Coursera Capstone

IBM Applied Data Science Capstone

Opening a New North Indian restaurant in Toronto, Canada

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Introduction

▶ For this venture, I am expecting a speculative situation of an idea Indian business visionary who needs to investigate opening a solid , North Indian eatery in Toronto, Canada.

▶ The thought behind this venture is that there may not be sufficient Indian restaurant in Toronto and it may show an incredible open door for this business person who is situated in Toronto. The business visionary needs to open the eatery close to other Indian eateries since individuals who like Indian nourishment may will in general like North Indian nourishment.

▶ Finding the area to open the eatery is the most significant and critical choice for the business person and this task is tied in with helping him locate the ideal area.

Business Problem

- The objective of this capstone project is to analyse and select the best locations in the city of Toronto, Canada to open a new Restaurant .

- Using data science methodology and machine learning techniques like clustering, this project aims to provide solutions to answer the business question:

- In the city of Toronto,Canada if a property developer is looking to open a new Restaurants , where should he consider opening it?

DATA

- List of neighbourhoods in Toronto . This defines the scope of this project which is confined to the city of Toronto, the city of the country of Canada .

- Latitude and longitude coordinates of those neighbourhoods. This is required in order to plot the map and also to get the venue data.

- Venue data, particularly data related to restaurant particular of Indian restaurant . We will use this data to perform clustering on the neighbourhoods

Sources of data

- Scrapping of Toronto Neighborhood data via Wikipedia
- Getting the latitude and Longitude of this neighborhood using the Geocoder package.
- Using Foursquare API to get the venues related to this neighborhood.
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- Getting the latitude and Longitude of this neighborhood using the Geocoder package.
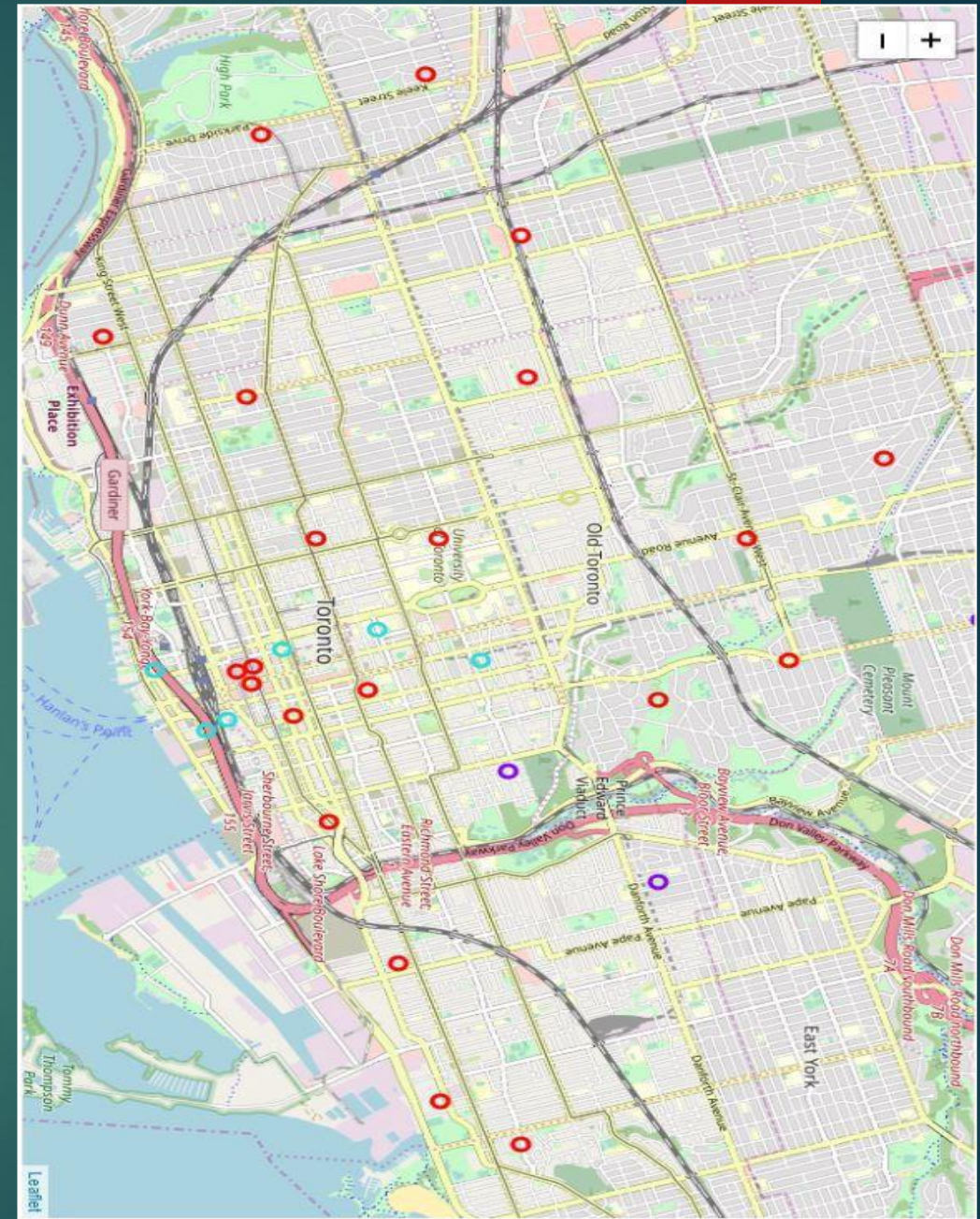- Using Foursquare API to get the venues related to this neighborhood

Methodology

▶ Web scraping Wikipedia page for neighborhoods list

▶ Get latitude and longitude coordinates using Geocoder

▶ Use Foursquare API to get venue data

▶ Group data by neighborhood and taking the mean of the frequency of occurrence of each venue category

▶ Filter venue category by Restaurant

▶ Perform clustering on the data by using k-means clustering
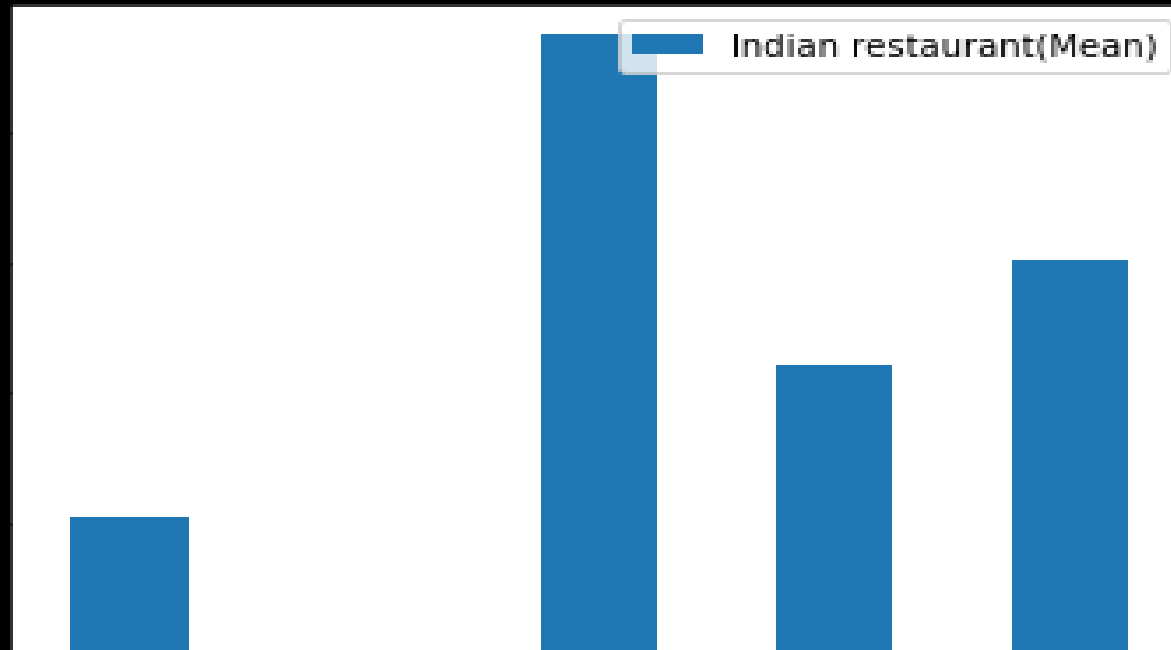
▶ Visualize the clusters in a map using Folium

Results

Categorized the neighborhoods into 5 clusters :

▶ Cluster 0: Neighborhoods with moderate number of Indian restaurant

▶ Cluster 1: Neighborhoods with low number to no existence of Indian restaurant

▶ Cluster 2: Neighborhoods with high concentration of Indian restaurant

▶ Cluster 3: Neighborhoods with little more Indian restaurants than cluster 0 .

▶ Cluster 4 : Neighborhoods with little more than cluster 3 ,but less than cluster 2 Indian restaurants

Discussion

▶ Most of the Indian restaurant are concentrated in the cluster 2

▶ Highest number in cluster 2 and moderate number in cluster 0

▶ Cluster 1 has very low number (equal to 0) to no shopping mall in the neighborhoods

▶ Over supply of Indian restaurant mostly happened in the cluster 2 with the suburb area still have very few shopping malls

Recommendations

▶ The greater part of the Indian eateries are in Cluster 2 which is around The Annex, North Midtown, Yorkville.

▶ Most reduced (near zero) in Cluster 1 and Cluster 0 territories which are Downtown Toronto, east, west, focal Toronto regions. Likewise, there are acceptable chances to open close to Downtown, east, west Toronto as the challenge appears to underneath.

▶ Taking a gander at close by scenes, it appears Cluster 0 and group 1 may be a decent area as there are not a great deal of indian cafés in these territories.

▶ Thusly, this undertaking prescribes the business visionary to open a solid North Indian eatery in these areas with next to zero challenge.

THANKYOU