

SYNOPSIS ON:

**SECURE SHARABLE LAND RECORDS REPOSITORY USING
BLOCKCHAIN TECHNOLOGY FOR INDIAN REVENUE SYSTEM.**

PROJECTEES

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Project Title :**SECURE SHARABLE LAND RECORDS REPOSITORY USING BLOCKCHAIN TECHNOLOGY FOR INDIAN REVENUE SYSTEM.****Problem definition:**

Land records in India are managed and maintained by the Indian Revenue System (IRS). Accelerate the process of land registration in India and reduce fraud related to ownership, existence, exchange, and transactions. Developed blockchain based secure sharable land records repository for Indian Revenue System.

Objectives:

1. To increase efficiency and transparency in the land records management system in India by eliminating paper-based records, which are prone to corruption, loss, and tampering.
2. To reduce the risk of fraud in land transactions by ensuring that the repository is accessible only to authorized parties, including government officials, landowners, and buyers.
3. To automate the land registration process using smart contracts, which will reduce the time taken to complete a transaction.
4. To improve the overall integrity and reliability of the land records management system by implementing a tamper-proof and secure digital repository.

Proposed Plan of Work:

Week	Dates	Phase	Activity	Status
01	20 Feb - 27 Feb 2023	Allocation	Project Topic Allocation	Completed
02	28 Feb - 2 Mar 2023	Ideation	Topic Review and Synopsis Submission	Completed
03	03 Mar - 10 Mar 2023	Planning	Planning and Requirement gatherings	
			Learning basic of Blockchain and NodeJS	
05	11 Mar - 18 Mar 2023	Development	Work on Frontend	
06	19 Mar - 25 Mar 2023		Work on Backend	
07	26 Mar - 11 April 2023		Integration of Blockchain API	
08	12 April - 24 April 2023		Creation of Solidity Code and Deploy on Polygon	
09	25 April - 2 May 2023	Testing	Testing and Debugging of Application	
10		Report	Report Writing	

Methodology:

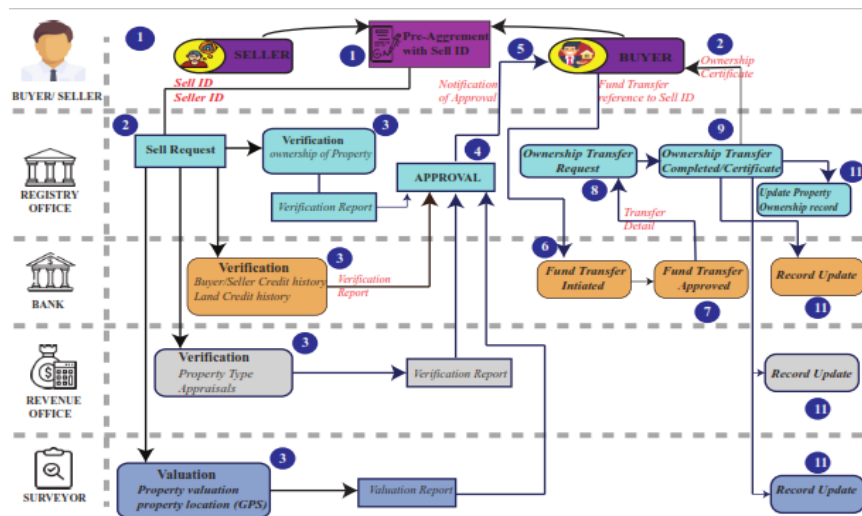


Figure 1: Process Flow for Land Registration using Blockchain

The overall process flow for the proposed system is depicted in Figure 1. It describes the following steps:

Step 1: Pre-agreement - The seller and buyer sign a pre-agreement title contract that contains information such as the seller and buyer IDs, sell ID, amount of transfer, and payment status.

Step 2: Sell request - The pre-agreement title contract is sent to the registry office for a sell request. The system puts a lock on the specific land title to prevent double spending until the approval or disapproval is received from the registry office.

Step 3: Verification - The registry office sends ownership and dues verification and validation requests to the bank, revenue department, surveyor, and registry office. The surveyor provides validation and a report of the property geometry. The bank provides verification and a report of the credit history of the buyer, seller, and property. The revenue department provides verification and a report of the type of property and appraisals. The registry office notifies all departments and sends the blockchain hash to each department.

Step 4: Approval - The registry office receives information from all departments and verifies the data.

Step 5: Notification - After receiving positive verification reports, the registry office notifies the buyer that ownership verification has been verified and asks them to sign the agreement digitally. Otherwise, the request is disapproved.

Step 6: Initiate fund transfer - The system tracks the amount listed in the pre-agreement to be transferred to the bank by the buyer.

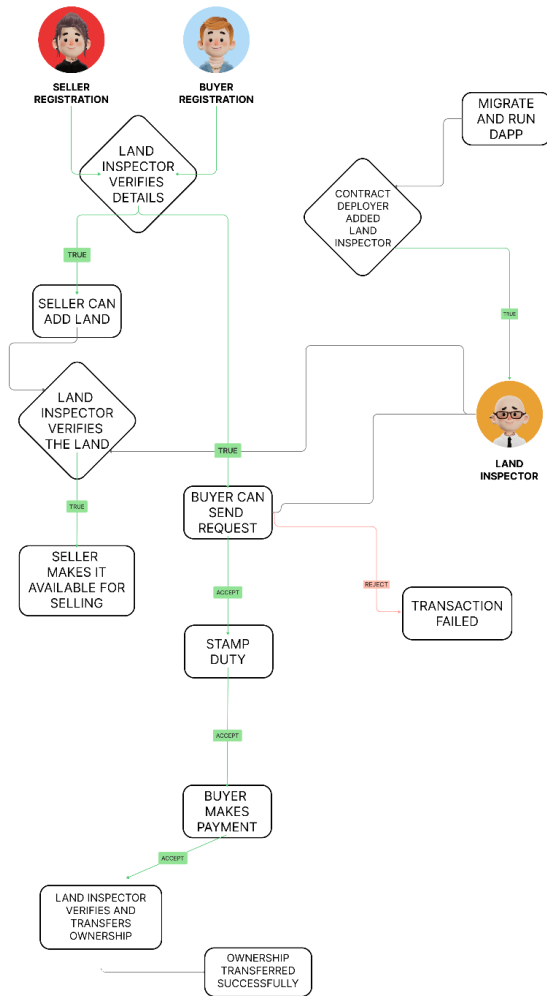
Step 7: Approve fund transfer - The bank checks the fund transfer with reference to the pre-agreement title contract and approves it, marking the payment as received on the pre-agreement title contract.

Step 8: Transfer detail - The bank sends the transfer details to the registry office.

Step 9: Ownership transfer - The registry office approves the ownership transfer request and notifies the seller and buyer about the land title transfer. The recording office in the registry office changes the ownership records.

Step 10: Ownership certificate - After transfer, the registry office generates an electronic title deed with blockchain hash and QR code to the buyer, providing them with an ownership certificate.

Step 11: Record update - The ownership transfer certificate is updated with the blockchain hash to all departments in the land registry system.



Technology:

- NextJS
- Polygon Technology
- IPFS
- Metamask
- NodeJS
- Remix
- Emotion CSS

Functional Specifications (Deliverables):

- A functional model for a sharable land records repository that can determine land ownership, resolve disputes, and collect revenue for the Indian Revenue System.
- A web-based platform that integrates blockchain technology to secure land ownership records for the Indian Revenue System, offering transparency, immutability, and security.
- A dataset of verified land records that are accurate and up-to-date, enabling efficient land transactions and minimizing the risk of fraud.
- A research paper that highlights the benefits of the developed blockchain-based solution and presents the project's methodology, results, and conclusions, which can be published in a conference or journal.

Roll No.	Name	Signature	Project Guide
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10	Stuti Agrawal		
15	Sania Ahmed		
29	Ayush Shete		

Project Scope:

Accelerating the process of land registration as well as reducing fraud. Depending on its purpose, it may be used to prove ownership, existence, exchange, or transaction of an item. It allows for Transparency in Smart Contracts as well as allowing for the tracing of ownership records back to their inception by virtue of Smart Contracts.

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References:

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