PARSHVANATH CHARITABLE TRUST'S
A. P. SHAH INSTITUTE OF TECHNOLOGY
Department of Information Technology
(NBA Accredited)

Title of your Project

Decentralized Finance - Savings and Lending Application

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Project Guide
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1. Introduction

- Problem Identified :
  - Traditional financial systems often impose predatory interest rates and practices, making lending and borrowing inaccessible or unfair for many users
- Solution Proposed :
  - DeFi Creditor is a decentralized application (dApp) built with Solidity, React.js, and Ethers.js that enables users to lend and borrow cryptocurrency in a trustless environment, allowing them to set their own interest rates and terms.

2. Objectives

1. To build a decentralized finance (DeFi) platform for lending and borrowing using Ethereum smart contracts.
2. To eliminate the need for centralized intermediaries in credit systems through trustless and automated transactions.
3. To ensure transparency, security, and immutability of all lending/borrowing activities using blockchain technology.
4. To provide users with a simple and secure interface to access DeFi lending and borrowing features.

3. Scope

1. Can be used by individuals to lend or borrow cryptocurrencies in a decentralized environment.
2. Can be integrated with crypto wallets like MetaMask for seamless transaction handling.
3. Can be expanded to include credit score systems or guarantte based mechanisms.
4. Can be deployed and tested on Ethereum test networks such as Ganache for real-world simulations.

4. Literature Survey

Title	Author	Summary
Blockchain-Based Lending: A New Era of Decentralized Finance	John D. Smith et al (2024)	This paper explores how blockchain technology improves lending, reducing costs and increasing accessibility. It highlights decentralized lending benefits compared to banks and how smart contracts automate transactions securely.
Smart Contract Security in DeFi Applications	Alice Johnson and Mark Lee (2023)	The paper discusses security risks in DeFi smart contracts, such as reentrancy attacks and price manipulation. It suggests best practices to improve contract safety and ensure reliable financial transactions.
A Comparative Study on DeFi Lending Protocols	Robert Brown et al (2023)	This research compares various DeFi lending platforms, analyzing their interest rates, security, and usability. It provides insights into optimizing lending models for better user experience and higher returns.

5. Proposed System

1. Feature 1 : Decentralized Lending & Borrowing
    - Users can lend their crypto assets to earn interest or borrow assets by locking security deposits, all without third-party intermediaries.
2. Feature 2 : Smart Contract Automation
    - All transactions, interest calculations, and repayments are managed automatically through secure Ethereum smart contracts, ensuring transparency and trust.
3. Feature 3 : MetaMask Integration
    - The platform integrates with MetaMask, allowing users to easily connect their wallets and perform transactions directly from the web interface.

6. Outcome of Project

1. Loan Request : Users can request loans by specifying the desired amount, which is stored on the blockchain via a smart contract.
2. Lending : Lenders can view and fulfill active loan requests by sending ETH to borrowers through the decentralized interface.
3. Repayment : Borrowers can repay loans directly via the app, triggering updates to the loan status on the blockchain.
4. Transaction Tracking : All loan-related transactions are transparently recorded and displayed using Ethereum smart contracts for auditability.

7. Block Diagram

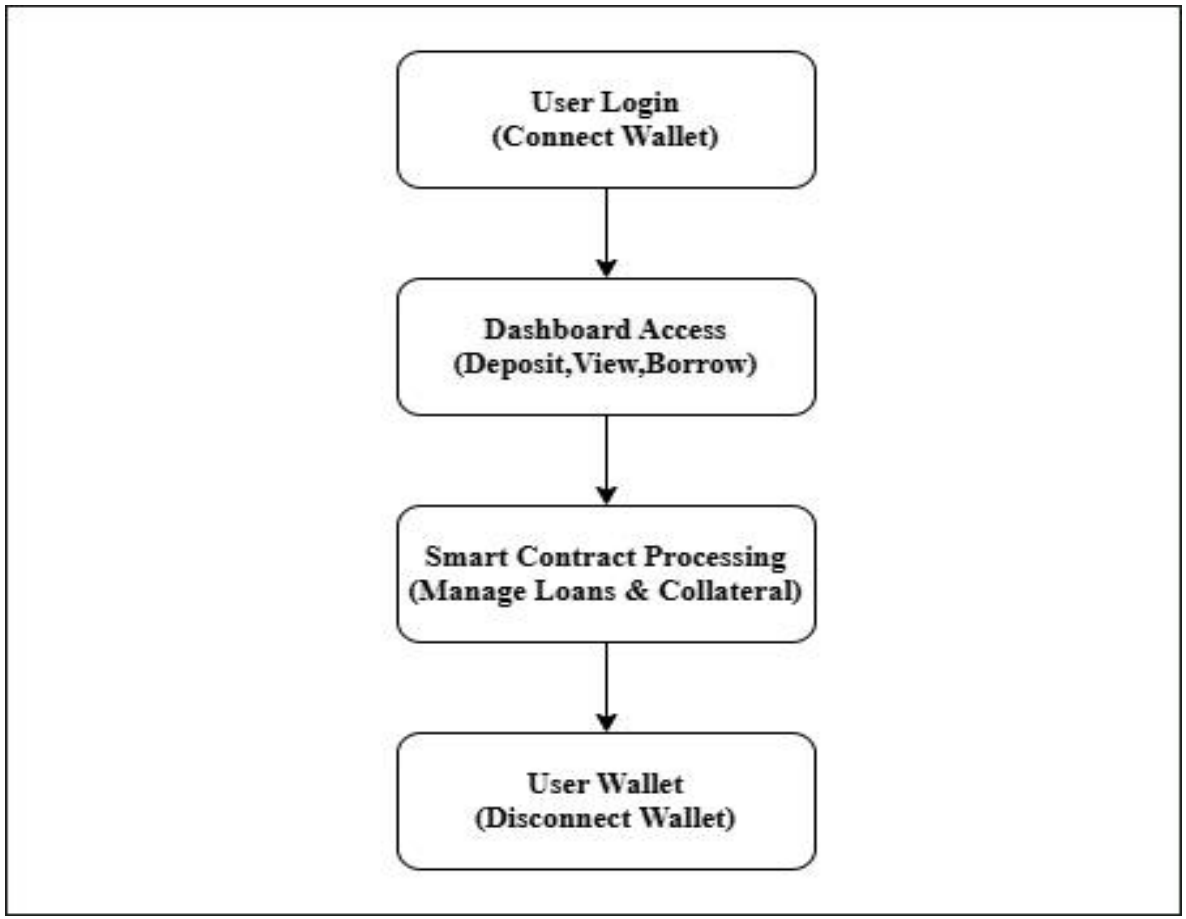


Figure 7.1 Block Diagram

8. Use Case Diagram

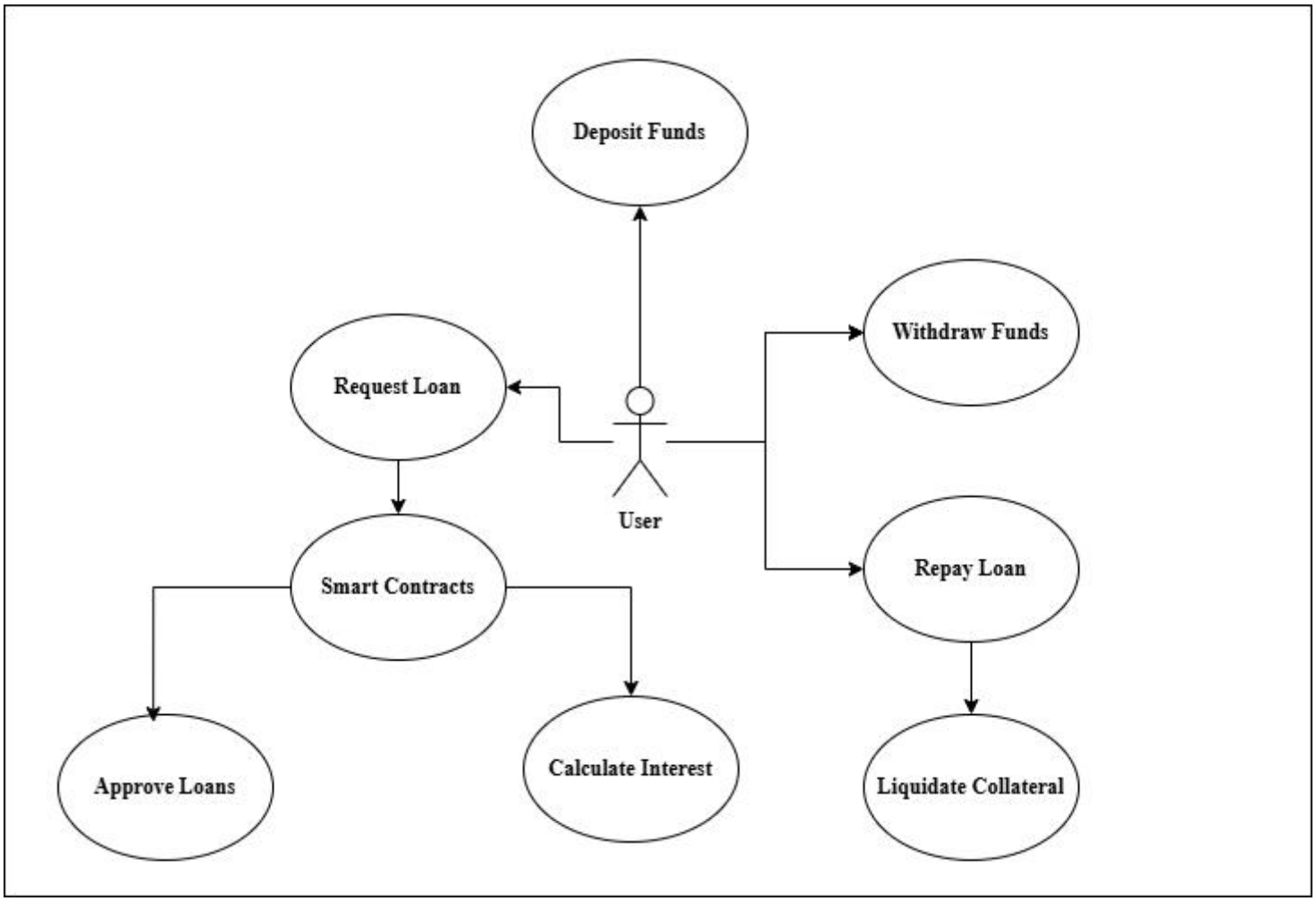
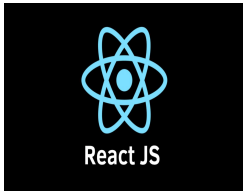


Figure 8.1 Use Case Diagram

9. Technology Stack

1. Blockchain: Ethereum , MetaMask
2. Smart Contracts: Solidity , Ganache
3. Backend: Node.js
4. Frontend: React.js



Thank You...!!