



CAPSTONE PROJECT

IBM DATA SCIENCE SPECIALISATION

COMPARING 2 POPULAR CITIES OF INDIA
AMRITSAR AND DELHI

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BUSINESS PROBLEM

Amritsar and Delhi are the 2 popular cities in India . Both of these cities are located in North India. So, with this project we shall compare these 2 cities on the basis of the popular venues in these cities using the neighborhood data. By this project we shall see the similarities and dissimilarities between these 2 cities. This is a project that attempts to analyze the neighborhoods in each of these two cities and tries to understand what is popular in them and what they have to offer to someone who is contemplating to make a choice on seeking a life in either of the cities. The business problem in this study assumes that people who would be interested in this study are those who would like to create a projection of potential life and activities in the neighborhoods of the city if the subject moves to live in one of them. The decision to choose one over the other would depend on popular venues in the neighborhoods in each of these cities.

DATA



- ▶ DATA REQUIRED
 - ▶ List of neighbourhoods of Amritsar and Delhi
 - ▶ Latitude and Longitude data related to neighbourhoods
 - ▶ Data of venues
- ▶ SOURCES OF DATA
 - ▶ Dataset of neighborhoods (Click [here](#))
 - ▶ Pgeocode package for latitudes and longitudes
 - ▶ Foursquare api for venue data

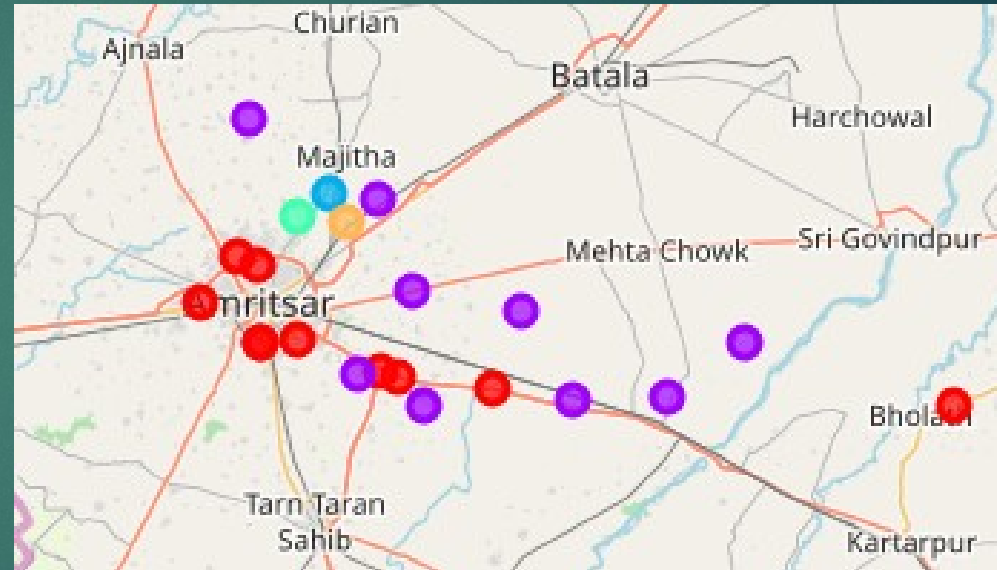
Methodology

- ▶ Read the data of Amritsar and Delhi into 2 dataframes
- ▶ Get latitude and longitude for neighbourhoods using pgeocode
- ▶ Use Foursquare Api to get venue data with 2000 metre radius
- ▶ Group data by neighbourhood by taking mean of frequency of occurrence of each venue category
- ▶ Sort the venues data by most common venues in neighbourhood
- ▶ Perform clustering on data using k-means clustering
- ▶ Visualize clusters formed on a folium map

RESULTS

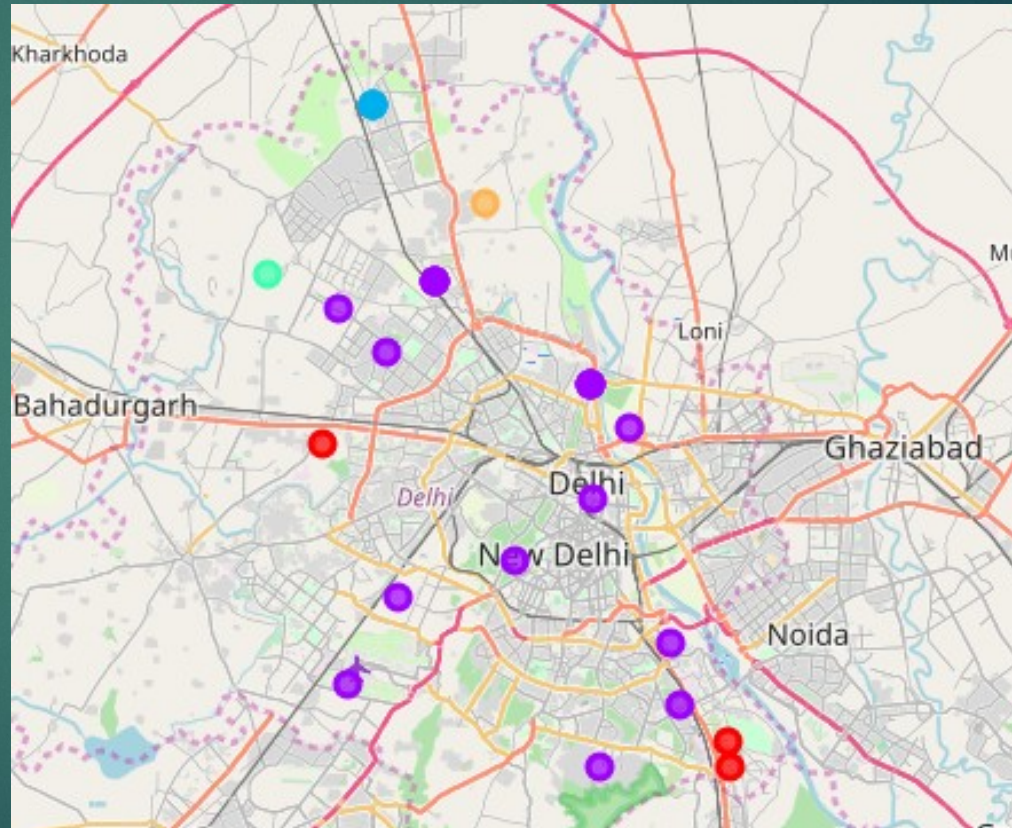
Clusters formed for Amritsar

- Cluster 0 is popular with Cafe, Vegan restraunts, Theme park, Punjabi Restraunts, ATM
- Cluster 1 is popular with ATM's, Dhaba, Toll booth, Super markets
- Cluster 2 is popular with farm, vegan restraunts
- Cluater 3 is popular with Clothing store Vegan restraunts
- Cluster 4 is popular with Indian restraint, Toll booth, Accessorie store



Clusters Formed for Delhi

- Cluster 0 is popular with train stations, ATM's and Indian restraunts
- Cluster 1 is popular with Café, hotel, Restraunts, flea market, mobile phone shops
- Cluster 2 is popular with women's store, ATM's, Electronic stores
- Cluster 3 is popular with ATM, Vietnamese restraint
- Cluster 4 is popular with farm and resort



Discussion

Given the cluster information for both Amritsar and Delhi, we see that both these cities and its neighbourhoods are a great place for a foodie. There are a lot of restaurants, cafes, bars, etc in these neighbourhoods. The difference is that Amritsar is popular for most probably Vegan, Indian and punjabi restraunts but apart from indian food Delhi also offers all types of international cusines. Thus Delhi is more preferable for foodies and Amritsar is also preferable for foodies who like vegetarian food. Thus But Amritsar also has theme parks, museums which would be good for tourists.

Another observation is that the number of venues Delhi has to offer are far too many as compared to Amritsar. This means Amritsar becomes restrictive in terms of variety and convenience. So, it depends on the choices, needs and preferences of the person where he would like to live.

Conclusions

In this project, we have analyzed the neighborhoods of India's two prime cities Amritsar and Delhi on the basis of their top and popular venues. We have clustered the neighborhoods based on top 5 most common venues in the neighborhood of each of these cities. My intention with this project was to analyze and understand the difference in the type of life in these cities, which can offer decision points for anybody who is considering to settle in either of these cities and can get a peek into what type of experience and facilities he will be provided with.



THANK YOU