WELCOME

EnNilam

"Empowering Digital Ownership: Securely Store, Buy, and Sell Land as NFTs with Confidence"

Solution/Project Idea Description

Problem:

Real estate fraud, especially in land transactions, involves **fake ownership claims** and **hacking of centralized databases**, causing financial loss and legal disputes. Vulnerable records and lack of transparency make **fraud easier**.

Solution:

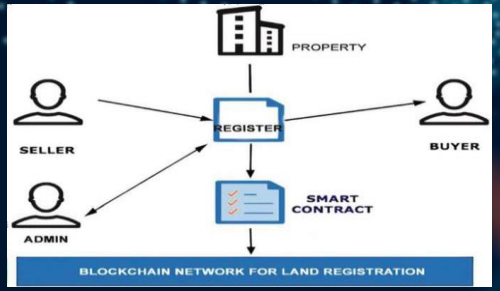
- Land titles are converted into **tamper-proof NFTs**, stored on a **decentralized blockchain**, and linked to **government-verified records** to ensure authenticity and prevent fraud.
- The immutable blockchain ensures ownership records cannot be altered, while transfers are secured with **biometric authentication** (fingerprint and iris scan).
- Landowners can use their NFTs as collateral for microloans, promoting financial inclusion.

How It Works:

- Users register via **Aadhaar authentication**, creating a **digital wallet** with a security key for secure access, transactions are further secured with biometric data linkage.
- Upon sale, the existing NFT is deleted, and a new one is generated for the buyer; users can participate in **private or public bidding**, with all land documents **securely verified.**
- Limited land information is publicly accessible, while full details are owner-specific; transactions are secured through **biometric data linkage.**

Existing Solutions:

- Digital land registries have been established in several regions, allowing land records to be stored electronically.
- NFT-based land ownership is still in early stages, with limited adoption globally.



Brief Description:

EnNilam is a **blockchain-based platform** that facilitates secure, transparent land transactions. Users register via Aadhaar authentication, creating a **digital wallet** for secure access. Land ownership is represented by NFTs, which are transferred during sales with automatic document updates. The platform **supports private and public bidding**, verifies documents, and ensures **biometric-linked security** for efficient and fraud-free transactions.

Objectives

Design

User Dashboard**:** View land records and ownership history; initiate transfers.
Land Registration**:** Government links verified documents as NFTs to wallets.
Ownership Transfer**:** Secure blockchain transfers without intermediaries.
Verification System**:** Transparent ownership verification for all entities.
Decentralized Storage**:** Blockchain-based records ensure transparency and accuracy.

Build

Frontend: React.js , Tailwind CSS
Backend: Node.js , Express.js
Blockchain: Polygon (NFTs with Solidity)
Database: IPFS(documents), MongoDB(metadata)
Authentication: Web3 via MetaMask
Contracts: Custom-built Solidity for landtransactions.

Integrate/ Test

1 . Users connect blockchain wallets to access verified land records. Transactions enable instant ownership transfers via smart contracts, ensuring transparency.
2 . Government officials use an admin dashboard to verify documents and link them to owners' wallets. With blockchain records, third parties can verify ownership easily, reducing fraud.
3 . This system transforms land ownership management, making it instant, secure, transparent, and decentralized.

Features

01

Secure Land Ownership with NFTs

- Land titles are digitized as NFTs, ensuring transparent, immutable, and tamper proof ownership records.
- NFT metadata includes key land details, owner information, and historical transactions, stored on the blockchain.

02

Biometric Authentication & Decentralized Identity

- Users register with biometric data (fingerprint, iris, or facial recognition) to securely link land ownership to their identity.
- A decentralized identity (DID) system ensures privacy by hashing biometric data on the blockchain.

03

Enhanced Financial Inclusion & Government Services

- The system facilitates access to microloans and government subsidies by using land titles as collateral.
- Integration with a DApp provides rural communities with transparent access to land records and financial services.

Stability and Future Potential

Government Verification Integration:
Linking ownership proofs with official records enhances trust and reliability . Tamper-Proof Records: Ensures data integrity and protection from unauthorized changes.

User Base Expansion:
Targeting both individual landowners and commercial entities interested in secure land transactions.

AI and Data Analytics:
Utilizing advanced tech for better insights, fraud detection, and transaction analysis.

Continuous Innovation:
Ongoing development of features based on user feedback and market demands to maintain relevance.Building Strategic Partnerships: Collaborations with legal, financial, and real estate entities to foster an ecosystem that supports user needs.

Team Members

Pradhun Krishna
Team Leader

Naveen Kumar

Navyavarshini M

Yuva Shree G

THANKS!