Capstone Project – Exploring Delhi

1. Introduction: -

1.1 Background:

Delhi, India's capital territory, is a massive metropolitan area in the country's north. It is the largest commercial centre in northern India. As of 2016 recent estimates of the economy of the Delhi urban area have ranged from $167 to $370 billion (PPP metro GDP) ranking it either the most or second-most productive metro area of India. The nominal GSDP of the NCT of Delhi for 2016–17 was estimated at ₹6,224 billion (US$90 billion), 13% higher than in 2015–16. The NCT covers an area of 1,484 square kilometres (573 sq. mi). According to the 2011 census, Delhi's city proper population was over 11 million, the second-highest in India after Mumbai, while the whole NCT's population was about 16.8 million. Large number of people from all over the world come to Delhi for different kinds of purposes such as study, career, business, etc. Hence this city hosts all kinds of people be it unskilled or skilled like Software professionals, Government officials, Diplomats, Administrators, Students and so on. Through this project I will explore this beautiful city so that the new comers can decide which area/neighbourhood they would want to stay in or figure out the best places to eat/shop.

1.2 Problem:

Finding a best place for living is very difficult in the place like Delhi because of such a large population and variety. Everyone's lifestyle is different from each other and their preference of locality as well as food might also different so user wants to explore the places where they can live their lifestyle easily and food is also available of their preferences. Lot of time is going to use for this purpose and you have to travel a lot for it. As time is very precious in today's busy world, so finding best place to stay is very close to impossible i.e. you have to compromise with your lifestyle but through this project this big problem is easily solved.

2. Data Section:

- I made use of a python library called ***pgeocode*** which is a high-performance off-line querying of GPS coordinates, region name and municipality name from postal codes. Distances between postal codes as well as general distance queries are also supported. The used GeoNames database includes postal codes for 83 countries.

  I used ' *index* postal_codes' function which creates a data frame of unique postal codes of a given country. The data frame consists of following columns:
  - country code: iso country code, 2 characters
  - postal code: postal code

- place name: place name (e.g. town, city etc)
- state_name: 1. order subdivision (state)
- state_code: 1. order subdivision (state)
- county_name: 2. order subdivision (county/province)
- county_code: 2. order subdivision (county/province)
- community_name: 3. order subdivision (community)
- community code: 3. order subdivision (community)
- latitude: estimated latitude (wgs84)
- longitude: estimated longitude (wgs84)
- accuracy: accuracy of lat/lng from 1=estimated to 6=centroid

Using this function, I first I obtained the postal code details for the entire country India and then queried the data to retain the postal codes of Delhi.

- I used **Foursquare API** to get the most common venues of given community of Bengaluru.

References:

1. **Delhi,** https://en.wikipedia.org/wiki/Delhi
2. ***pgeocode*** **(https://github.com/symerio/pgeocode)**