International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 10 Issue: 01 | Jan - 2026 SJIF Rating: 8.586 ISSN: 2582-3930

Developing and Putting into Practice a Web-Based House Document Verification System for Safe and Expandable Property Management

Karthik H S[1], Mithun M N[2]

[1]Department of Master of Computer Applications, R V College of Engineering [2]Under the Guidance of, Assistant Prof Dr. R Savitha [1]mithunmn.mca24@rvce.edu.in
[2]karthikhs.mca24@rvce.edu.in

The design and operation of a house document verification system created as a real estate website are described in this research paper. This project's primary goal is to make it simple and secure for people to upload, review, and validate home documents online rather than on paper. Property owners can submit their house documents through the system's straightforward website, and administrators can validate them. The project makes use of contemporary web technologies to securely store data, manage users, and create the website. Additionally, it makes use of cloud services to maintain a safe and efficient system. To ensure that each user can only see what they are permitted to see, various user roles, such as administrator, property owner, and verifier, are created.

I. Index Terms

House Document Verification, Real Estate Website, Web Application, Role-Based Access Control, JWT Authentication, Cloud Computing, Database Management, Workflow System, Property Management, Document Security, REST API, Cloud Deployment, User Authentication, Digital Records, Online Verification System

II. INTRODUCTION

THE way real estate systems are developed, implemented and maintained in digital environments has completely changed as a result of the integration of contemporary web
technologies and cloud practices. Applications for house document verification now need robust infrastructure for security, tracking, workflow control, and automated updates in addition to dependable data management features. This study offers a thorough demonstration of a house document verification platform that mirrors procedures and includes audit and access control features that are crucial for applications.

A. Background and Context

Traditional standalone applications have given way to web-based, cloud-enabled platforms that employ automated deployment procedures, containerization, and modular design. Simultaneously, digital systems that handle property data and legal documents online have replaced paper-based record keeping in real estate services. A number of issues are brought about by the combination of these modifications, including scalability, performance monitoring, secure document handling, system dependability, and ongoing system improvement.

Web-based, cloud-enabled platforms that use automated deployment processes, containerization, and modular design have replaced traditional standalone applications. Paper-based record keeping in real estate services has been replaced concurrently by digital systems that manage property data and legal documents online. Combining these changes results in a number of problems, such as scalability, performance monitoring, secure document handling, system dependability, and continuous system improvement.

B. Research Objectives

This study aims to achieve the following objectives:

1) Showcase a comprehensive House Document Verification System architecture utilizing cloud-based technologies and contemporary web development techniques.
2) Examine how real estate document verification systems are implemented in terms of security, monitoring, and data management.
3) Using GitHub Actions and automated workflows, assess the efficiency of CI/CD pipelines for the real estate web application's continuous development and deployment.
4) Examine the deployment plan's scalability and dependability using containerized cloud services.
5) Examine how various technology stacks, such as relational database systems, REST API backend, React frontend, and authentication services, are integrated.
6) Determine best practices and design patterns for creating real estate document verification platforms that are safe, scalable, and maintainable.
7) Give developers and engineers useful advice on how to implement real estate management and house document verification applications that are ready for production.

C. Scope and Significance

The system architecture, cloud infrastructure, and operational procedures for a production-ready House Document Verification System created as a real estate website are the main topics of this study. The analysis includes database architecture for storing property and document records, frontend user interface development using React, backend implementation using contemporary web frameworks, API design based on REST principles, authentication and authorization mechanisms, system monitoring and logging features, continuous integration and

deployment using automated pipelines, and container-based deployment for scalability and dependability. Software developers, system architects, and project managers in charge of creating and managing extensive real estate information systems can gain important insights by comprehending how secure document verification is integrated with contemporary cloud and deployment practices.

III. LITERATURE REVIEW

A. Principles and Practices

Many researchers have studied how computer systems can help in storing and managing house documents safely [1]. In earlier times, property papers were kept in physical files and cupboards, which often led to problems such as loss of documents, damage, and difficulty in finding records when needed [2]. These issues encouraged the use of digital systems and websites instead of paper-based methods for maintaining house records. Several studies also focused on security and privacy. They suggested that access to house documents should be limited based on user roles, where administrators manage the system and regular users can only view their own information [3]. Login mechanisms using usernames and passwords were introduced to protect private data and improve user confidence in digital platforms. Other researchers emphasized the importance of following a step-by-step process in document handling. Documents should first be uploaded, then verified, and finally approved or rejected. This structured workflow reduces errors and makes the process more clear and organized [4]. In addition, the use of cloud-based storage was found to be beneficial for accessing house records from any location and at any time. Cloud systems also support multiple users working together without affecting performance [5].

METHODOLOGY

To begin this project, first tried to understand the problem of house document checking in real life. Many people still depend on paper files and manual work to store and verify house documents. Because of this, documents can be lost, damaged, or mixed with others. It also takes a long time to check whether a document is correct or not. Seeing these problems, I decided to create a simple website that can help people upload and verify house documents in an easier and safer way.

After that, thought about who will use this system. Decided that there will be three main users: the administrator, the property owner, and the verifier. Each person has a different job to do. The property owner uploads the house documents, the verifier checks them, and the administrator controls everything. This made the system more organized and clearer.

Next, planned the system by breaking it into small parts. First comes the login page so only registered users can enter. Then there is a page to add property details. After that, there is a page to upload house documents. Another part shows whether the document is approved or rejected. Doing this step by step made the work easier and helped avoid confusion.

Then started building the website. created simple pages where users can type their details, upload documents, and see their status. made sure the pages were easy to understand so that anyone can use them without training. All the information entered by users is saved safely in a database so that it is not lost and can be seen again whenever needed.

For document checking, followed a simple rule. First, the user uploads the document. Next, the verifier looks at it carefully. Then the verifier decides whether the document is correct or not. If it is correct, it is approved. If not, it is rejected. This clear process helped keep everything in order and avoided mistakes.

After building the system, tested it many times. logged in as different users and tried uploading documents, checking them, and viewing results. Whenever found an error, fixed it and tried again. Also asked others to try using the system and gave importance to their feedback. This helped make the system better and more user-friendly.

Finally, the system was made available online so that people can use it from anywhere with internet access. This project helped me understand how real problems can be solved using a simple website. It also taught me how to plan, design, and complete a project step by step. Overall, the work was done carefully with the aim of making house document verification easy, safe, and clear for everyone.

IV. ARCHITECTURE

This project is built in a very simple way so that everyone can understand how it works. Designed the system like a small team where each part has its own job. When all parts work together, the whole system works smoothly and without confusion.

First, there is the part that people see on the screen. This is the website where users log in, upload their house documents, and check the status of their verification. Property owners use this part to give their document details. Verifiers use it to look at the documents and decide if they are correct. The administrator uses it to control everything. This part is made very simple with clear buttons and pages so that anyone can use it easily without getting confused.

Second, there is the part that works behind the scenes. This part cannot be seen by users, but it does all the important thinking work. When someone logs in, this part checks if the username and password are correct. When someone uploads a document, this part decides where to save it. When a verifier clicks approve or reject, this part updates the result. It also makes sure that each user can only see what they are allowed to see. For example, one user cannot open another person's documents.

Third, there is the place where all information is kept safe. This is like a digital cupboard. It stores user names, house details, uploaded documents, and verification results. Whenever someone adds new information or wants to see old information, the system goes to this storage place and brings it back.

All these three parts talk to each other like friends. When a user uploads a document, the website sends the information to the behind-the-scenes part, and then it is saved in the storage place. When the verifier checks the document, the result is saved again and shown back to the user. Everything moves in a simple path so that nothing is lost and no one gets confused.

Made this design because it is easy to understand and easy to improve in the future. If later we want to add new features like mobile apps or more users, we can do it without breaking the whole system. Each part can be changed or improved separately.

In simple words, the system works like this: The user talks to the website → the website talks to the system → the system talks to the storage → and then the answer comes back to the user. This makes the work clear, safe, and smooth.

Overall, this architecture helps the house document verification system work properly. It keeps things organized, protects user information, and makes the system easy to use for real estate purposes. The design is simple but strong enough to handle real-life needs.

V. FRONTEND IMPLEMENTATION

The front end is the part of the project that people actually see and use. It is like the front door of the system. When someone opens the website, this is what appears on the screen. My main goal while creating this part was to make everything very simple so that anyone can use it without feeling scared or confused.

First, I made a login page. This is where users enter their details to get inside the system. Wanted this page to look clean and easy, so users would not struggle. After logging in, each user goes to their own page. The admin gets a page to manage everything. The property owner gets a page to upload house documents. The verifier gets a page to check documents. This way, everyone sees only what they need and nothing extra.

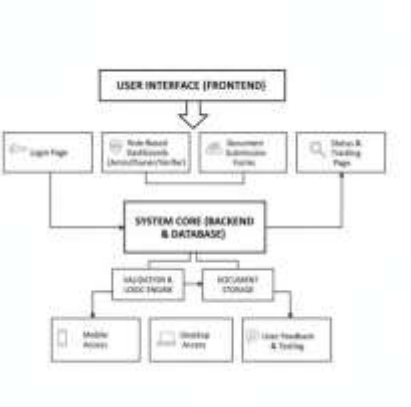
Then made pages where users can enter house details and upload their documents. These pages look like simple forms that people already know how to use. Users just type some information and choose a file from their phone or computer. used clear words like “Upload”, “Save”, and “Check Status” so users understand what to do without asking anyone.

Also created a page where users can see what is happening with their document. It shows if the document is still being checked, approved, or rejected. This makes users feel calm because they don’t need to wait or go to an office to ask. They can just open the website and see the result.

Kept the design very simple. Did not use too many colors or pictures. Wanted the website to look clean and peaceful so users can focus on their work. The pages also work on mobile phones and computers, so people can use the system from anywhere.

While making the front end, tested it many times. Clicked every button and filled every form again and again. When something did not work, fixed it and tested it again. Also asked my friends and family to use the website and tell me what they felt. If they said something was confusing, changed it to make it better.

In simple words, made the front end so that people can use it easily without stress. They can upload their house documents, check the status, and manage their information in a smooth way. This makes the House Document Verification System friendly, simple, and helpful for real estate work.



VI. BACKEND IMPLEMENTATION

The back end is the part of the project that works quietly in the background. Users cannot see it, but it does all the important work. It handles login checking, saves information, and makes sure everything runs properly. I built this part so that the system can work smoothly and safely without showing any problems to the users.

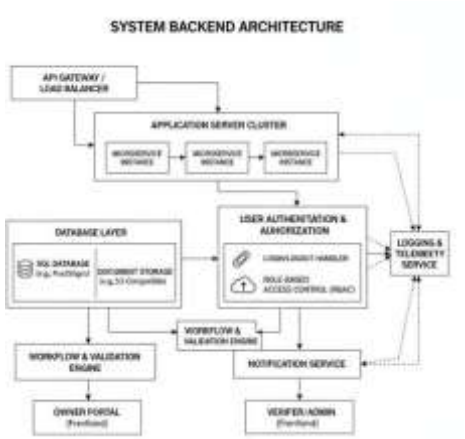
First, I created a way for users to log in and be recognized by the system. When someone enters their username and password, the back end checks if the details are correct. If they are correct, the user is allowed to enter the system. If not, the system shows an error message. This helps keep the website safe and stops unknown people from using it.

Next, made the back end store all information properly. Whenever a user uploads house details or documents, the back end saves them in a safe place. This includes user details, property information, uploaded documents, and verification results. This way, no data is lost and everything can be found again whenever needed.

The back end also controls what each user can see and do. For example, a property owner can only see their own documents. A verifier can only see the documents assigned to them. The admin can manage everything. This helps keep information private and avoids confusion.

For the document checking process, the back end follows a clear order. First, the document is saved. Then it is sent to the verifier. After the verifier checks it, the result is stored as approved or rejected. Each step is recorded so that the system knows what happened and when it happened.While building the back end, tested it many times. Tried logging in as different users, uploading documents, and checking the results. Whenever something did not work, fixed it and tried again. Made sure that the system does not crash and that it responds correctly to every action.

In simple words, the back end works like the brain of the system. It thinks, decides, and keeps everything in order. Because of this, the front end can work nicely and users can use the system without any trouble. This makes the House Document Verification System safe, organized, and reliable for real estate work.



VII. RESULT

After completing this project, felt very happy and satisfied because the system worked properly and did what wanted it to do. When first started, was not sure if everything would work together, but in the end, the website was able to help people upload their house documents and check their status easily. When a user opens the website, they can log in and see their own page. Property owners were able to add their house details and upload their documents without any problem. They did not need to go to an office or carry papers. Everything could be done from the website. This made the work simple and comfortable for them.

The verifier could see the uploaded documents and check them carefully. After checking, the verifier could mark them as approved or rejected. This step was very clear and easy to understand. The administrator could manage users and records and see what was happening in the system. Everyone had their own job and could not interfere with others. This made the system neat and safe. Before using this system, document checking used to take a lot of time. People had to wait in offices and sometimes visit many times. With this project, the work became faster and easier. Users could upload their documents from home and check the result on the website. This saved time and reduced stress for everyone.

Tested the system many times, logged in as different users and tried all the features, uploaded documents, checked them, and viewed the results. Each time, the system worked properly. When found small mistakes, corrected them and tested again. Slowly, the system became better and smoother, also asked some friends to try the website. They said it was easy to use and not confusing. They liked that everything was simple and clear. They could understand what to do without asking for help. Their feedback made me feel confident that the system was user-friendly. Another good thing was that all information was saved safely. User details, house records, and verification results were stored properly. Nothing was lost during testing. This showed that the system can be trusted to keep important data. In the end, this project proved that a simple website can help solve real- life problems. It made document verification faster, safer, and easier. It reduced manual work and saved time. The main goal of the project was achieved successfully. This project also helped me learn many things, learned how to plan a system, how to build it step by step, and how to test it properly, understood how technology can be used to help people in daily life. Completing this project gave me confidence and experience. Overall, the result of this project was successful. The House Document Verification System worked well and helped make the document checking process simple and clear. This made all the effort of building the project meaningful and useful.

VIII. CONCLUSION

This paper described the development of a House Document Verification System designed as a web-based real estate platform. The main purpose of this work was to make the process of handling and verifying house documents easier, faster, and more dependable. By moving from paper-based methods to a digital system, the project helped reduce delays, avoid confusion, and improve the overall experience for users involved in property transactions. The system was designed to support different users such as administrators, property owners, and verifiers, with each role having clear responsibilities. Documents followed a simple and structured path from submission to final approval. This helped maintain order in the verification process and ensured that every action could be traced and understood. The role-based design also made the system safer by allowing users to access only the information meant for them.

Practical testing showed that the platform worked smoothly and was easy for users to understand. Tasks such as uploading documents, checking their status, and managing records required less time and effort when compared to traditional methods. Users were able to complete their work without confusion, and important data remained secure throughout the process. This project demonstrates that even a simple web-based solution can bring meaningful improvement to real estate document management. It shows

how technology can replace slow and manual procedures with a clear and organized digital process. The experience gained from building this system also highlights the value of careful planning, user-focused design, and continuous testing. In summary, the House Document Verification System successfully met its objectives by providing a practical and reliable platform for managing property documents. The system offers a strong foundation for future growth, such as adding mobile support, advanced reporting, and wider integration with real estate services. This work confirms that digital systems can play an important role in making real estate transactions more transparent and efficient.

FUTURE ENHANCEMENT

This system works well now, but it can be better in the future. One improvement is to make a mobile app. People can use the system on their phones. This will be easy for users who do not use computers much. Another improvement is to send messages to users. When their document is approved or rejected, they will get a message. They will not need to check the website again and again. The system can also be made in different languages. Then people from many places can use it easily and understand it better. In the future, the system can show simple reports. These reports can tell how many documents are checked and how much time it takes. This will help the admin to see the work clearly.Security can be improved more. Strong passwords and extra checking can be added. This will keep user documents safe. The system can also be connected with government offices. Then document checking will be faster and more correct. Later, the system can support more document types like rent papers and tax papers. With these changes, the House Document Verification System can become more useful and helpful for everyone.

REFERENCES

[1] D. F. Ferraiolo, D. R. Kuhn, and R. Chandramouli, *Role-Based Access Control*, Artech House, 2003.
[2] W. M. P. van der Aalst, *Workflow Management: Models, Methods, and Systems*, MIT Press, 2004.
[3] T. Berners-Lee, R. Fielding, and H. Frystyk, "Hypertext Transfer Protocol — HTTP/1.0," RFC 1945, 1996.
[4] R. Fielding et al., "Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content," RFC 7231, 2014.
[5] M. Jones, J. Bradley, and N. Sakimura, "JSON Web Token (JWT)," RFC 7519, 2015.
[6] PostgreSQL Global Development Group, "PostgreSQL Documentation," 2024. [Online]. Available: https://www.postgresql.org/docs
[7] React Documentation, "Getting Started with React," Meta Open Source, 2024. [Online]. Available: https://react.dev
[8] Supabase Inc., "Supabase Documentation," 2024. [Online]. Available: https://supabase.com/docs
[9] Google LLC, "Firebase Hosting Documentation," 2024. [Online]. Available: https://firebase.google.com/docs/hosting
[10] Google Cloud, "Cloud Run Documentation," 2024. [Online]. Available: https://cloud.google.com/run/docs
[11] GitHub Inc., "GitHub Actions Documentation," 2024. [Online]. Available: https://docs.github.com/actions
[12] World Bank, *Digital Land Administration and Property Registration Systems*, World Bank Publications, 2023.
[13] S. Zevenbergen and A. Burns, "Land Administration and Management Systems," International Federation of Surveyors (FIG), vol. 45, no. 2, pp. 1–18, 2019.
[14] ISO/IEC, *Information Technology — Security Techniques — Access Control*, ISO/IEC 27001 Standard, 2018.
[15] Hono Framework, "Hono Web Framework Documentation," 2024. [Online]. Available: https://hono.dev
[16] A. Silberschatz, H. Korth, and S. Sudarshan, *Database System Concepts*, 7th ed., McGraw-Hill, 2019.
[17] M. Fowler, *Patterns of Enterprise Application Architecture*, Addison-Wesley, 2002.
[18] E. Gamma et al., *Design Patterns: Elements of Reusable Object-Oriented Software*, Addison-Wesley, 1994.
[19] R. Buyya et al., "Cloud Computing: Principles and Paradigms," Wiley Press, 2011.
[20] Amazon Web Services, "Well-Architected Framework," AWS Whitepaper, 2023.
[21] NIST, *Digital Identity Guidelines*, Special Publication 800-63, 2022.
[22] OWASP Foundation, "OWASP Top 10 Web Application Security Risks," 2023. [Online]. Available: https://owasp.org
[23] K. Laudon and J. Laudon, *Management Information Systems*, 16th ed., Pearson Education, 2021.
[24] R. Pressman and B. Maxim, *Software Engineering: A Practitioner's Approach*, 9th ed., McGraw-Hill, 2019.
[25] T. Erl, *Service-Oriented Architecture: Concepts, Technology, and Design*, Prentice Hall, 2005.
[26] Microsoft, "Secure Web Application Architecture," Microsoft Docs, 2023. [Online]. Available: https://learn.microsoft.com
[27] Google, "Cloud Security Best Practices," Google Cloud Whitepaper, 2023.
[28] J. Nielsen, *Usability Engineering*, Morgan Kaufmann, 1993.
[29] United Nations, *Framework for Effective Land Administration*, UN Publications, 2020.
[30] S. Sommerville, *Software Engineering*, 10th ed., Pearson Education, 2016.