SecureLaw Portal: Empowering Citizens with Transparent Legal Records via Blockchain and Cloud eVault

Prof V.G Avhad
Computer Engineering Department,
BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY),
COLLEGE OF ENGINEERING, PUNE- 43

Abstract :

In the digital age, where data integrity is essential, the management of legal data requires innovative solutions. Secu reLaw is a new project that combines the immutable power of blockchain, the flexibility of Cloud.
The agility of the Cloud, Express.js, React.js, Node .js suite. This integration forms the backbone of the transformat ion of data protection laws, providing unparalleled security, transparency and easy access. Highlights of this project : SecureLaw is instrumental in redefining information law in India. Traditional systems often face security breaches and lack of transparency, undermining the integrity of the legal process. SecureLaw solves these problems by integ rating blockchain technology, which provides immutable data that ensures legal documents are not tampered with a nd ensure their authenticity. The introduction of smart contracts automates the process, controls permissions and ma kes data immutable, thus increasing efficiency and reducing errors. Leveraging Cloud services such as S3 for storag e, API gateways for seamless communications, Lambda for serverless computing, and DynamoDB for scalable data bases provides a powerful, scalable, and cost-
effective infrastructure. Scalability is important to accommodate legal system growth, and Cloud's Dynamic Servic es provide a solution. The AERN group (AWS, Express.js, React.js, Node.js) strengthens the foundation of the proj ect. Express.js is a simple and easy backend framework that seamlessly integrates for efficient data processing and processing. React.js is a front-
end library with many features that make it user responsive and intuitive. Node.js is known for its performance that enables dynamic recovery and makes data fast and recoverable. SecureLaw's user-
centric approach includes managing access to personal and legal personal details. Personal auditors, regional directo rs, directors (DGs), judges, etc. It deals with many user roles, personal control panels, and access rights. This chang e promotes cooperation, transparency and communication in the legal system. Features of a self-
explanatory legal system encourage people to understand the legal process, fostering transparency, trust, and collab orative knowledge.

Keywords: Blockchain, Application Programming Interface (API), Cloud , Express.js, React.js, Node.js

I. INTRODUCTION

The initiative to develop a blockchain
based eVault system for managing legal documents in India represents a futuristic solution aimed at transforming e xisting legal documents. Currently old systems; It faces many challenges, including inconsistent security, lack of tra nsparency, and inefficiencies that hinder data governance legislation.
The project is trying to create a new platform by leveraging the power of Blockchain technology and the powerful s ervices of Cloud. The platform will primarily improve information security, transparency and accessibility in storin g and managing legal information.
The use of blockchain technology solves the security problems inherent in traditional methods by using encryption t echnology and distribution models. This provides tamper-
proof storage and maintains the integrity of legal documents, creating a foundation of trust for all legal stakeholders .
Additionally, using cloud services provides a highly scalable and reliable platform that supports data storage, proce ssing and access. The integration of these technologies not only ensures the security of legal documents, but also im proves the management process, potentially changing the way legal documents are processed and enteredThe ultim ate goal of the program is to create a user-
friendly, transparent and secure ecosystem that meets the needs of professionals, consumers and management. The blockchain
based eVault system aims to set new standards for data security, transparency and access in the Indian system byad dressing flaws in existing systems. The project aims to lay the foundations for a more efficient and reliable date ma nagement system through collaboration, innovation and compliance with legal standards**.**

II. PROBLEM DEFINITION AND SCOPE

2.1 Problem Definition

The existing legal record management systems suffer from security vulnerabilities, lack of transparency, and inefficiency. This project addresses these issues by leveraging blockchain technology and Cloud services to create a secure, transparent, and user-friendly platform for storing and managing legal records

2.2 Scope and Objectives

2.2.1 Scope

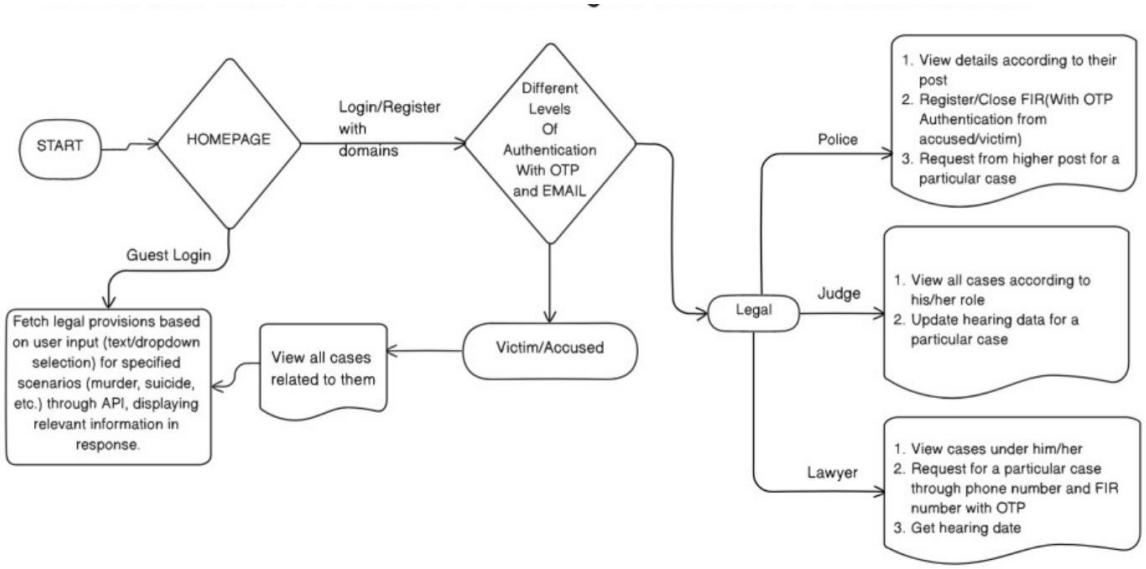
The development of a blockchain-
based eVault system for legal documents in India covers many important areas. This includes creating a secure platf orm by selecting appropriate blockchain tools, creating user interfaces, ensuring data security and privacy measures , integrating smart contracts, and complying with laws and regulations. This expansion aims to revolutionize the ma nagement of legal documents by increasing security, accessibility and transparency in the Indian legal landscape**.**

2.2.2 Objectives

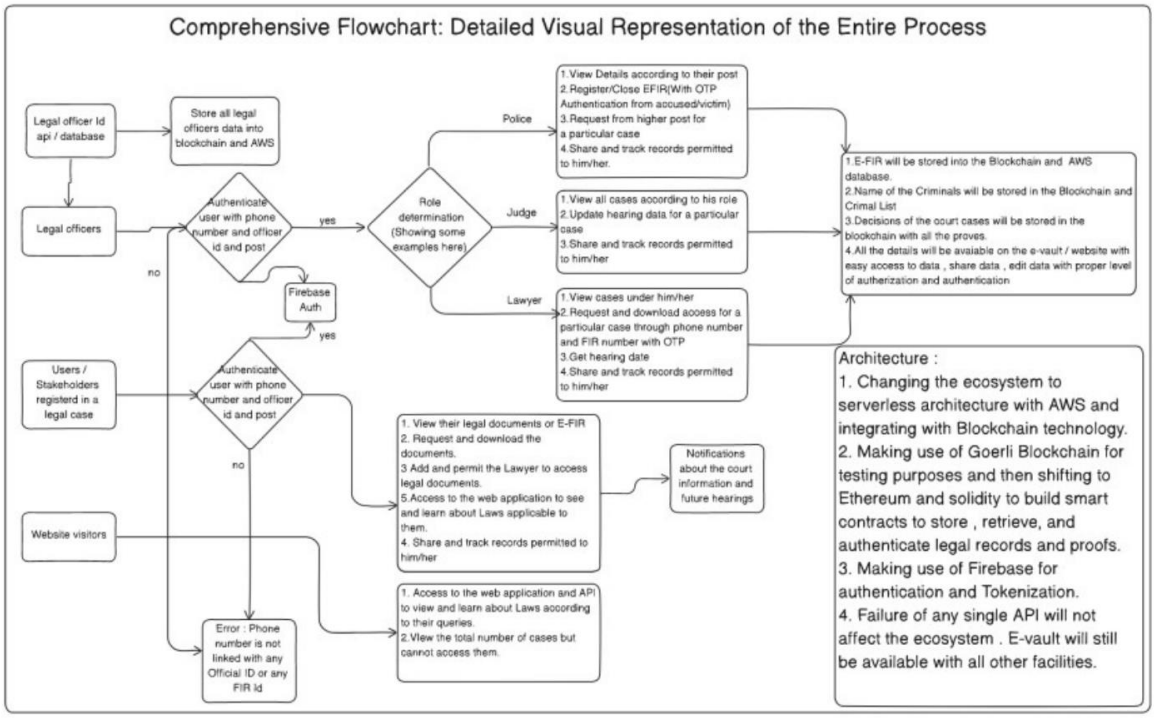
- To integrating blockchain technology and Cloud services.
- The objective of this system is to provide security of crime data.
- Provide secure centralize distributed network of crime record.
- To prevent data tempering from police department.

III. SYSTEM ARCHITECTURE

3.1 Proposed System



Flowchart:



3.1.1 Advantages of Proposed system:

- The proposed system will prevent unauthorized access and tampering
- Establishes a clear and auditable record of legal transactions, fostering trust by enabling verification of record authenticity.
- Smart contracts reduce errors and streamlining workflows for improved efficiency.
- Cost savings as the system adapts to varying workloads.

- Future Adaptability and Scalability

3.1.2 Algorithms Used:

1 SHA 256

Cryptographic hashing algorithms like SHA-256 (Secure Hash Algorithm 256-bit) are frequently used in blockchain to create unique identifiers (hashes) for data blocks. These hashes ensure data integrity and are crucial for creating the blockchain's tamper-resistant structure.

2 Symmetric and Asymmetric Encryption:

Encryption algorithms like AES (Advanced Encryption Standard) for symmetric encryption and RSA (Rivest–Shamir–Adleman) for asymmetric encryption might be employed to secure data at rest or during transmission within the system.

IV. RESULTS AND DISCUSSION

CONCLUSION

SecureLaw incorporates a combination of cutting-
edge technologies to redefine legal information management. Combining the immutability of blockchain, the efficie ncy of smart contracts and the optimization of Cloud with the AERN agile process, the project envisions a future w here legal documents are not only managed but also improved easily and transparently for all stakeholders. In an ag e where technological advances are reshaping governance and justice, SecureLaw is more than a business; It shows the transformative power of new solutions. SecureLaw paves the way for a legal ecosystem where integrity, accessi bility and justice are essential.

With the emergence of SecureLaw, it heralds a new era in which legal processes are redesigned rather than modern. Legal documents are more than just documents; They are the foundation of trust, responsibility and social justice. S ecureLaw serves as a beacon illuminating a future where the management of legal documents is not only secure and transparent, but also provides the basis for honest and fair justice**.**

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