



## PSG COLLEGE OF TECHNOLOGY COIMBATORE

### SOCIETE GENERALE 2025 PSG HACKATHON

#### Problem Statement:

Developing a Blockchain-Based Evault for Legal Records

#### Team:

Roll No.	Name of the student
23MX318	Padmaja M
23MX328	Valli V Narayanan

#### Objective:

- Develop a blockchain-based eVault system for legal records that can ensure security, transparency, and accessibility for all stakeholders.
- The system should be able to store, manage, and share legal records securely and efficiently, with the potential to integrate with existing legal databases.

#### Introduction:

The eVault system is a blockchain-based platform designed for secure storage and management of legal documents. Utilizing blockchain technology ensures transparency, immutability, and enhanced security. The system leverages smart contracts to automate access control, permissions, and transactions, providing a user-friendly interface for stakeholders to interact with the eVault.

#### System Overview:

The eVault system aims to provide a secure and efficient solution for managing legal records. Key features include document uploading, retrieval, tracking, and sharing. The system ensures

privacy and confidentiality through robust access controls, encryption, and authentication mechanisms. It is designed to be scalable and easily integrable with existing legal databases.

## **Architecture:**

### Blockchain Platform

The eVault system is built on a blockchain platform such as Ethereum, Hyperledger, or Corda. The choice of platform will depend on specific requirements such as transaction speed, cost, and network security.

### Smart Contracts

Smart contracts are utilized to manage access, permissions, and transactions within the eVault. These contracts ensure that only authorized users can perform specific actions, and all transactions are recorded immutably on the blockchain.

### System Components

- Frontend: User-friendly interface for stakeholders to interact with the eVault.
- Backend: Handles business logic, integrates with the blockchain, and manages interactions with existing databases.
- Blockchain Layer: Manages smart contracts, records transactions, and ensures data integrity.

## **Features:**

### User Interface

- Document Upload: Users can upload legal documents to the eVault.
- Document Retrieval: Users can search for and retrieve documents.
- Document Sharing: Users can share documents with other stakeholders.

- Change Tracking: The system tracks changes made to documents, providing a history of modifications.

### Access Control

- Role-Based Access Control (RBAC): Different roles with specific permissions.
- Smart Contracts: Manage permissions and ensure only authorized actions are performed.

### Encryption and Security

- Data Encryption: Ensures data privacy and confidentiality.
- Authentication Mechanisms: Multi-factor authentication to enhance security.

### **Integration:**

The eVault system allows seamless integration with existing legal databases. This ensures interoperability and ease of use, allowing stakeholders to access their records without disruption.

### **Scalability and Adaptability:**

The system is designed to be scalable, accommodating future changes and upgrades. It can handle increasing amounts of data and users, ensuring performance and reliability.

### **Technical Specifications:**

- Blockchain Platform: Ethereum
- Frontend: React.js
- Backend: Node.js
- Database: MongoDB
- Smart Contracts: Solidity (for Ethereum)

### **Business Plan:**

The eVault system offers significant market opportunities by providing a secure and transparent platform for managing legal records. Potential revenue models include subscription fees, transaction fees, and enterprise licensing. The system addresses the growing demand for secure digital storage solutions in the legal industry.