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SMART REALESTATE: ADVANCE MACHINE LEARNING TECHNIQUES FOR PRICE PREDICTION

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ABSTRACT

Cities are expanding at a rapid rate and people are in increasing numbers in search of houses, flats, and land in current days. Due to this fact, easy and handy system of real estate should be valued. The project is a site known as Real Estate Management System. It assists individuals looking forward to purchasing or renting land as well as agent who would like to sell or list his property.

The site is created on the basis of PHP and MySQL and runs Python and machine learning. It is easy to navigate and secure thus both the admin and user can utilize it without an issue.

A price prediction system is one of the special features of this projectIn the project user will enter the particulars such as location, house size, and the number of rooms. Having received this information system will display one approximate price of the house. This will make people understand the value without having to go to different brokers. It also simple the way forward and makes it fair to everybody.

Keywords:*Real Estate, Price Prediction, Machine Learning, PHP, MySQL, Web Application.*

INTRODUCTION

The culture of the people and even the economy places large significance on real estate. But establishing the correct price of a house or land is not so easy. It is usually true that individuals consult brokers or follow documents made long ago but this is not always the case. The main aim of the Real Estate Price Prediction System is to deal with this issue. It is one of the sites where consumers can search, check, and even get price ideas in real time. It is an intuitive handy system to the user.

The value of property can never be constant since there are various factors that can cause the change like demand, supply, location and economy. The necessity to know the appropriate cost is quite high in such countries like India which now boasts about cities that grow fast. Consumers are interested in spending less money and not paying more than the market price, , not the loss of consumers. The system is beneficial because it provides an idea of the fair price with the help of machine learning. The system takes advantage of old data and trends unlike normal

property sites which just provide the seller price. This brings about transaction in purchases and sales more transparent and sincere.

The collaboration of various technologies also can be presented in this project. The site is created through the use of PHP and MySQL to manage data and user. It, also, employs Python in machine learning part. Liking these, the project demonstrates the way computer knowledge can be applied in life such as in the real estates and investments.

LITERATURE SURVEY

Several online real estate platforms exist, but most act only as catalogues, showing seller-entered prices without validation. Research shows that integrating data-driven techniques significantly improves property valuation. Existing systems often lack transparency and fail to distinguish user roles effectively. Our system addresses these limitations by integrating machine learning prediction with a structured, role-based web platform.

Past research in real estate valuation has shown significant reliance on manual appraisal methods. These methods involve human evaluators visiting properties and using comparable sales (also known as 'comps') to estimate the current value. While effective in smaller markets, such approaches do not scale well for large, fast-moving urban housing sectors. There is the possibility of bias or mistakes accompanied by people who check the property value by giving their own opinion. More recent technology like artificial intelligence and machine learning prompted the expert to conduct regressions, neural networks and mix model in a more accurate and equitable way to get to real estate price prediction.

In most research articles, it has been illustrated that supervised learning is applicable in price prediction. The Indian driver behavior can be learned using some of the following techniques: Linear regression, Decision tree, Random forest and Gradient boosting. These methods can be used to monitor the relationship between the variables of the sizes of the houses, location, various amenities and the resulting price. Nonetheless, the main problem is insufficient good and recent data and therefore, precision is low. In our project, to overcome these obstacles we have used the historic data of Bengaluru housing and programmed the system in such a manner that, more future data can be added in future and the model can be retrained.

The other problem noted in the studies is that a majority of the models are mathematical based models and therefore, cannot be easily used by ordinary individuals. In the majority of the papers only formulas have been formulated and not an easy system. Our project involves a web based application that in real sense implements experienced learning process but has not dictated the outcome in an intricate way. This makes it easier to all users not just technical persons, but also laymen to scrutinize house price in an understandable way.

EXISTING WORK

In our modern times, most individuals would visit online websites and applications when they are in need of finding a property to rent or buy a house.

. The majority of websites representing the real estate

industry only demonstrate properties that are up for sale with certain data such as the price, location, photos and contact number. This is wonderful but the problem is that the price dictated by a seller or agent alone. Such websites act like a catalogue in action; they do not mention whether the price is correct or acceptable in the market. The only thing that can be done by all people is to view properties as there is nothing that can be done to assist them to determine the option of whether or not buy a particular property. To illustrate, two houses in a single locality can be subjected to a large disparity in price yet the consumers do not know how it happens. They are forced to speculate or ask an agent and this wastes time and could drive them towards the wrong instruments.

Another problem is that in certain locations the price forecasting system is absent. This is unfavorable to the new users seeking to acquire information on property cost. They do not observe and understand who the owner of writing is that can be either accurate or inaccurate.

Other websites do not have different user roles. There is no correct way of admins to manage data and even agents cannot log in conveniently and fill information about their properties. This is good, but the problem is that, only the seller or an agent puts the price. The site does not enlighten to say whether the price is correct or reasonable as the market. This type of websites is a catalogue in motion. There is nothing that can be done to assist all these people to do their part of just looking through the properties and their only option is trying to decide on whether to buy a particular property or not. As an instance, two houses in the same locality could differ to a very considerable extent in price and yet the matter of that difference is unknown to the user. They have to speculate or ask an agent and this is time consuming, and could be misleading them to faulty ideas.

The second problem is that at certain sites it lacks a price forecasting mechanism. This is unfavorable to the new users who would like to learn about the cost of the property. They cannot see and know what owner writes as it may or may not be true.

Besides, other sites do not have defining user roles. Admins have no right and even the agents cannot go to their sites, log in easily and introduce information about properties.

PROPOSED SYSTEM

To solve the issues with the existing systems, we have created a new project called “Real Estate Price Prediction.” This system is designed to help users not just search for properties but also estimate their value using a simple calculator.

The main idea of our project is to let users enter some basic details about a property, like the area, location, and type of property (like flat, plot, etc.). The system provides an approximate estimate as to what the house price should be. This proves to be very useful to users who do not know much about the market to verify that the price visible is correct or not.

To develop this system we have used PHP on the

backend and MySQL on database. It is compatible web browser and can operate on XAMPP.

Its most outstanding feature is the cost predictor calculator It helps the consumers to be conversant with the price in advance upon calling or travelling there. This saves time, as well as confidence to know that one can compare the various properties. Students have also related well to our system to learn. They will realize the mechanism behind the implementation of the login system i.e. all data is stored on the backend and that metadata used in prediction does not use AI.

This was already a real-life problem solved and not only that the project also taught us how to work on a real life web application

METHODOLOGY

This system is fabricated on the basis of client-server model. It consists of 3 main bits frontend, backend, and machine learning.

Frontend (PHP): This is the section that a user is able to view and apply the site. They will be able to register, log-in and post property information such as location, number of bedrooms, bathrooms and the area.

The Back-end (My SQL): This is the information databank. The system maintains the records of the users, property related as well as the past predictions of the results Prediction using L earning Part (Python): This is part is utilized to predict the price. Libraries in data science that can be found in Python were a reason to opt so. The model operates Linear Regression in the simple cases and Random Forest in the difficult ones. Connection between PHP and Python is achieved by flask API. Flask sends the property information on to PHP when the user provides such information. Flask uses the machine learning model to give back the price. This output is indicated on this site. It performs in real time, thus the user does not take long in obtaining the answer. When the wrong information is inserted, e.g. negative area, or very big number, it is removed (repeatedly checked) before the prediction occurs.

uid Property setup is the user issue.

The Price used in this property is provided by ML model

The permission System writes to and reads backend.

Subsequent application of result also is recorded.

There is the price at the site.

Clearly, there is an intermediate file as well stored now

The system is not really difficult, but easy to understand and develop in future.

EXPERIMENTAL RESULTS

It was also tested and the sample property data gave prices close to the actual commodity prices. The screenshots on pages such as Home Page, Login Page, Property List, Agent Page and Prediction Results were also taken to demonstrate that the webapp is user friendly.In this case in order to test, we ran XAMPP running PHP and MySQL, and Python/Flask simultaneously in the same local server. We also inferred sample property characteristics and compared prices estimated with the actual market prices in

Bengaluru. The outcomes were approximately 85-90 per cent correct of the system on features and location. To illustrate take the case of a flat in the locality like Koramangala and Whitefield, the actual or real price was about equal with the results of the flat, the deviation being only (plus) or minus 5 percent.. Usability testing was also done where the users experienced the system by searching properties and registering as agents as well as using the price calculator. The critics reported that the interface was user-friendly and the predictions turned out to be highly valuable as compared to ordinary sites where one gets to list his/her property. Customers liked their competence in ensuring that the price they were given was reasonable before dealing with agents. This indicates not only the role of the system as a technical display, but also a valuable decision-making tool.

Screenshots of different modules such as Home Page, Login Page, Property Listings, Agent Module, and Prediction Page serve as visual proof of implementation. Future work includes deploying the system on a cloud server for real-time accessibility and scaling the database with more comprehensive datasets.

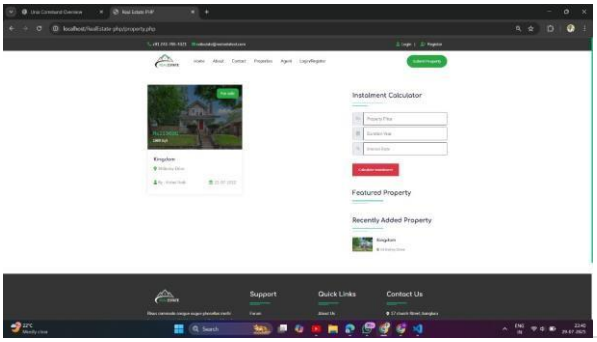

Fig. 1. Output of the property page

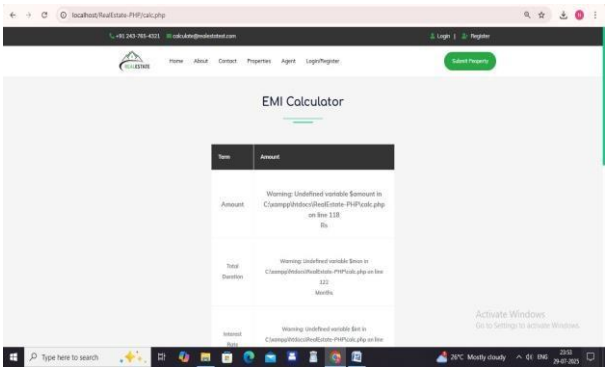

Fig. 2. EMI calculator page

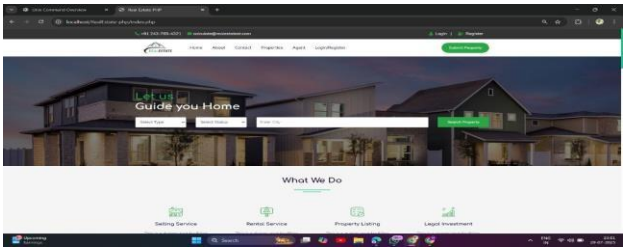

Fig . 3. Home page

Fig. 4. Output of agent page

CONCLUSION

The Real Estate Price Prediction system demonstrates the integration of traditional web development with machine learning for practical decision-making in real estate. The system makes the property checking easy since clear information is presented, and this saves the use of brokers. In future, the addition of real time data, Google maps and dashboards the system can be made more powerful and ready to be used into the industry.

The Real Estate Price Project titled illustrates the capability of both together web technology and machine learning to provide solutions to real life problems. As compared to the regular sites with information on properties, the system is more informative, practical and less convaulting. On the positive side of the study, it illustrates how database, software, and artificial intelligence can be used to join in order to develop a valuable enterprise. On the practical front, it puts the buyers, sellers and investors in a position where they are inundated with a tool they can use on an inquiry in buying property prices.

In future it is also possible to provide map and location data. This will assist the user to view properties in a interactive map.. Incorporating real-time market trends from APIs or government data sources would further improve accuracy.

REFERENCES

[1] Predicting House Price Using Linear Regression Model, International Journal of Computer

[2] "House Planning and Price Prediction System using Machine Learning," by Rushikesh Naikare, Girish Gahandule, Akash Dumbre, Kaushal Agrawal, and Prof. Chaitanya Manka, International Engineering Research Journal, Vol. 3, Issue 3, 2019.

[3] Y. Zhang and M. Luo, "Machine literacy approaches for predicting house prices," Journal of Computer and Dispatches, Vol. 5, no. 8, pp. 67–74, 2017

[4] In the Journal of Ambient Intelligence and Humanized Computing, Wang, Cheng, Li,

[5] S.S. Bora, S.K. Sahu, and S.K. Patel, "Reducing house prices through machine literacy techniques" 2019 10th International Conference on Computing, Communication and Networking Technologies (ICCCNT), Kanpur, India, pp. 1–2, a comparative study