Updated Project Workflow: Blockchain-Based Information Utility System

Project Title:

Design and Implementation of a Blockchain-Based Mini Information Utility System

Objective:

To develop a prototype that simulates the secure recording, verification, and storage of loan information and associated financial records between a creditor and a borrower using blockchain technology. This aims to enhance trust, transparency, and traceability in India's insolvency ecosystem.

Key Roles

Role	Description
Creditor	A financial institution (e.g., HDFC Ltd) submitting loan and financial data into the system.
Borrower	A company (e.g., Reliance Capital) that confirms or rejects the submitted loan and financial data.
Admin	The Information Utility authority or government entity responsible for auditing verified records.

Updated Workflow

1. User Authentication

- Each actor logs into the system using secure, static credentials (simulated for prototype):
  - **Creditor** logs in to submit loan and financial data.
  - **Borrower** logs in to review and confirm or reject submitted data.
  - **Admin** logs in to audit verified or rejected financial records.

2. Loan and Financial Data Submission (By Creditor)

- The creditor accesses the data submission module.
- Inputs the following:
    - **Loan Details:**
        - Borrower Name (e.g., Reliance Capital)
        - Loan Amount (e.g., ₹500 crore)
        - Loan Start Date
        - Maturity Date
        - Loan Status (e.g., Active or Defaulted)
    - **Additional Financial Records:**
        - Asset Records (e.g., movable and immovable assets)
        - Balance Sheet Details (e.g., total assets, liabilities, equity)
        - Existing Liabilities (e.g., other outstanding loans)
- Upon submission, all data is sent to a smart contract.
- The smart contract writes the entry to the blockchain with a status of **"Pending Confirmation"**.

3. Data Review and Action (By Borrower)

- The borrower logs into their portal.
- Views all pending records associated with their organization.
- Each record contains:
    - Creditor Name
    - Loan Details
    - Asset Records
    - Balance Sheet Summary
    - Existing Liabilities
    - Submission Timestamp
- The borrower may take one of the following actions:
    - **Confirm** – if all data is accurate.
    - **Reject** – if the data is incorrect or not acknowledged.

4. Borrower Decision and Smart Contract Response

- **If Confirmed:**
    - The smart contract updates the record status to **"Verified"**.
    - The verified data is immutably stored on the blockchain.
- **If Rejected:**
    - The smart contract flags the record as **"Rejected"**.
    - The rejected data is also immutably stored for audit purposes.

5. Admin Review and Auditing

- The Admin (Information Utility or Government Authority) accesses the system through a secure dashboard.
- The Admin can:
    - View all Verified and Rejected records.
    - Audit loan and financial data including timestamps and hash values.
    - Export or download immutable records for regulatory and legal use.
- The blockchain infrastructure ensures:
    - Tamper-proof records.
    - End-to-end traceability.
    - Full data integrity.