

## PROBLEM & PROBLEM UNDERSTANDING

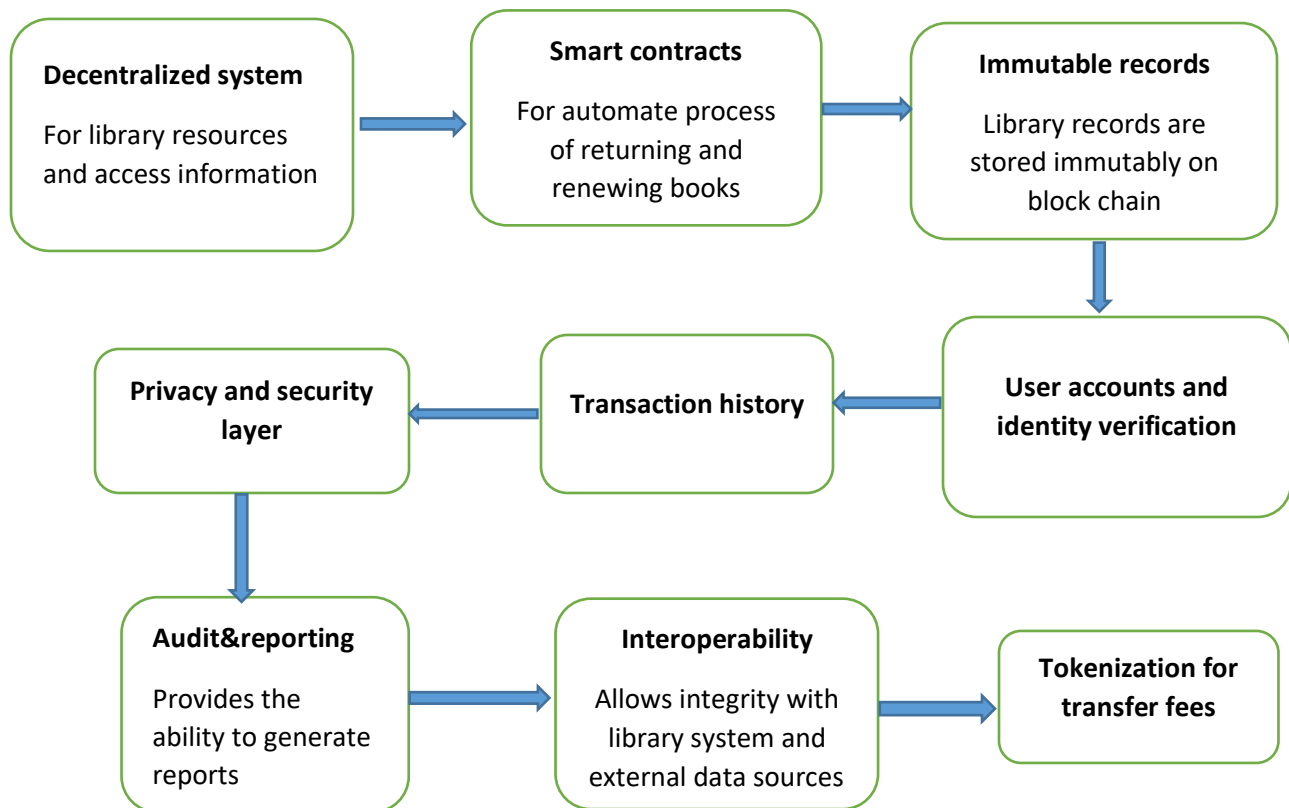
### business requirements

DATE	21.10.2023
TEAM ID	NM2023TMID08536
PROJECT NAME	Block-chain powered library management

### Business requirements:

Implementing a block chain powered library management system would require a set of business requirements to ensure its efficiency. Here are some key points, decentralized catalogue, smart contracts, immutable records, identify records, identify verification, interoperability, privacy and security, tokenization and sustainability.

### Immutable catalogue:



### Efficient transactions:

**Borrowing Process:** a. When a user wants to borrow a resource, they initiate a smart contract transaction that verifies their eligibility and reserves the resource for a specified period.

b. The smart contract locks the resource for that user during the borrowing period, preventing others from borrowing it.

c. The user's digital identity and the resource details are recorded on the blockchain.

**Returns Process:** a. When the user returns the resource, they initiate a smart contract transaction to update the resource's availability status.

b. The smart contract releases the lock on the resource and updates the block chain ledger with the return date.

**Overdue Resources:** a. If a user fails to return a resource on time, the smart contract can automatically impose fines and penalties by executing predefined rules.

**Resource Sharing:** a. Users can share their resources with others through smart contracts. This can include temporary access to ebooks, lending a book to a friend, or donating resources to the library.

b. Block chain-based smart contracts can enforce permissions and manage these sharing transactions securely.

**Immutable Ledger:** The block chain serves as an immutable ledger, providing transparency and auditability for all library transactions. This can help reduce disputes and enhance trust in the system.

**Interoperability:** Ensure that your block chain-based library management system is interoperable with existing library systems. Users should be able to access the catalog and borrow resources through traditional means as well.

**User Interfaces:** Develop user-friendly interfaces, such as mobile apps or web portals, to interact with the block these interfaces can be integrated with block chain wallets for easy access.

**Security:** Implement strong security measures, including user authentication, encryption, and multi-factor authentication, to protect user data and transactions.

**Scalability:** Consider the scalability of the block chain network, especially if the library serves a large number of users and handles a vast collection of resources.

**Compliance:** Ensure that your system complies with relevant regulations and data privacy laws, as libraries may have specific legal requirements regarding user data and resource management.