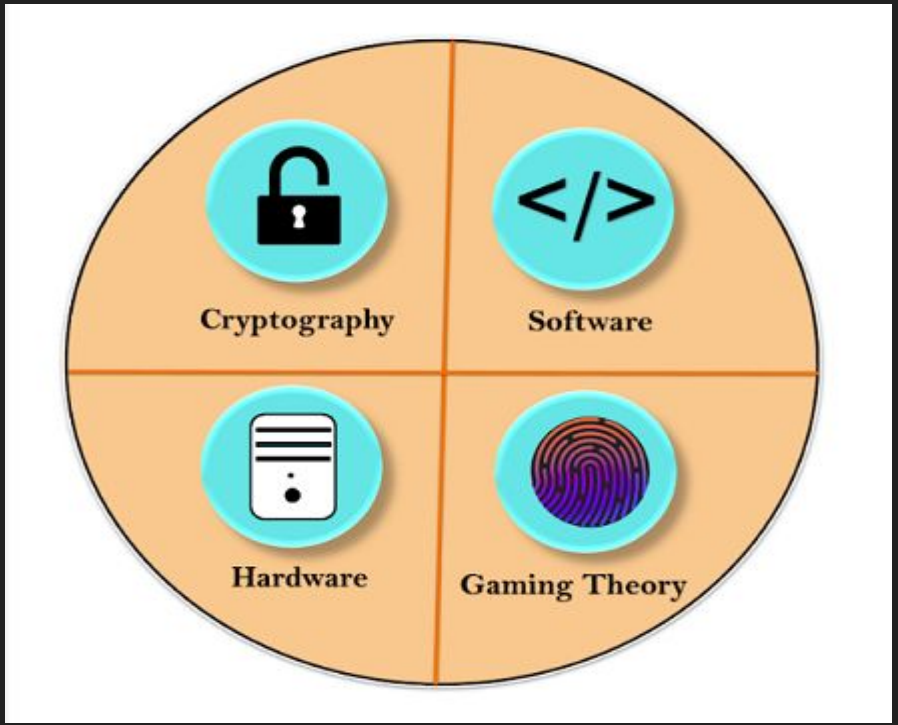
Blockchain

Property Rights - Secure Your Assets Through Blockchain
Self Sovereign [TEAM ALIAS]

TEAM ALIAS

1. Prem sagar 22BPS1152
2. Abishek Suresh 22BPS1131
3. Sairam 22BPS1081
4. Vijay Arunachalam 22BPS1043

Basic Components Of BlockChain



The Need To Integrate Properties Using Blockchain

- The disintermediated concept of Blockchain verifies the authenticity of a property without a third party being involved and thus the absence of a middlemen eliminates the unnecessary inefficiency that's involved when we are using a third-party.
- The distributed network is more reliable because there is no single point of failure. Here, the work is shared across thousands of computers which are all running and sharing the workload.
- There is no central control, no central repository of data and no management in the middle that overseeing what Bitcoin does. As a result, there is no central point of failure.

Problem Definition

In India, every single property is uniquely identified by its Survey number. Every Single State has their own authority who issue this survey number. For ex: if we consider a particular district and a particular taluk in Tamil Nadu, a property has a unique survey number or a unique ‘patta’. Even though records exist, some land disputes still happen today due to duplicate survey numbers issued due to human error,corrupt middlemen(not blaming everybody, but some of them always exist). So, to remove physical paperwork and reducing land disputes, we are trying to implementing Blockchain Technology in Property Rights.

Our Idea of using smart contract

- Smart contracts are self-executing programs stored in the blockchain which verifies fulfillment and enforces the terms of a contract thereby making sure that party at both the ends are satisfied.
- For every piece of land we deploy a smart contract that keeps track of the current owners and also the previous owners.
- Transfer of ownership is done through transaction calls to the contract.
- The calls to the contract can only made by users who have a government minted NFT corresponding to their various IDs in their wallet.

Auction System

- In order to sell land the owner starts an auction with a minimum expected value.
- Participants transfer ETH to the contract.
- The contract transfers ownership to the largest bidder and returns the ETH back to the rest of the bidders.

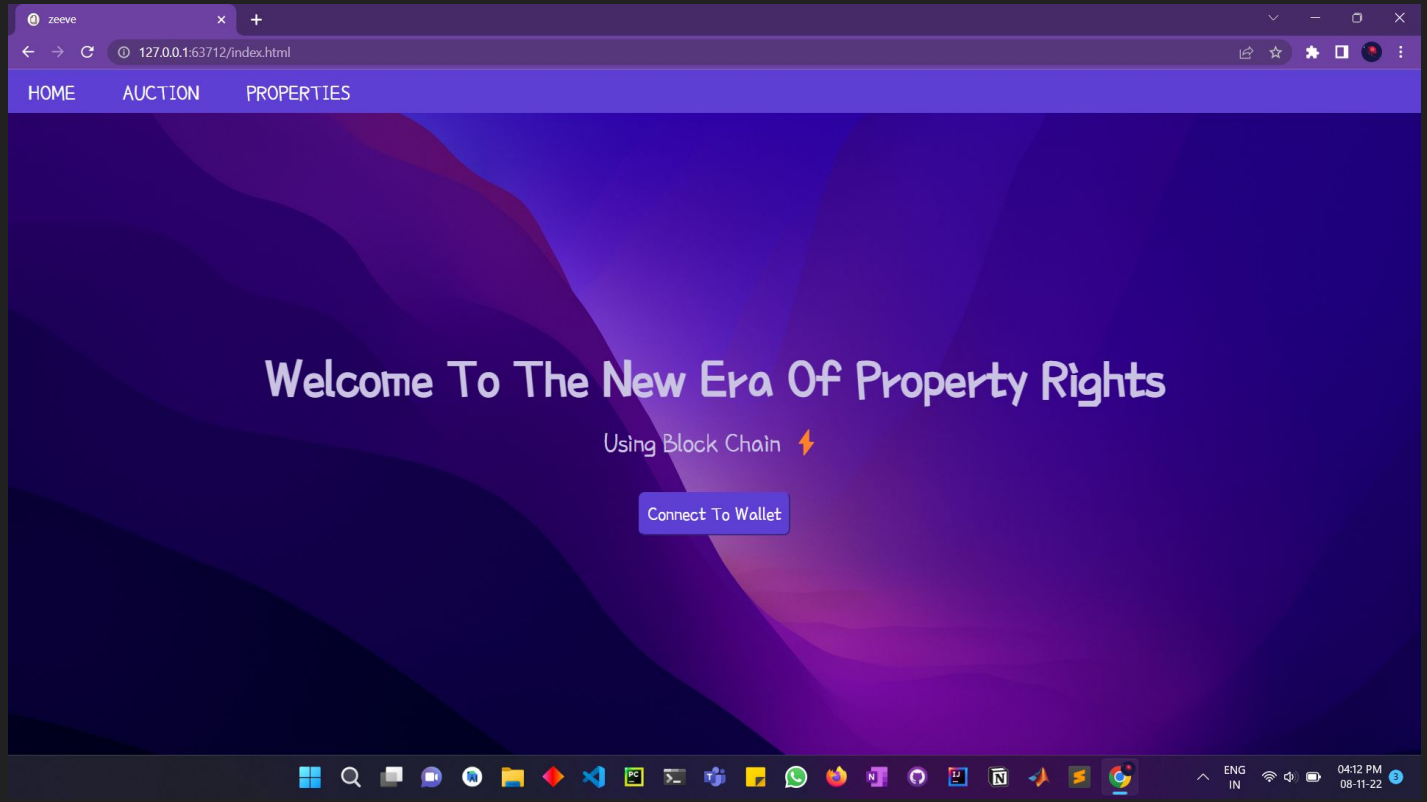
Why to trust decentralized money transfer?

- Right now, to buy a land stamp duty charges are 7% of property market value, and registration charges are 4% of property value. A property buyer has to pay a total of 11% of property value as charges while registering their property.
- But what if the person in authority is demanding bribe money? Already the money required to register is 11% which is very high, and if the person is required to pay more amount that too illegally?
- To prevent this we could append cryptocurrency based transaction of the 11% charges which is decentralized, clean, quick and efficient than in-real-life money transaction.
- Thus in the end the only money the buyer is gonna pay is the 11% and the gas charges required to attract miners to validate your transaction.

What’s the outcome of our project?

- Transfer of land and issuance of unique survey numbers by a dedicated software with no centralized authority thereby eradicating corruption and human error.
- Immutable(unchangeable) array of data interlinked with the block before it, thereby tracking record of every single property bought in existence and tamper-proof.
- Data integrity is maintained as there is no room for forging of documents or other such illegal methods.

THE FRONT-END OF OUR PROJECT



Round 2 /

We have created and tested a smart contract which contains the details of current owner, previous owners, taluk, survey number etc. In order to set a threshold price for land, the owner gets to decide the minimum price for which he will sell a piece of land. For ex: if there are two buyers M and S, if M pays 1ETH for a piece of land and S counters it by paying 2 ETH and the owner of the land sets a minimal price of 1ETH for that land, Then S gets to buy it because the price offered is greater than or equal to threshold price and exceeds M’s offer price by 1ETH . M’s 1ETH is returned back.

An important thing to remember is that a person gets to own the piece of land, but can never own the contract.

Round 3/

We have used Goerli Test Network in our project.

Goerli is an Ethereum test network that allows for blockchain development testing before deployment on Mainnet, the main Ethereum network.

For deploying solidity smart contracts, we have used brownie python testing framework.

GitHub link:

A simple contract that mints NFT given a token URI.

https://github.com/PremSagarS/ethprop/