

# LAND REGISTRY USING BLOCKCHAIN

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## Abstract:

With the use of blockchain, it is possible to run a continuously expandable list of bookings decentralized and the respective proper state must be documented because many participants are involved in the bookkeeping. This concept is referred to as Distributed Ledger technology (decentralized booking technology). What should be booked and documented with it, is irrelevant. Crucially, later transactions build on previous transactions and confirm them as correct by demonstrating knowledge of past transactions. Bookings do not necessarily have to be property transfers, but it can also be a formal confirmation of the existence of all necessary documents by the notary so that a notarized land purchase agreement can be made. Thus, individual processing steps of the process of transfer of ownership could be speeded up and made more transparent, so that the parties involved can at any time have an overview of the status of proceedings. The goal of this project is to replace existing property registration systems with the help of completely online and decentralised blockchain based property registration system.

Keywords: Blockchain, Land Registry, Operational Efficiency, Data Transparency, Security Measures, Transaction Time Reduction.

## I. INTRODUCTION

Land registry is a system that homes the essential information of land possession. Existing system is not safe since many ways as majority of the process is not transparent, system is slow, and the trade of property more than once needs to be recorded accurately. To solve this issue, we are implementing blockchain technology, to counter these loopholes and find out the problems connected with land register system like mentioned above.

Our system uses this blockchain technology and eradicate the problems in the existing system. We provide a way for secure trading of land and the privacy is not compromised at any point. Documents provided by users are verified directly by land survey department and on successful verification of documents, the landowner will provide with the unique ID which is attached with the land ownership document, and which will be passed to the next user after selling that land. This avoids reselling of same land. And this system being the online platform it removes the middleman or broker to sell or buy the land. This also records all the transaction history of each land is secure.

The process is sustainable to errors due to involvement of human, and the current digital method of property registration relies on a centralized server, which has several drawbacks. These include the potential for misuse, susceptibility to tampering, lack transparency and inefficiency.

## II. LITERATURE SURVEY

In current well-functioning systems transactions are physical in nature. The normal system indirectly affects the cost, paper resources, storage for huge record keeping, security problems with the records. Land ownership is one of the most controversial and combative issues in India today. India has many regional and territorial disputes. There are many disputes going on based on the ownership of the land.

The revenue department of Haryana made some progress in digitalizing the land registration by developing HARIS for registering property and HALRIS for managing the land records. Despite these advances, land registry process is still complex. For registration of documents, the authorized signatories of sellers and buyers must be present, along with two witnesses.

Blockchain provides transparency of the records, transactions. Over past five years, governments have deployed blockchain internationally to improve service and ensure the integrity of public records. The United Nations development program was particularly interested in developing a solution that would improve land registry in India. Block scale solutions worked in collaboration with the state government to working prototype of a blockchain enabled registry.

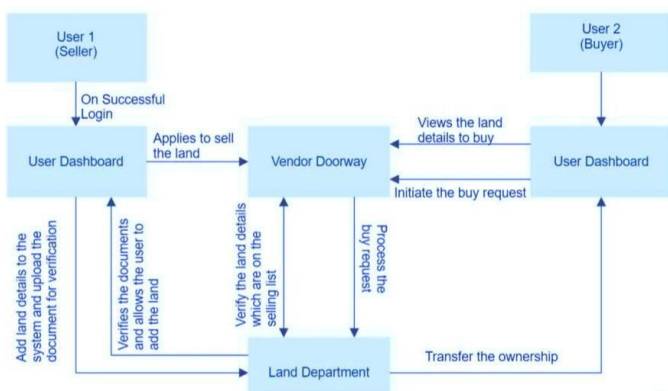
### III. PROPOSED SYSTEM

This system mainly aims at providing the secure transactions, transparency of records. Digitalizing of documents prevent the loss of records. We are mainly focusing on digital service delivery and invest in reengineering process to boost efficiency with involvement of fewer human resources. This system is more as compared to the past system.

The proposed project seeks to create a DAPP that will act as a vendor entryway for all operations linked to trade and registration of land transactions to take advantage of these advantages. This DAPP will use smart contracts and blockchain technology to offer a dependable and open method for managing property records.

Our project mainly aims at providing the secure transactions, transparency of records. Digitalizing of documents prevent the loss of records. We are mainly focusing on digital service delivery and to invest in re-engineering processes to boost efficiency. Our system is incredibly economical, as it involves fewer human resources. This system is more reliable as compared to the traditional system.

### IV. IMPLEMENTATION



User registers themselves to the system/website, on successful registration the user is directed to the dashboard, Here on dashboard the user can add, sell, or buy the land and also view their previous history of transactions made, if user owns property then they have to add their land details and get the land verified from the land department. Land department initially verifies the documents provided by the user.

And on successful verification they will provide each user the unique ID which will be attached to that land document and whenever this property is sold this unique ID along with ownership will be passed to the buyer. When a user initiates a buy request this request will be notified to both the seller and the land department and will be further processed by land department. After verification of the land and payment medium the land ownership along with unique ID will be transferred to the buyer with consent of both buyer and seller.

Flutter : the use of Flutter for the frontend development and Truffle for the DAPP setup ensures that the application is scalable, cross-platform, and secure. It provides a seamless experience for the users, land inspectors, and contract owners, and enables efficient management of land-related transactions.

Smart contracts : The blockchain integration streamlines the incorporation of business rules, enabling smooth and secure property registration transfers. Utilizing a smart contract backend, the system establishes the requisite terms and conditions for seamless transactions.

Truffle : The Ethereum platform serves as the foundation for developing decentralized applications (DApps), with the renowned Truffle framework offering an array of features and tools to expedite and optimize the development journey.

Metamask :A well-known cryptocurrency wallet programme ,necessary for all Ethereum users, including traders, developers, and casual users. A popular option for managing Ethereum wallets and transactions due to its user-friendly design, simple interaction with DApps, and strong security measures.

Web3.js : It is used to communicate with the Ethereum network. By delivering queries using the JSON-RPC protocol, which enables frictionless connection with the Ethereum nodes, it enables developers to engage with the Ethereum network. For transmitting transactions, reading data from the blockchain, and developing smart contracts, the library offers a straightforward and user-friendly interface.

### V. CONTRIBUTION TO SOCIETY

- To make the process of land registry available to everyone at their fingertip.
- To prevent people from fraud and scam.
- Reduce the work of land department by digitalizing it and reducing the cost of maintenance of record.
- To maintain the previous history of land in digitalized form so that document is free from fear of loss.
- To make the process of land registry transparent.
- To provide secure transaction to user.
- Reduce the waiting time of the user by digitizing the process.
- Efficient use of energy and resources
- To make the process land registry quick, easy and simple To prevent people from frand and scam.

## VI. RESULTS AND SNAPSHOTS

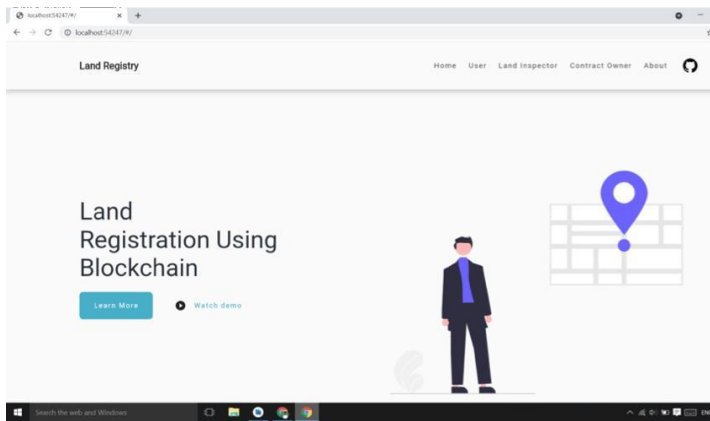


Fig 1. Home page

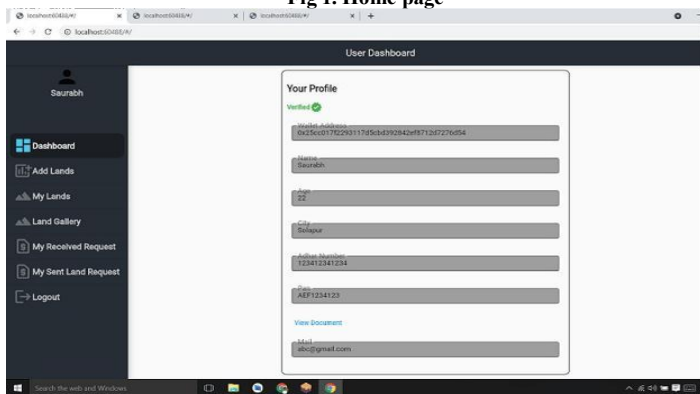


Fig 2. Dashboard

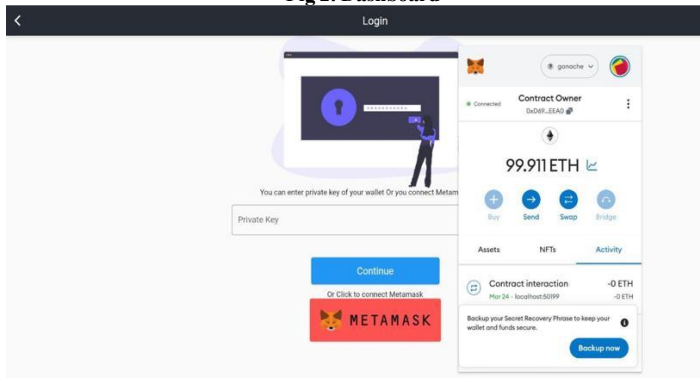


Fig 3. Login page

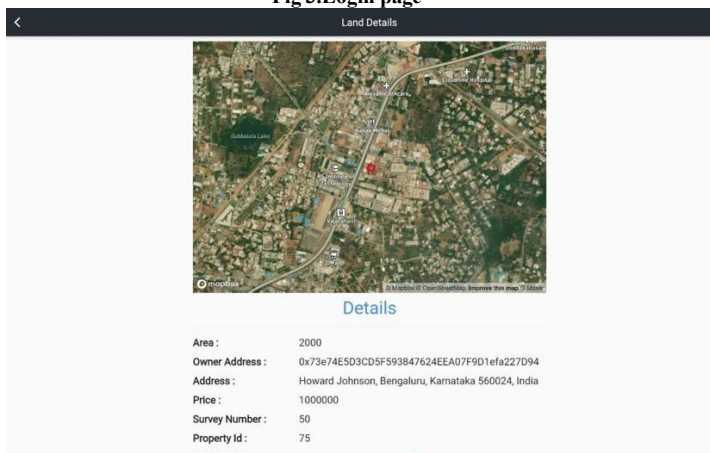


Fig 4. Land details page

## VII. CONCLUSION

In conclusion, implementing a land registry system using blockchain technology offers a transformative solution to many longstanding challenges in property management. By leveraging blockchain's immutable and decentralized nature, land registries can significantly enhance transparency, security, and efficiency in property transactions. The transparency provided by blockchain reduces the risk of fraud and ensures the integrity of land records, instilling trust among stakeholders. However, challenges such as scalability, regulatory compliance, and interoperability with existing systems need to be addressed for widespread adoption. Despite these challenges, the potential benefits of blockchain-based land registries in promoting economic development, fostering investment, and ensuring equitable access to property rights are undeniable, and promise for a more transparent, efficient, and inclusive property management system.

## VIII. ACKNOWLEDGEMENT

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