Data Analysis Report
on
Family Relocation to Mumbai, India

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Introduction

The Analysis is aimed at helping people looking to relocate to a new city(for better standard of living) along with their family.There are many factors that need to be taken into account for family looking to settle in a new city:

* Environmental conditions
* Availability of Standard Schools, Colleges, Hospitals etc near by
* Cost of real estate/ Rent
* Traffic conditions

It becomes a very cumbersome task for someone to find an appropriate location to settle down keeping in mind the above constraints. For the purpose of illustration i am focussing on the city of Mumbai(India) which is the financial capital of the country.
Thousands of people come to this city every year for better professional prospects.

This analysis will enable an individual/family to identify an optimal neighbourhood location to settle down with his family.

Data Gathering

Below are the data sources while would be utilised for the analysis:

- Mumbai Postcode data would be sourced from the website :https://mumbai7.com/postal-codes-in-mumbai/.
- Geospatial data for Mumbai Postcodes is imported into a CSV file from http://www.geonames.org/export/zip/IN.zip ZIP file.
- Mumbai Real Estate buy/ Rental rates fetched from https://www.kaggle.com/jedipro/flats-for-rent-in-mumbai/data

The Mumbai Postcode data can be joined with the Geospatial data to plot the various locations on the Mumbai map. This data can be then combined with the Real Estate/Rental data to narrow down the areas which are affordable for living.

The Foursquare API can be leveraged for information regarding Hospitals,Schools, Colleges, Mall, Parks to identify the most suitable location.

All the above information would assist an individual/family to make an informed decision in an effective and time efficient manner.

Methodology

Below are the assumptions made before the starting the analysis:

- The Family members (Father and Mother) have jobs in "Andheri East" area and are therefore looking to settle in location close to office in order to reduce as much travel time as possible.

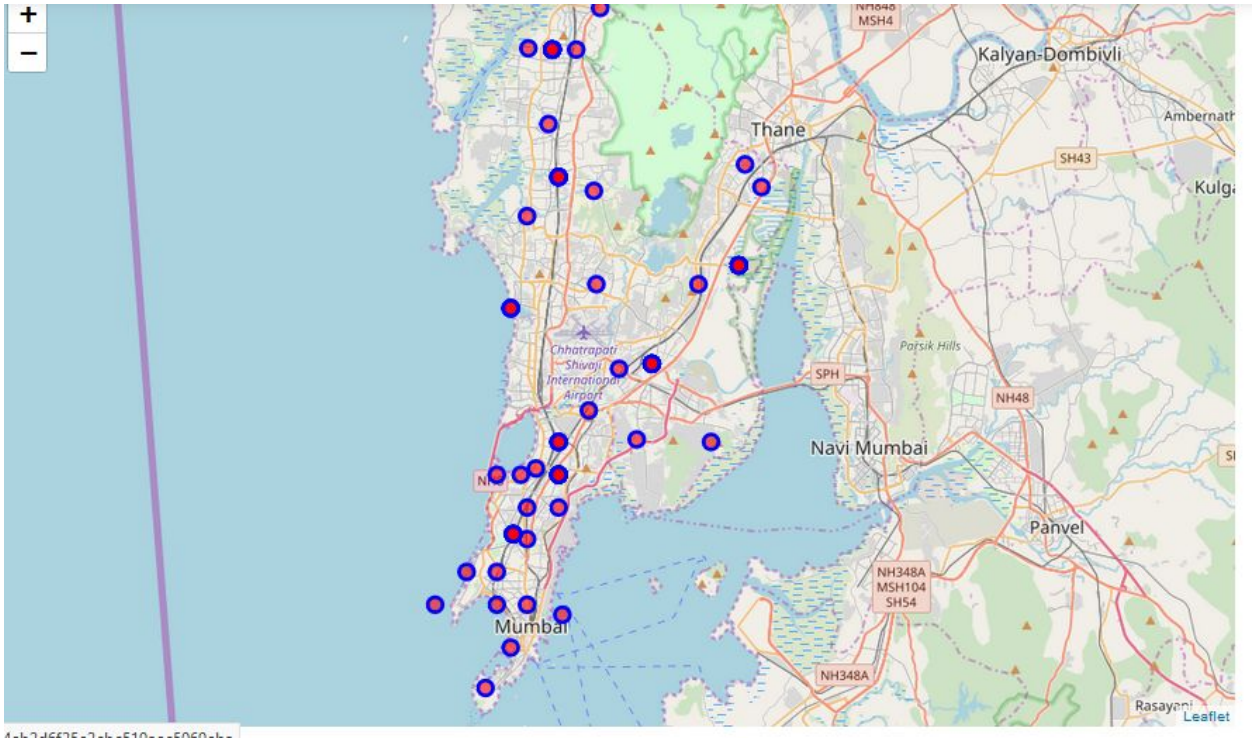
- The Family due to astronomical real estate prices is looking for a rental accomodation only.

In this project we would start by plotting all the prominent mumbai areas on the Map and analyse the areas in and around the location(Andheri East) using the Foursquare API to gain an idea regarding the proximity of facilities such as Hospitals, Banks, Malls, Parks, Educational institutions for the potential identified locations.

In addition, we also have the Apartment Rental Data for Mumbai Areas, which would greatly assist in the analysis keeping in mind the monetary constraints.

Analysis

Geospatial representation of the Mumbai area was plotted to gain a high level understanding:



Now supposedly we are interested in only 3 Bedroom flats, therefore filtering the data for 3 BHK flats in the Andheri East area.

Filtering the Rental Rates data on the above constraints and finding the Minimum rate:

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Minimum Rental Rate in Andheri East Area is :45000
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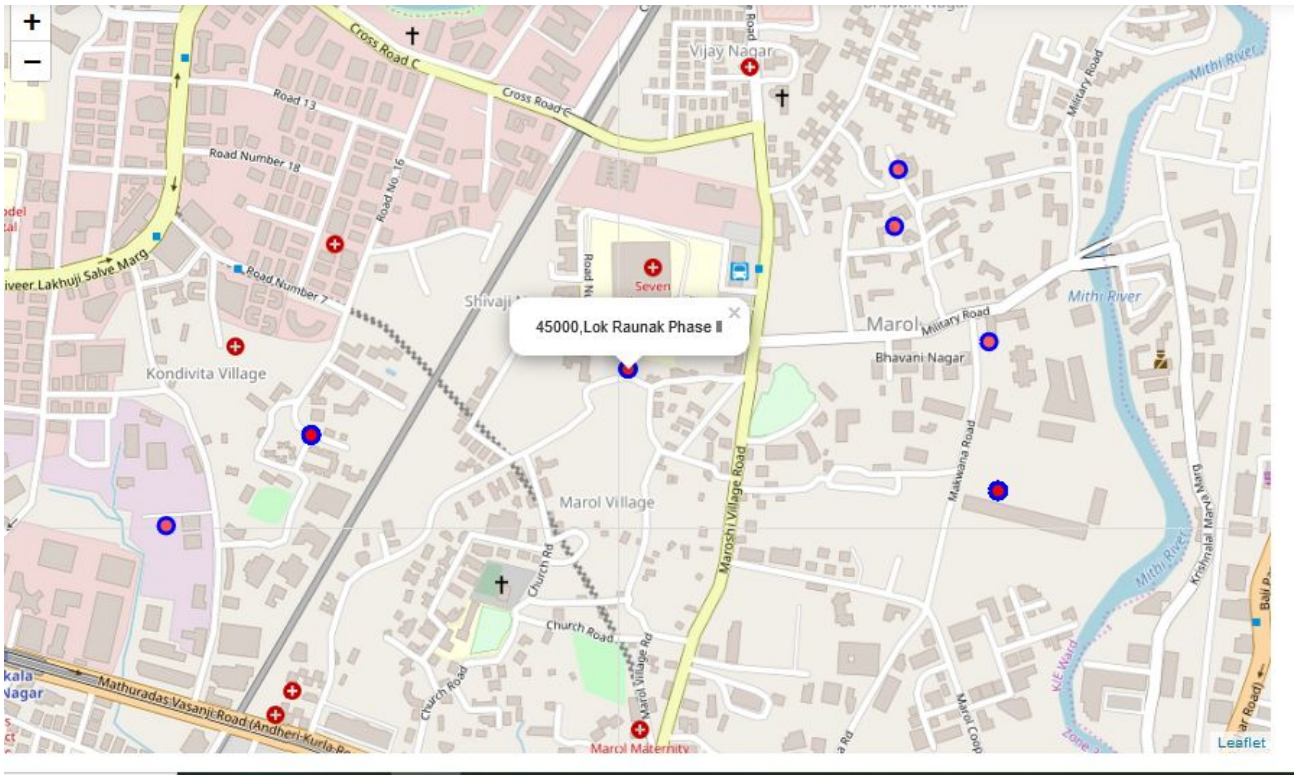
Out[12]:

	City	Locality	ProjectName	Area(SquareFeet)	Price	Type	Bathroom_num	Bedroom_num	Latitude	Longitude	post_date
115	Mumbai	Andheri East	Lok Raunak Phase II	1400	45000	Apartment	3	3	19.116525	72.877957	2019-12-19
125	Mumbai	Andheri East	Lok Raunak Phase II	1400	45000	Apartment	3	3	19.116525	72.877957	2019-12-14

Now focussing on the area where the Rental Rates are low:

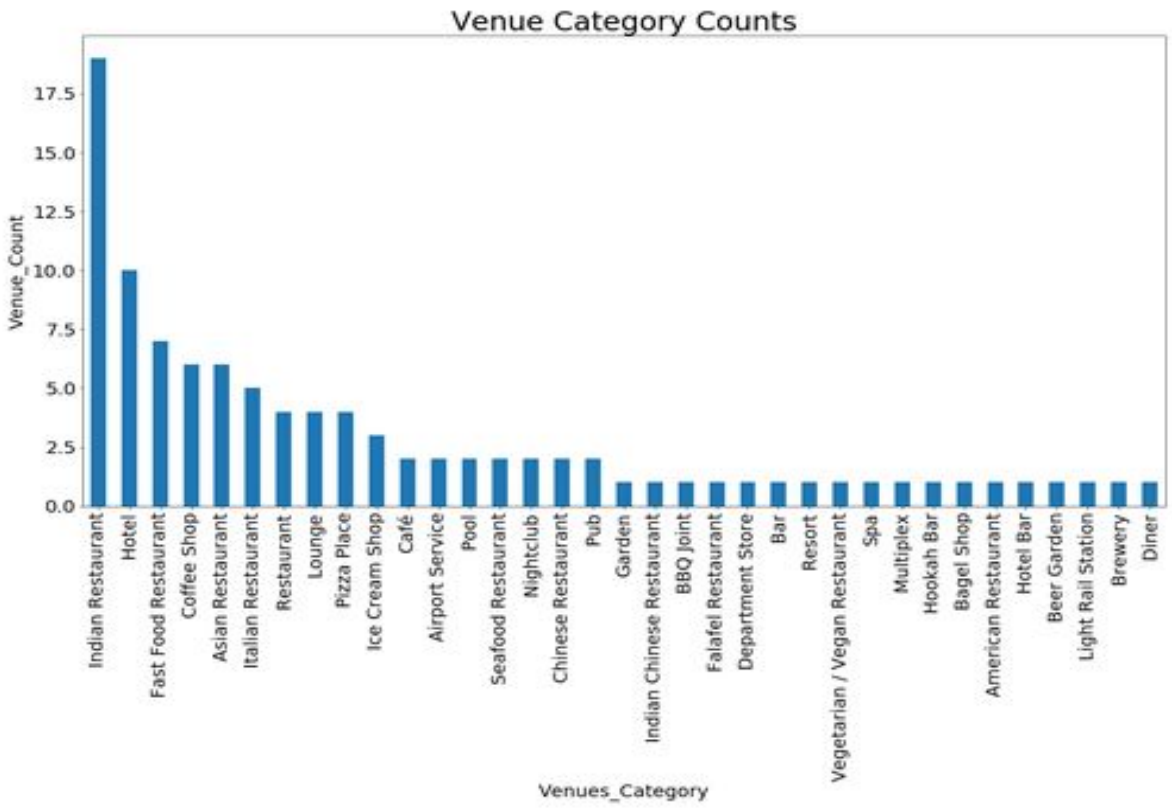
Utilising the above coordinates and performing a high level evaluation.



From the above map we can see that the location "Lok Raunak Phase II" apart from having a reasonable Rent is close to a Hospital, Metro Station and a Park as well.
We can further leverage the Foursquare Data to gain additional information

.Utilising Foursquare API to retrieve required neighbourhood data.

Fetching top 1000 venues that are near Lok Raunak Phase II within a radius of 2000 metres and plotting a Bar chart for the Venue Categories and count.



We can see there are numerous other facilities nearby like Restaurants, Departmental Stores, Multiplex etc , which makes this a sensible location to reside.

Results and Discussion

The Mumbai Postcode data in conjunction with the Foursquare and Rental rates data provided a base for a comprehensive analysis in order to determine an optimal location for settling down for a family.

Geospatial Map and Bar chart plot provided easily understandable and useful information to quickly and easily identify potential locations and assist in making an informed decision.

Conclusion

The above analysis was not of an investigative nature and nor was there any "pattern identification" intention.
Purpose was to assist an individual and his family to relocate to a new city using data which is publicly available.

From the above analysis we can conclude that any real world problem can be resolved if we have the right quantity and quality of data and adopt a creative approach to solve the problem.