**Revolutionizing Real Estate: Making Buying and Renting as Simple as Trading Stocks**



**[**Thank you for taking time to have a look on my project report. For getting basic idea of my project, you can read the first 5 pages of the report. For getting basic execution of the project, you can read the first 15 pages of the report. For getting detailed execution plan, which might be tedious, you must read the whole project. Thank you for your time and patience

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**Content**

1. Synopsis of the project
   1. Vision
   2. Problem
   3. Solution
2. Concise plan of the project
   1. Types of clients will be catering
   2. How will data be collected
   3. How will data be processed
   4. How will the data be presented
   5. What are the tools provided?
      1. Price estimates based on location and type of estates.
      2. Least distance parameter
      3. House prices parameter
      4. House rental parameters
      5. House price Growth Rate
      6. House rental Growth Rate
      7. Rental to Value ratio
      8. RVD
      9. Customer feedback
      10. Connecting Google maps for better visualisation.
   6. How will these benefit our clients
3. Elaborate plan of the project
   1. Data scrapping for house rates and rentals
   2. Hosting on AWS server
   3. Least distance parameter using KNN
   4. Building pipeline for automised daily analysis and hosting

**PART-1**

**Synopsis of the project**

**Vision**

Simplifying the analytics of the real estates similar to that done for the stock markets and make even a middle class person an active member of the real estate market by providing them necessary tools which are provided to them in the stock tradings.

**Problem**

Due to lack of proper segregation and analysis of real estate data, buying , selling and renting of real estates have been one of the tedious tasks in today’s world. This is situation is even worse India due to the fact that having atleast one own house is the prime dream of any middle class household person. Even though there is a high demand for the real estates in India, but due to complexity of buying a real estate (like the conditions of the houses and farm fields), the additional costs occurring to brokers and builders and also not having proper knowledge on the value of the region would often discourage them.

**Solution**

By using machine learning technologies around primary factors like distance to amenities from a given location, market price and rental price of properties, I believe in doing complicated analysis of the factors associated with the real estate and provide them the best results according to their needs and ability.

PART 2

Concise plan execution

Types of customers catering

Broadly speaking we will be having 3 kinds of customers – buyers, sellers and rentals.

And in them each of them has two categories

1. Buyers
   1. Buys for living in it
   2. Buys for investment
2. Sellers
   1. Sells as an investment
   2. Sells their own house for certain reasons
3. Rentals
   1. Rent in affordable areas
   2. Rent for comfort

How data will be collected?

Data will be collected by web scrapping all the listing websites like makaan.com, Airbnb etc.

How will data be processed?

Data will be processed by applying special codes for different region based on their country, state, district and village. And these will have their house prices and rental averages in each location.

Example : for suryodaya society present in sec-48, seawoods darave, navi Mumbai, Maharashtra, India the code will be 9120857148

Where

91 – India

20 – Maharashtra

85 – Navi Mumbai district

71 – Seawood Darave

48 – sec-48

This will be the code for a location. This coding will also help in concising the cities to minimum through which further analysis can be done efficiently. We can also try one hot encoding if possible. But considering the number of locations, I think one hot encoding will fail.

How will data be presented?

Data will be presented as google maps where the user can mark the area in which they would like to buy houses or fields. And also user gives some input regarding their needs. Like getting house in Mumbai of 100 m^2 house having 1bhk with maximum budget of 5000. After the averages and variance of all present in the area are found out, the respective listing will pop out with their parameters. And the ones with highest favourable parameters will be at top.

**What are the tools provided?**

Price estimates based on location and type of estates.

In this the cleaned data is processed through machine learning models such that one easily access houses on the basis of BHK, location and other inbuilt house qualities.

Least distance parameter (LDP)

This will be a break through parameter which hasn’t been implemented in the listing portals. In this we will set one prime centre which will be the main factor for buying (example, a working professional would prefer to have house near workplace for less commute time). And also based on other amenities like hospitals, grocery markets etc, we will decide which location has amenities more nearest in the area where main factor (in this case workplace) is the centre of the circle.

House price growth parameters

This will show how the house prices in same location with respect to different upgradation in house. Like 1bhk, 2bhk, attached bathroom etc changed over a period of time. This will show how fastly an area is getting in demand for buying and selling. Basically a numerical quantity describing its average growth per year.

House rental growth parameters

This will show how the house rental changes in same location with respect to different upgradation in house. Like 1bhk, 2bhk, attached bathroom etc over a period of time. This will show how fastly an area is getting in demand for rentals. Basically a numerical quantity describing its average growth per year.

House price growth parameters

This will be a slide bar function which by adjusting, you can get different locations at that budget

House price parameters

This will be a slide bar function which by adjusting, you can get different locations inside the circle at that budget.

House rental parameters

This will be a slide bar function which by adjusting, you can get different locations inside the circle at that budget.

Rental to Value ratio

This is the ratio of rental price to value price of the given location. This gives valuable judgement power to customer. Lower the value, better for rentals and worser for buyers. Higher the value, better for buyers and worse for rentals.

Customer feedback

This will be add on feature proving legitimacy of claims claimed by sellers and renters.

Integrating Google maps

By getting commute times and visualisation of all locations on a single chart, it will be much easier to narrow down the desired location by mere speculation.

In short

1. Select a location around which you want your house. It can be work place or a good location
2. Price estimates will be done in the circle with that location in the middle.
3. The estimates which matches with the customer’s budget will be taken.
4. The listing through which the estimates have been done will be plotted in a 3D graph with different parameters like Rent growth, house price growth and LDT. Based on one’s personal choices, the points present in the preferred bracket will be looked upon.
5. So basically 5 parameters
   1. Centre location
   2. Price
   3. LDT
   4. House price growth rate
   5. House rent growth rate

When you are sure about 2 of the 5 parameters, 3D plots can be built using remaining 3 parameters and best brackets can be obtained by further analysis. But centre location needs to be constricted upto an area, otherwise world wide data will be used up for that one query.

HOW WILL THIS BENEFIT OUR CUSTOMERS