DEFINE PROBLEM / PROBLEM UNDERSTANDING

Date	26 october 2023
Team ID	NM2023TMID01000
Project name	Blockchain powered library management

TSK -46973 SPECIFY THE BUSINESS PROBLEM

PROBLEM STATEMENT:

Blockchain is a technology that allows you to store books transparently. It offers decentralized nodes for the end-to-end verification advantages in the library. This technology is a replacement for a traditional book management system with distributed, non-repudiation, and security protection characteristics. Design a smart contract using the Ethereum blockchain where you should be able to store your book details in the blockchain and should be able to query the details of the books from the blockchain and if required we should be able to change the ownership of the books and the same should be updated in the blockchain.

SPECIFY THE BUSINESS PROBLEM:

"Blockchain-Powered Library Management" revolutionises traditional library systems by harnessing Ethereum smart contracts for transparent and secure book data management. This cutting-edge approach ensures the integrity of library operations in a decentralised environment. Libraries, historical repositories of knowledge, can now seamlessly transition to a digital age with immutable and transparent book records stored on the blockchain. This system introduces a structured database where each book is represented by a smart contract, containing essential details such as title, author, ISBN, and ownership history. Users can query book information, and authorised personnel can efficiently add new books or transfer ownership with a single, secure transaction. By eliminating centralised intermediaries and enabling end-to-end verification, this system empowers libraries with unprecedented data transparency, security, and efficiency. Patrons can trust the accuracy of book details, while librarians can streamline operations and maintain an unforgeable history of book ownership changes. "Blockchain-Powered Library Management" is the future of library administration, enhancing accessibility and trust in an ever-evolving digital landscape.

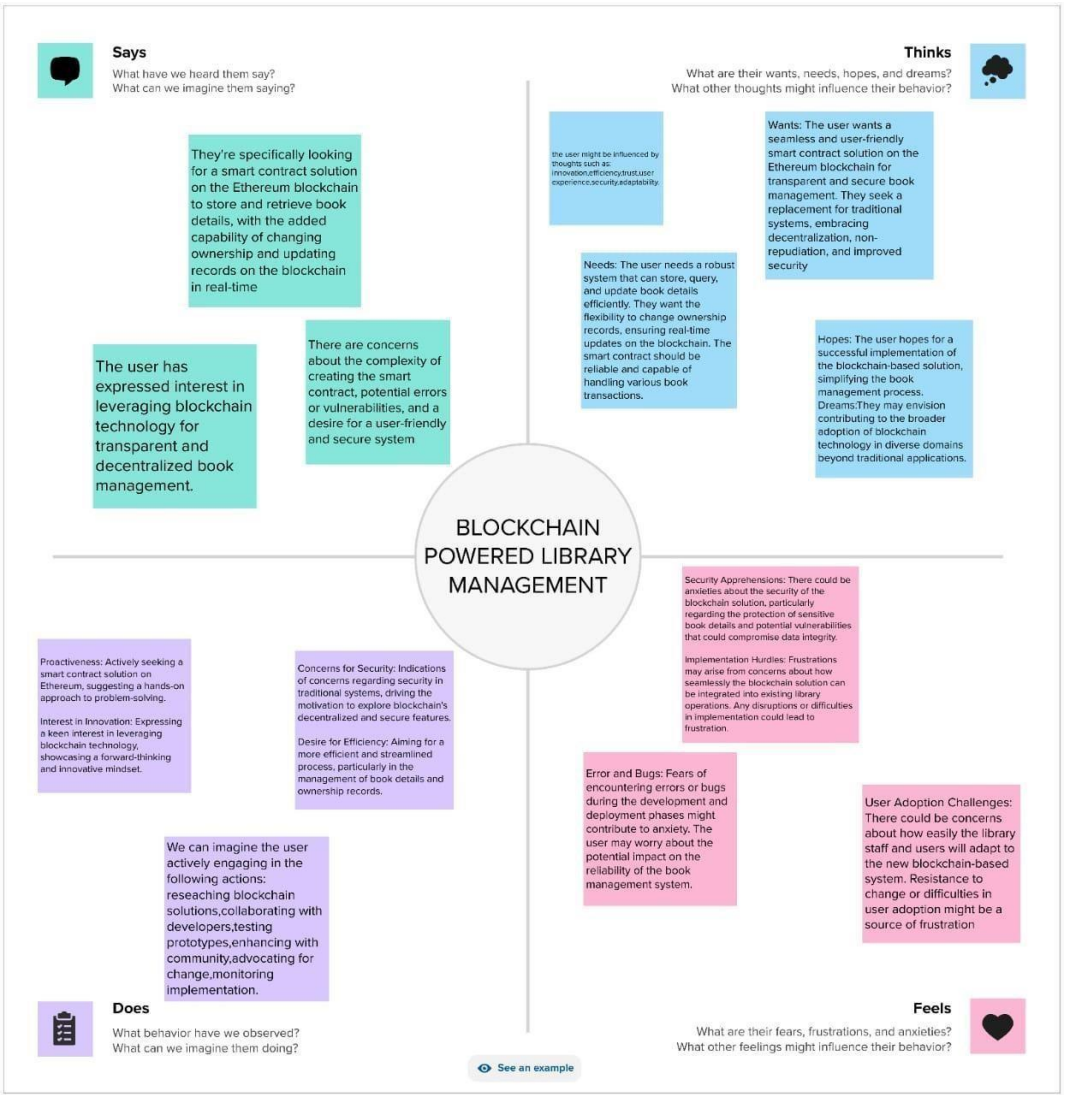
Ownership Transfer: In traditional systems, transferring ownership of a book might involve manual record-keeping or complex administrative processes. This can be time-consuming and prone to errors.

Data Integrity: Ensuring the accuracy and integrity of book data, such as titles, authors, and ownership records, can be challenging in centralized systems where data can be altered or manipulated.

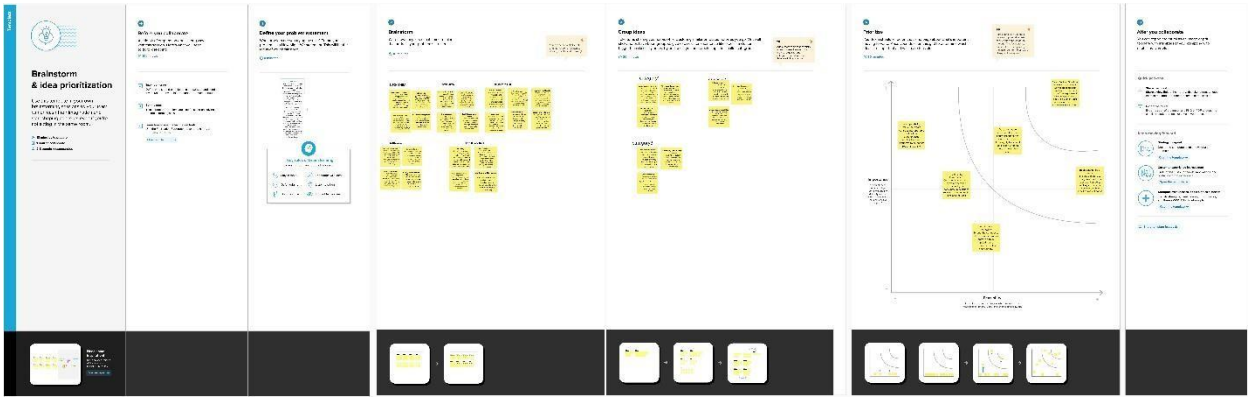
Trust and Transparency: Users of a library system often need to trust the institution's management of books and their ownership records. Blockchain technology provides transparency and decentralization, reducing the need for trust in a single centralized authority.

Auditability: In the event of disputes or the need to audit the history of book ownership, it can be challenging to provide a comprehensive and tamper-proof record of ownership changes.

EMPATHY MAP:



BRAINSTORMING:



PROBLEM STATEMENT:

Problem statement	I am	I am trying to	but	because	Which makes me feel
Ps-1	LIBRARY ADMINISTRATOR	Maintaining the book catalog,add and manage books in the library.	Does not empowers library with unprecedented data transperancy,security and efficiency.	All transactions and changes to book records are transparent and publicly recorded on the blockchain. This transparency allows anyone to audit and verify the data without relying on a central authority, which can foster trust in the system	Stressed,exhausted and insecure
Ps-2	customer	ensure transparent and secure transactions related to book borrowing, returns, and possibly even ownership records. Blockchain can enhance trust and accountability in these processes.	Customers in traditional library systems might face issues like unclear transaction records, delays in book availability, or concerns about data security. Blockchain adoption aims to address these problems by offering transparency, efficiency, and a secure way to manage libraryrelated transactions.	Blockchain's decentralized and tamper-resistant nature ensures that transaction history remains transparent and unaltered. This can alleviate concerns about data manipulation or loss of information. Additionally, smart contracts on the blockchain can automate processes, reducing delays and improving overall efficiency in library management.	feel a greater sense of trust and security when using blockchain for library management