

Battle of Neighborhoods

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Applied Data Science Capstone- Comparison of Room Rent in Navi Mumbai and Kolkata, India

1 Introduction

I am a PhD scholar residing in Kolkata, India. I currently live in Newtown and I enjoy many amenities and venues in the area, such as various restaurants, cafes, food shops and entertainment. I have shifted to Mumbai, India for working purpose. The key question is: How can I find a convenient and enjoyable place in Navi Mumbai similar to that in Kolkata? In order to make a comparison and evaluation of the rental options in Navi Mumbai, I must set some basis, therefore the apartment in Navi Mumbai must meet the following demands:

- Apartment must be 2 or 3 bedrooms
- Desired location is near a railway station in the Navi Mumbai area and within 2 km
- Price of rent not exceed INR 15,000 per month
- Top amenities in the selected neighborhood shall be similar to current residence
- Desirable to have venues such as market, restaurants, and wine stores

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2 Business Problem

- The challenge is to find a suitable apartment for rent in Navi Mumbai that complies with the demands on location, price, venues and so on.

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3 Data Section

- In this section, description of the data and its sources are illustrated that will be used to solve the problem.

3.1 Description of the Data

- The following data is required to answer the issues of the problem:
- List of Boroughs and neighborhoods of Navi Mumbai and New Town Kolkata with their geodata (latitude and longitude)
- List of apartments for rent in Navi Mumbai and New Town Kolkata area with their addresses and price
- Venues for each Navi Mumbai and New Town Kolkata neighborhood.

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3.2 How the data will be used to solve the problem

- The data will be used as follows:
- Using Foursquare and geopy data to map top 10 venues for all Navi Mumbai and New Town Kolkata neighborhoods and clustered in groups (as per Course LAB)
- Using Foursquare and geopy data to map the location of railway stations , separately and on top of the above clustered map in order to be able to identify the venues and amenities near each location.
- Using Foursquare and geopy data to map the location of rental places, in some form, linked to each location.
- Data will be searched in open data sources if available, from real estate sites if open to reading, libraries or other government agencies.

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The processing of these DATA will allow to answer the key questions to make a decision:

- What is the cost of rent (per square ft) in each location?
- What is the area of Navi Mumbai with best rental pricing that meets criteria established?
- What are the venues of the two best places to live? How the prices compare?
- How venues distribute between Navi Mumbai neighborhoods and New Town Kolkata?
- Are there tradeoffs between size and price and location?
- Any other interesting statistical data findings of the real estate and overall data.

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Methodology

- This section represents the main component of the report where the data is gathered, prepared for analysis. Please refer the Notebook cells which indicate the execution of steps.

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The analysis and the strategy

- The strategy is based on mapping the above described data, in order to facilitate the choice of at least two candidate places for rent in Navi Mumbai. The choice is made based on the demands imposed: rental price and similar venues to New Town, Kolkata.
- The processing of these DATA and its mapping will allow to answer the key questions to make a decision:
- What is the cost of available rental places that meet the demands?
- What is the cost of rent in each location?
- What is the area of Navi Mumbai with best rental pricing that meets criteria established?
- What are the venues of the two best places to live? How the prices compare?
- How venues distribute among Navi Mumbai neighborhoods and around railway stations?
- Are there tradeoffs between size and price and location?
- Any other interesting statistical data findings of the real estate and overall data.

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- **Results**

I found that amenities are more or less same in New Town, Kolkata and Navi Mumbai. 2 BHK flat in New Town Kolkata costs from INR 8000 to INR 15000 monthly and in Navi Mumbai costs INR 8000 to INR 25000. In the above exercises it is shown that both the area has almost same kind of amenities. So I believe I can safely take rent in Navi Mumbai.

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	name	categories	lat	lng
0	Flavours	Indian Restaurant	22.575677	88.482363
1	Tata Consultancy Services	IT Services	22.575630	88.482104
2	Cognizant Technology Solutions	IT Services	22.575618	88.482342
3	Accenture	Business Service	22.574783	88.483257

In the above table it has been shown that the New Town Kolkata area is business district although it has scope of recreation.

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	name	categories	lat	lng
0	Chavana Spa	Gym / Fitness Center	19.032892	73.029589
1	Blossom	Fast Food Restaurant	19.032595	73.029421
2	Guitar Hall – Guitar Academy And Boutique™ - N...	Music Venue	19.034091	73.028983
3	Martinez	Chinese Restaurant	19.029770	73.030586
4	CBD Belapur Nursery - Valley Park	Park	19.032099	73.033504

In the above table of Navi Mumbai , it is shown that in the area there are ample scope of recreation

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Discussion

- I feel this Capstone project presented me a great opportunity to practice and apply the Data Science tools and methodologies learned during my PhD studies (currently I am a PhD student at Indian Institute of Management). I have created a project that I can show my guide professor. I feel I have acquired a good starting point to use my skills in my PhD thesis work.

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Conclusion

- I feel rewarded with the efforts, time and money spent. I believe this course with all the topics covered is well worthy of appreciation. This project has shown me a practical application to resolve a real situation using Data Science tools. This is only starting point in my PhD course work. I will continue to learn. Thanks a lot to Coursera team.