

PROPERTY VALUTAION SYSTEM**Harinkumar. S****Final Year of BCA Student**, Department of computer Application (UG), School of computing Science, Vels Instituted of science and Technology and Advanced Studies Chennai-60011**Dr. J. Jebathangam****Professor**, Department of Computer Application (UG), School of Computing Science, Vels Institute of Science and Technology and Advanced Studies Chennai-600117**ABSTRACT:**

The valuation of real estate properties is a critical process in the fields of property management, banking, taxation, investment, and urban planning. Traditional property valuation methods are often manual, time-consuming, subjective, and highly dependent on the experience of valuers, resulting in inconsistent and delayed price estimation. Recent research in automated valuation models shows that integrating computerized data processing, spatial information, and machine learning significantly improves valuation speed, transparency, and prediction consistency. This project presents the design and development of a Property Valuation System, an intelligent software application developed to estimate the market value of residential and commercial properties based on various influencing parameters. The system collects and analyses key property attributes such as location, land area, building size, age of construction, number of rooms, nearby facilities, legal approvals, market demand, and historical sales records. By applying predefined valuation formulas and comparative market analysis techniques, the proposed system generates an approximate and reliable valuation report for the selected property. Modern valuation studies indicate that location intelligence, comparable sales analysis, and automated regression-based methods are among the most effective contributors to realistic property pricing.

KEYWORDS:

Real Estate Valuation, Property Estimation, Automated Valuation Model, Market Price Prediction, Property Database Management, Comparative Market Analysis, Geographic Information System (GIS), Machine Learning, Decision Support System, Valuation Report Generation.

I. INTRODUCTION

The modern real estate industry, determining the correct market value of a property is one of the most important and challenging tasks. Property valuation plays a major role in buying, selling, renting, taxation, mortgage approval, insurance, and investment planning. The value of a property generally depends on multiple factors such as geographical location, land size, building area, age of construction, road access, nearby facilities, market demand, and legal approvals. In traditional systems, property valuation is usually performed manually by professional valuers or real estate agents based on personal experience and local market knowledge. However, such manual estimation methods are often time-consuming, costly, and may produce inconsistent or subjective results. Research on automated valuation models has shown that computer-assisted valuation can improve objectivity, repeatability, and efficiency by integrating transaction data with statistical estimation techniques.

With the rapid growth of information technology, digital solutions are increasingly being adopted in the real estate sector to simplify valuation and property management processes. A Property Valuation System is a computerized application designed to estimate the approximate market value of properties by analysing important valuation parameters stored in a digital database. The system can compare the entered property details with existing market records and predefined valuation rules to generate an instant valuation report. Such systems help users avoid delays in manual consultation and offer transparent, data-driven pricing suggestions.

II. LITERATURE REVIEW

Literature review is an important part of project development because it provides an understanding of previous research works, existing valuation methods, and recent technological advancements in the field of property price estimation. Many researchers have worked on developing automated valuation models to overcome the limitations of manual real estate appraisal.

Pagurid et al. (2003) explained that real estate valuation traditionally depends on three common approaches

namely the cost approach, sales comparison approach, and income capitalization approach. Their study emphasized that property value is influenced by both physical characteristics and economic market behaviour, making valuation a complex multi-factor decision process.

D'Amato et al. (2018) proposed that automated valuation models can provide objective, reliable, and faster assessment of property portfolios using mathematical optimization and market transaction databases. Their findings showed that digital valuation systems significantly reduce subjective judgment and improve consistency in large-scale real estate assessments.

III. METHODOLOGY/PROPOSED METHOD

The proposed Property Valuation System is developed using an Automated Valuation Model (AVM) approach in which the approximate market value of a property is calculated automatically by analysing multiple property-related parameters stored in a computerized database. Modern AVM practices rely on historical transaction records, comparable nearby properties, geospatial information, and mathematical decision logic to provide faster and more consistent valuations than purely manual appraisal methods.

The methodology of the proposed system consists of the following phases:

1. Data Collection Phase

In this phase, all required property information is collected from the user or administrator and stored in the system database.

The collected details include:

- Property location
- Land area / building area
- Type of property (residential/commercial)
- Number of rooms/floors
- Age of construction
- Road access
- Nearby facilities
- Legal approval status
- Current area market rate

These parameters are considered the major influencing factors in real estate value estimation.

2. Database Management Phase

All entered property details and market price records are maintained in a centralized database. The administrator regularly updates:

- locality-wise land rates,
- previous sale values,
- registration values,
- tax values,
- and demand statistics.

AVM systems are highly dependent on the quality and freshness of database information; better market data leads to more accurate valuation output.

IV. RESULT AND DISCUSSION

The proposed Property Valuation System was successfully developed and tested using various sample property records collected from different locations and categories. The system was able to accept user property details, compare them with stored market records, process valuation parameters, and generate an estimated market price automatically within a few seconds. The overall testing results show that the software performs the valuation process efficiently with reduced manual intervention.

During implementation, multiple property samples such as residential houses, apartments, plots, and commercial buildings were entered into the database with details including area, location, age, facilities, and prevailing market rate. The system processed these records using the predefined valuation algorithm and generated corresponding estimated values. The obtained results indicate that the system provides fast, consistent, and reasonably reliable valuation outputs for standard property types.

Studies on Automated Valuation Models report that digital property valuation systems improve consistency, speed, and objectivity compared with manual appraisal, particularly when sufficient comparable sales data is available. Modern machine-learning-based AVMs also demonstrate lower predictive error than traditional

manual-only approaches.

V. CONCLUSION AND FUTURE WORK

The Property Valuation System has been successfully designed and implemented as an automated software solution for estimating the approximate market value of residential and commercial properties. The developed system effectively collects property-related details, compares them with area-wise market records, applies valuation parameters, and generates a quick valuation report with minimal manual effort. The project demonstrates that computerized valuation can significantly improve speed, consistency, transparency, and digital record management when compared to conventional manual appraisal methods.

Through this system, users such as property buyers, sellers, valuers, banks, and real estate agencies can obtain an initial and reliable estimate of property price without lengthy field-based calculations. The administrator can maintain updated market rates and property records, which further enhances the relevance of valuation results. Based on the testing conducted, the proposed system performs efficiently for standard property categories and provides a practical decision-support platform for real estate transactions.

Current AVM research similarly concludes that automated valuation systems are highly effective for rapid mass appraisal and decision support, especially when supported by strong transaction datasets and location intelligence.

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