Introduction: Business Problem

Delhi is the capital of India and it is one of the oldest cities in India. According to the 2011 census, Delhi's city proper population was over 11 million, the second-highest in India after Mumbai. As India's national capital and centuries old Mughal capital, Delhi influenced the food habits of its residents and is where Mughlai cuisine originated. Along with Indian cuisine, a variety of international cuisines are popular among the residents. The dearth of food habits among the city's residents created a unique style of cooking which became popular throughout the world, with dishes such as Kebab, biryani, tandoori. The city's classic dishes include butter chicken, dal makhani, shahi paneer, aloo chaat, chaat, dahi bhalla, kachori, gol gappe, samosa, chole bhature, chole kulche, gulab jamun, jalebi and lassi.

In this project will try to find an optimal location for a restaurant. Specifically, this report will be targeted to stakeholders interested in opening an Indian Cuisine restaurant in Delhi, India. Finding a suitable location for restaurants in major cities like Delhi proves to be a daunting task. Various factors such as over-saturation or no demand, for the type of restaurant that the customer wants to open, effect the success or failure of the restaurant. Hence, customers can bolster their decisions using the descriptive and predictive capabilities of data science.

We need to find locations (Neighborhood) that have a **potentially unfulfilled demand** for Indian Restaurant. Also, we need locations that have **low competition and are not already crowded**. We would also prefer location as close to popular city Neighborhood, assuming the first two conditions are met.

We will use our data science powers to generate a few most promising neighbourhoods based on this criteira. Advantages of each area will then be clearly Expressed so that best possible final location can be chosen by stakeholders.

Data Acquisition and preperation

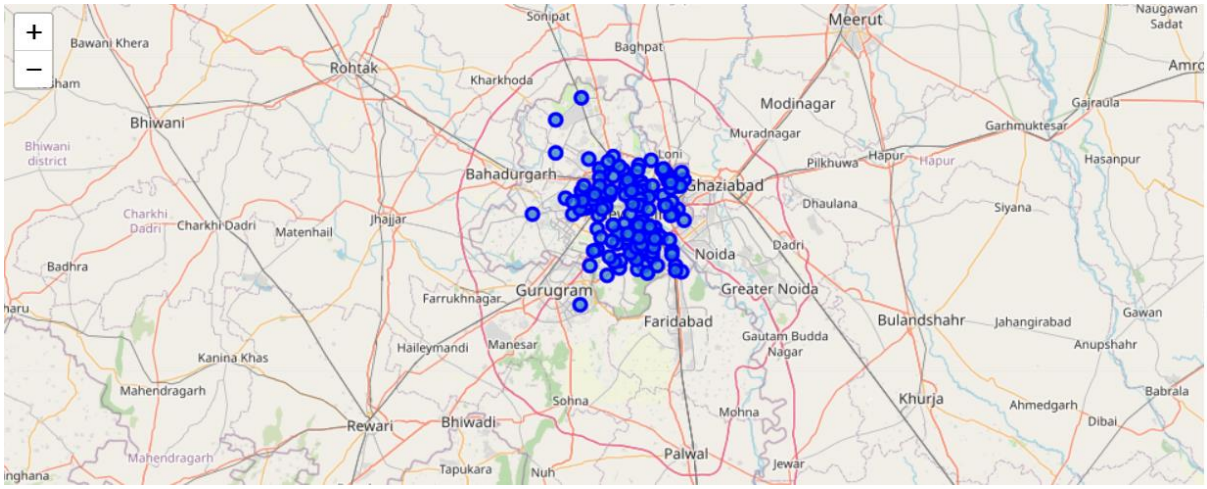
Based on definition of our problem, factors that will influence our decission are:

- number of existing restaurants in the neighborhood (any type of restaurant)
- number of and distance to Indian restaurants in the neighborhood, if any
- distance of neighborhood from popular neighborhoods

In our project we will:

- acquire the names and boroughs of the neighborhoods by scrapping a wikipedia page.
- After we have got the names of all the neighborhoods, we will geocode them using the library geopy.geocoder (Nominatim).
- Next, we use the foursquare API to find all types of restaurants within a 1000 meter radius for every neighborhood.

Delhi Neighbourhood Map



Delhi's major restaurant Map

Delhi Dataset

	Borough	Neighborhood	latitude	longitude
0	North West Delhi	Adarsh Nagar	28.614192	77.071541
1	North West Delhi	Ashok Vihar	28.699453	77.184826
2	North West Delhi	Karala	28.735140	77.032511
3	North West Delhi	Model Town	28.641926	77.221750
4	North West Delhi	Narela	28.842610	77.091835

Restaurant Dataset

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Adarsh Nagar	28.614193	77.071541	Eagle Boys Pizza	28.615595	77.070784	Pizza Place
1	Adarsh Nagar	28.614193	77.071541	Bikanerwala	28.613391	77.076084	Indian Restaurant
2	Adarsh Nagar	28.614193	77.071541	Bikano East Patel Nagar	28.616190	77.066978	Fast Food Restaurant
3	Adarsh Nagar	28.614193	77.071541	McDonald's	28.616330	77.067034	Fast Food Restaurant
4	Ashok Vihar	28.699453	77.184826	Nat Khat Caterers	28.699630	77.187832	Indian Restaurant

Summary

We have, as a result, generated two data Sets.

- The first was the data set(delhi_data) that contained the borough, name, Latitude and Longitude of all the major Neighborhoods of Delhi
- And, the second data set(delhi_venues) contained the geographical information pertinent to all the major restaurants in delhi