, Yorkville.
        - Pukka Restaurant ,Christie.
        - Pukka Restaurant ,Dufferin, Dovercourt Village.
        - Pukka Restaurant ,High Park, The Junction South.
        - Pukka Restaurant ,Parkdale, Roncesvalles.
    - we have found the best places to stay if you prefer to have Indian Cuisine.