

Evault For Storing Of Government Documents Using Hyperledger Fabric

Description:

Evault For Storing Of Government Documents Using Hyperledger Fabric is a system that uses Hyperledger Fabric to store government documents in a secure and tamper-proof manner. The system allows government agencies to upload and download documents, and to share documents with other agencies. The system also provides a way to track changes to documents and to audit document access.

Objectives:

- Enhance data security, streamline storing of government confidential information, and ensure easy retrieval and access control.
- Stakeholders: Government Organizations, Central Authorities, Other Government Bodies, Officials, Various Ministries.

Steps/Flow:

1. Government Officials are provided with certificates.
2. Using certificates in hyperledger fabric they are the authorized persons to store the documents.
3. Smart contracts help in providing access and other rights to the officials.
4. The government can easily increase the existing nodes in order to store huge amounts of data

Idea and Approach Details

SOLUTION :

- Our blockchain-powered Legal eVault, a game-changer in legal record management. With secure document storage, **role-based access control**, **version tracking**, and **user-friendly interfaces**, it offers efficiency, transparency, and compliance by using **Distributed Ledger Technology(DLT)**.
- It Integrates seamlessly with [eCourt.gov.in](https://ecourt.gov.in) for streamlined processes using [API-Setu](#), [Akashit API](#) or [Attestr Court Record](#)
- Enhances security by encrypting files using **AES/RSA** algorithm before storing them on the blockchain thus ensuring **robust security**, **encryption**, and **privacy**.
- Simplifies the **user interface** and reducing **frontend complexity** by handling smart contract signing on the backend using **Endorsement Policies**.
- Legal documents are stored securely on the **blockchain**, ensuring integrity and immutability. **Hyperledger's robust architecture** ensures **tamper-proof** records. We employ **chaincode** (smart contracts) for precise **access control**, **Certificate of Authorization**, allowing authorized entities to view or modify documents. This enhances security, transparency, and compliance, reinforcing the blockchain's trustworthiness in our Legal eVault solution.

FEATURES :

- An intuitive interface for **efficient document storage and retrieval**, it seamlessly **integrates with existing databases**, ensuring privacy by storing files on blockchain and propelling India's e-legal landscape forward.
- Our solution revolutionizes legal records, offering ironclad **security** and **transparency**

BENEFITS:

- Easy to upload and retrieve
- Can be monetize
- Accessible to authorize entity

Stakeholders and Business Potential :

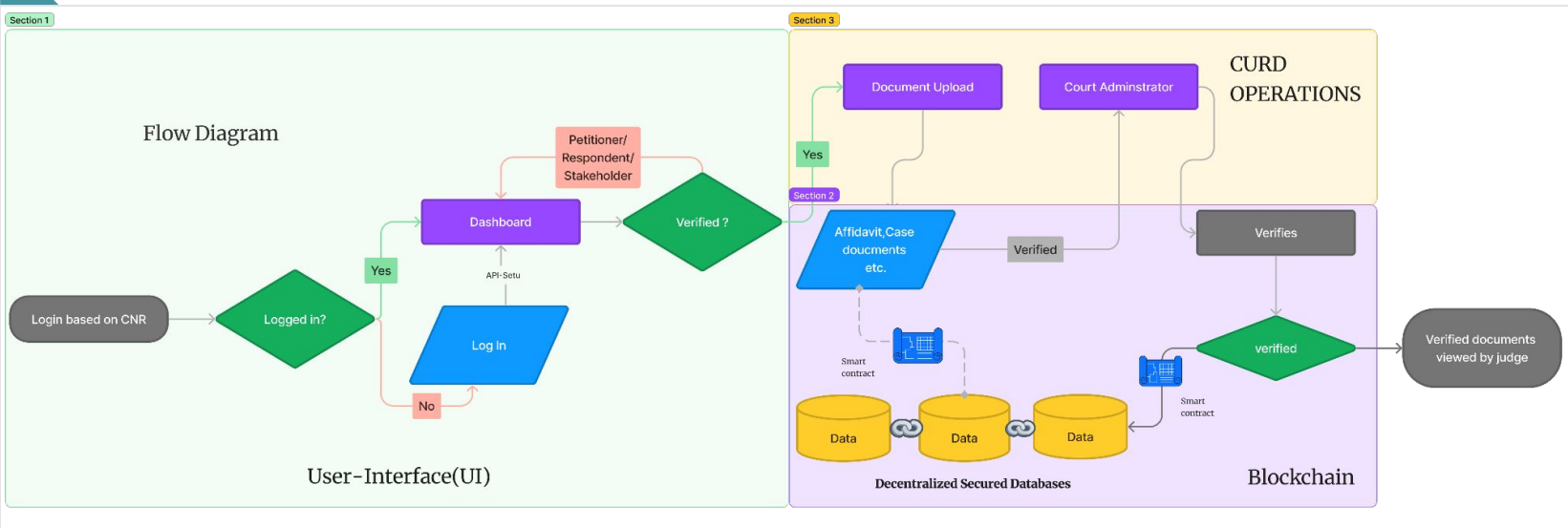
- **Law Firms:** Law firms can efficiently manage legal records and monetize personal data storage through a "pay-as-you-go" model.
- **Government Departments:** Streamline data management and reduce operational costs.
- **Courts:** Improve access to case-related documents, enhancing legal proceedings.
- **Other Stakeholders:** Facilitate efficient decision-making through secure data access.
- **Business Model:** Adopt a flexible "pay-as-you-go" model, providing revenue opportunities for lawyers and B2B private law firms.

Future Scope :

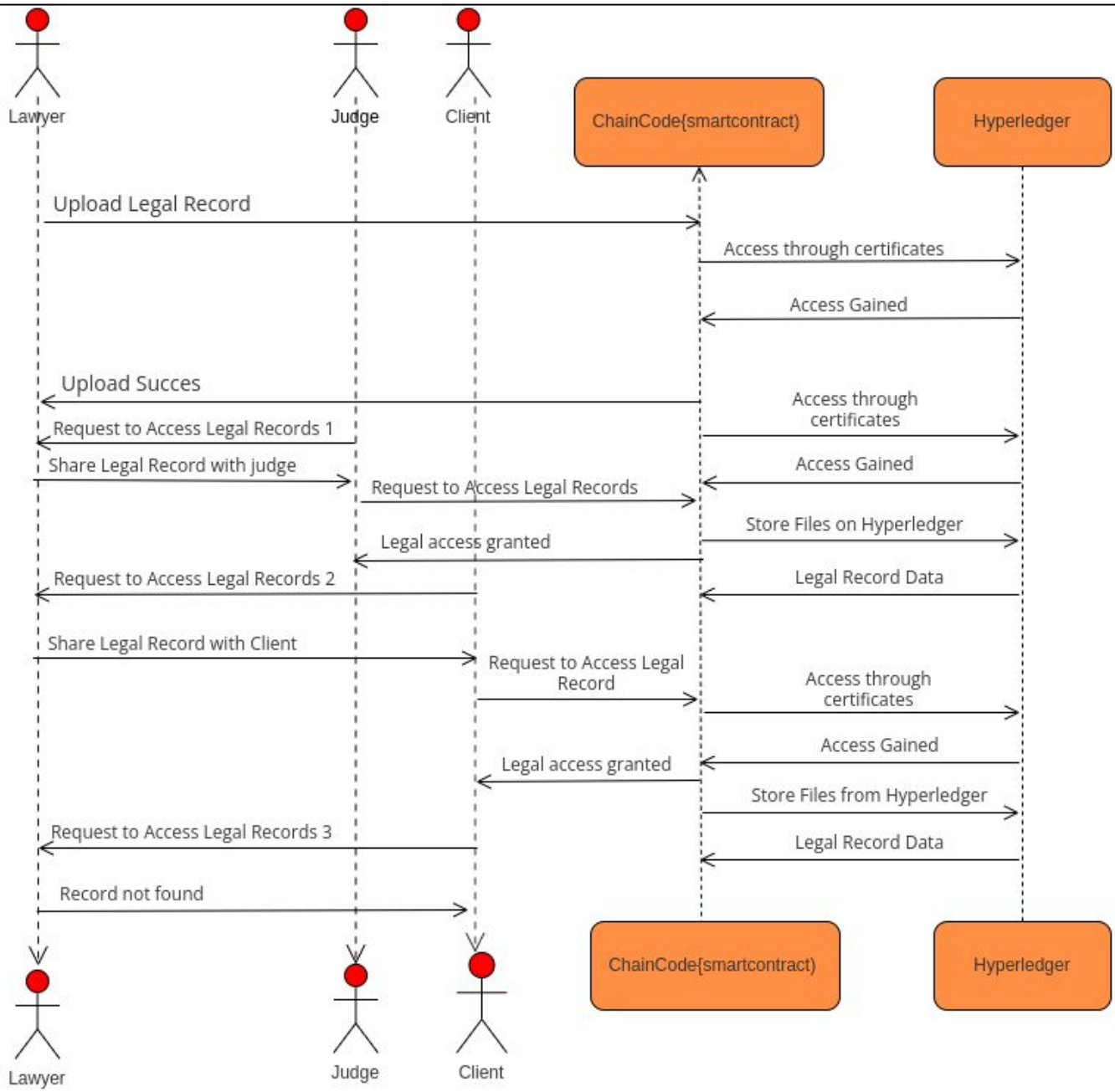
- Internally Integrating with Ecourt Platform.
- Adding storage tiers and premium plans
- Backing up data on google drive

Tech Stack :

- Frontend Framework: React.Js / Next.Js
- User Interface (UI): Shadcn-UI, Tailwind
- Form Validation: ZOD Forms
- Docker
- Backend Framework: Next.Js
- Database and ORM: Prisma-ORM + Postgres
- Blockchain: Hyperledger Fabric + SDK
- Programming Languages: Typescript, Java



Use Case and Designs



Use cases:

- Our website offers specialized **access controls** for judges, lawyers, and clients, government-assigned roles ensure security and tailored functionality
- For every case registered on **E-Court**, the court registrar can upload the required legal records.
- The Client will be able to log in, **navigate** to their cases, access and receive information including status, documents and receives **real-time case notifications**.
- Within the eVault system, clients have the option to engage a lawyer who can review and access the requisite legal records pertinent to their case.

Dependencies

- **Hyperledger Fabric Proficiency:** Hyperledger Fabric is a blockchain platform designed for enterprise use cases. Proficiency in Hyperledger Fabric is crucial if your project involves building a private, permissioned blockchain network.
- **Blockchain Timestamp Understanding:** Understanding how to use blockchain technology to create timestamps and ensure data integrity is vital, especially in applications where document provenance and tamper resistance are critical.
- **Chaincode Development Proficiency:** Chaincode is the smart contract logic in Hyperledger Fabric. Proficiency in developing and deploying chaincode is necessary for creating and managing the business logic on your blockchain network.
- **Certificate of Authorization Management:** This involves managing digital certificates and permissions for access to the blockchain network. Proper certificate management is crucial for maintaining the security and access control of the network.