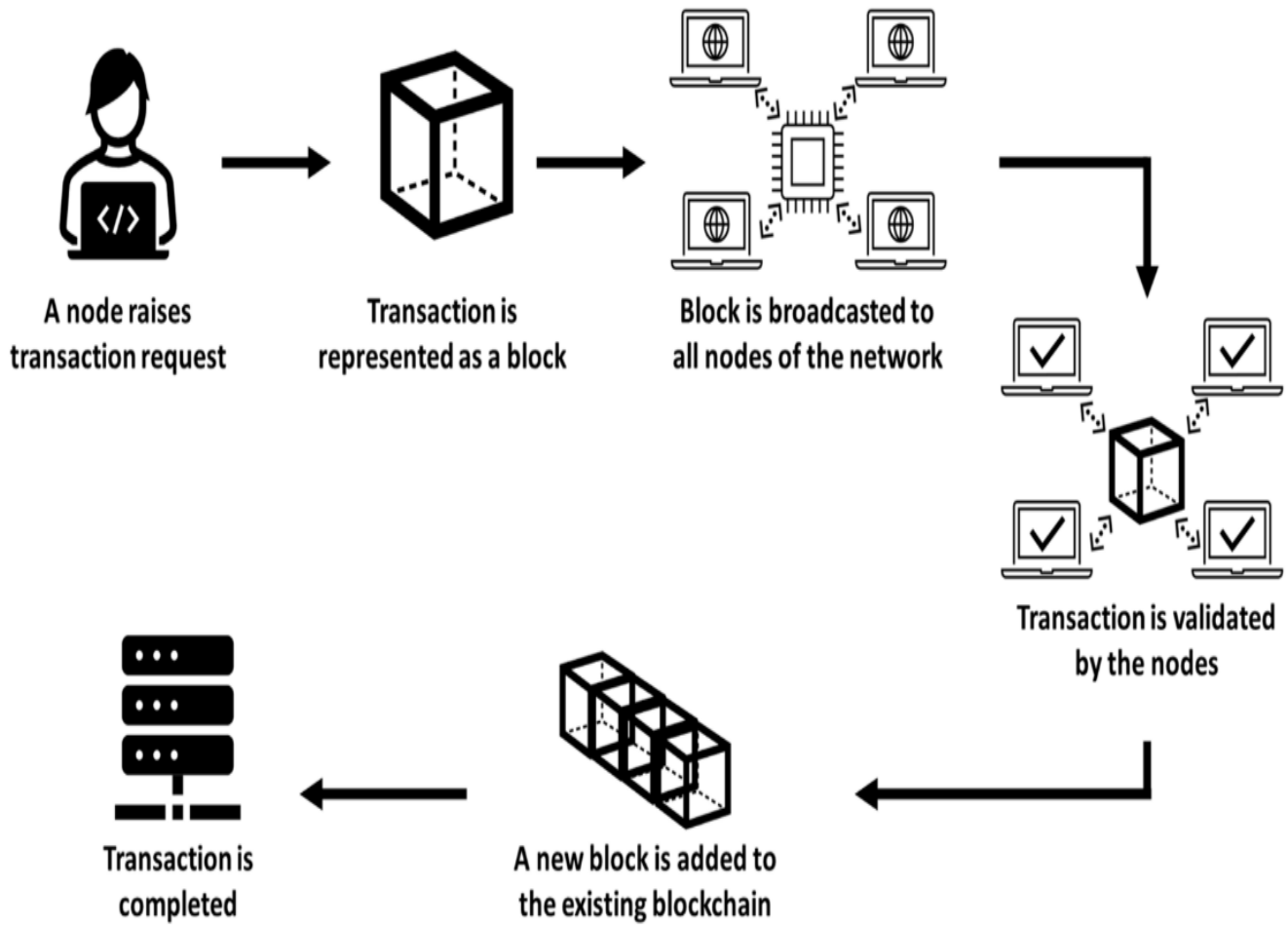# POWER LIBRARY MANAGEMENT:

- Blockchain is the new Web 3.0 redefining technology that is transparent with immutable records and zero duplicity in the electronic peer-to-peer networks. Blockchain is defined as a mathematical and technical transaction depending on a consensus-based algorithm with the electronic generation of records of blocks in P2P networks.

- Blockchain technology was financially first introduced by Satoshi Nakamoto in the mining of bitcoin in a paper in 2008. Bitcoin is the first digital money (crypto-currency) followed by Ethereum (public blockchain implementation) and other crypto-currencies. Blockchain is being used in various industries, sectors, and academics for accountancy as auditable records are cannot be changed and highly secure distributed ledger. Blockchain 1.0 (Digital Currency) is evolving to Blockchain 3.0 (Digital Society) through Blockchain 2.0 (Digital Economy i.e.

- Bitcoin 2.0 protocols, Bitcoin 2.0, Smart property, Smart Contracts, DAPPS). The Areas of implementation of blockchain technology in library are DRM (DRM helps copyright owners to maintain and control their content in digital medium), Plagiarism of articles, Interlibrary loans (interlibrary services), payments of journals and books to a publisher, scholarly publishing in various research fields. BLOCKCHAIN BASED LIBRARY MANAGEMENT In the library automation based on RFID in KOHA with kiosk, the problem of auditing and stocktaking of books, papers, and periodicals persists. The solution to absolute transparency and immutability is blockchain-based library management systems. Library management can be done by the novel blockchain technology. To understand the purpose of the proposed proposal, consider Ram wanting to borrow books from "Library A" (LB_A), and taking notes in Library B (LB_B). LB_A and LB_B are working together through the system.

- LB_A can recognize Ram's needs and claim his right to act without knowing Ram's exact identity. Hence, Ram can continue to borrow books in loan transactions stored in blocks. A week later, Sam, who is registered with Library B (LB_B), wants to borrow the same book that Ram currently has.

- Sam could contact Ram through the system and ask him if he could deliver the book to him without knowing Ram's exact identity.

- Ram no longer needs it, so he can use the system to execute block transactions and transfer the required loan to Sam. You can combine this by delivering Sam's books directly to Ram without returning them to the library. Thanks to the blockchain, the library staff, and the librarian can always check and find the current borrower of the issued book

- Blockchain is an innovative technology that could replace the current internet framework with a secure hash algorithm based on consensus-based transactions in P2P networks. Library management is an important part of modern libraries. In an advanced library, Library management is currently done on RFID-based kiosk implementation on KOHA or other Library management software to facilitate self-check-in and out. The problem of auditing and stocktaking of books, journals, periodicals is still a big issue despite library automation based on RFID.

- Blockchain-based library management systems being transparent and immutable records are the answer to full proof auditing and stocktaking in the present setup of advanced libraries. Blockchain library management system restricts the use of copyright digital materials. Here we are demonstrating an illustration of library management using blockchain written using solidity language on Remix IDE.

- The blockchain implementation of Library management of books is successfully executed on Remix IDE. In this paper, we have given the source code of the smart contract and its snapshots for the blockchain library management of books using blockchain technology.

TECHNICAL ARCHITECTURE:

A node raises transaction request

Transaction is represented as a block

Block is broadcasted to all nodes of the network

Transaction is validated by the nodes

A new block is added to the existing blockchain

Transaction is completed

TECHNICAL STACK:

Supply Chain DAPP

TRUFFLE DEVELOPMENT ENVIRONMENT

Ganache Personal blockchain for Ethereum development

solidity SMART CONTRACT

LOCAL BLOCKCHAIN NETWORK

WEB3 js CLIENT COMMUNICATION

Metamask

HTML CSS Javascript FRONTEND

Manufacturer

Wholeseller

Distributer

Pharmacy

Customer

Architecture Diagram