

## ASSETS CERTIFICATION VALIDATION USING BLOCKCHAIN

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***ABSTRACT:*** *Previously, several land registrations were done using falsified papers with the assistance of brokers and a complete lack of record-keeping, where shadowing is practically impossible. Illegal land possession is one of India's primary concerns, with illegal land squatters inducing fraudulent paperwork to enthrall land. Legal owners are suffering as a result of this. Land registration may be done via digitalization, which saves time, however there are still several issues related with shaky land titles. Using blockchain technology, we are attempting to decry fraudulent papers connected to land registry and other profit departments in this design. Blockchain enables the tracking of property transfers in multiple hands. To detect phoney documents, we first dissect the specifics of the property. It is critical to understand which papers must be considered. In addition, three parties are considered: purchasers, merchandisers, and land inspectors. The blockchain is an incorruptible digital record of profitable transactions that can be configured to record almost anything of value. Blockchain methods keep data clean on all of the network's peers. on the suggested blockchain system, we make instrument substantiation easier and more secure so that nothing can tamper with the instrument once it's put on the blockchain. Additionally, the meaning instrument can be vindicated by comparing the hash value to the one stored on the blockchain.*

***Key Words:*** *Blockchain, Document Verification, Validation, Hash value, Assets certificate*

## INTRODUCTION

Asset certification refers to the methods used to document ownership or other property rights in order to provide title insurance, expedite commercial transactions, and prevent illegal conduct. Following asset registration, the government issues the property owner with a title and a title plan outlining the property's boundaries. Asset certificates keep track of property rights and provide confirmation of ownership of certain titles. The primary purpose of the system is to give title

certainty. There are significant concerns with the present centralised asset registration system. Once the sale is completed, a fraudster posing as the property owner would collect the money and depart. In a lot of cases, the vendors and purchasers were unaware of the deception until it was uncovered as part of a spot check operation by the asset register. Historically, asset registries focused on paper records that may be lost, destroyed, modified, or otherwise contaminated. To address this issue, a technology known as Blockchain enters our lives as a rescuer. So, why should you utilise Blockchain? Because the data on a Blockchain cannot be modified under normal circumstances. Because of its ability to immutably store and transmit information, blockchain technology will help to eliminate these dangers, ultimately providing us with accurate and dependable records of documented asset titles. The asset certificate will not be lost or damaged throughout the validation process because everything is kept digitally, thus the asset owner does not need to be concerned. The proposed strategy closes off the weaknesses in our existing system while simultaneously providing a viable, tangible solution.

### **LITERATURE REVIEW**

- [1] "An Overview of Blockchain Technology," which provides detailed information on Blockchain. It defined several concepts related to this technology, including the most significant notion known as a smart contract. IJERT stands for International Journal of Engineering Research and Technology. The hash of the data is recorded in the preceding block of the Blockchain, which forms a lengthy chain of nodes. If data is modified, its hash will change and will no longer match the hash value saved in the preceding block, indicating data tampering.
- [2] Aryan Familrouhani, Devin Cao, Tevisophea Heng, and Wenlin Han "Security Applications and Challenges in Blockchain" Blockchain technology is widely utilised now and will be used in the future, but it is still a largely misunderstood notion. Many apps use Blockchain to increase security and privacy. However, there are inherent disadvantages as well as growing concerns. In this work, we investigate common security applications in Blockchain, their primary issues, and other Blockchain concerns, allowing future research to be undertaken more effectively.
- [3] Dr. Murat Kantarcioglu, Arvind Ramachandran "Using Blockchain and smart contracts for secure data provenance management" They use blockchain as a platform in their effort to offer trustworthy data provenance gathering, verification, and administration. To maintain immutable

data trails, the created system employs smart contracts and the open provenance model (OPM). The study demonstrates that the proposed system can effectively and securely acquire and validate provenance data, as well as prevent malicious changes to the captured data, provided that the majority of participants are honest.

[4] Samit Shivadekar, Stephen Raj Abraham, Sheikh Khalid, “Document Validation and Verification System”, 2016. In this paper, the authors briefly described that how to validate and verify a document.

[5] Wu, Kaidong "An Empirical Investigation of Block chain Based Decentralised Applications." [9] This article offers a thorough empirical analysis based on a large dataset of 734 dapps gathered from three famous open dapp markets, namely, ethereum, state of the dapp, and DAppRadar. We examine the popularity of dapps and summarise the patterns of smart contract organisation in dapps. We make some conclusions based on our findings to assist dapp developers and consumers better understand and deploy dapps.

### **EXISTING SYSTEM**

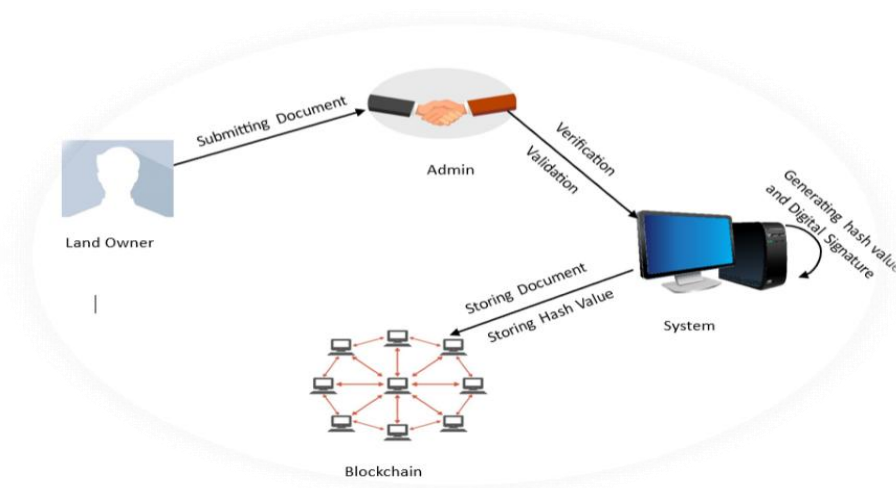
In the past, the majority of land documents in India were identified by a village map boundaries or by project paperwork that contained the occupant's information. This strategy has led to a number of problems, including illegal land possession, land disputes, and property frauds, among others. Possession of illegally acquired land was one of the main issues that were encountered. Illegal land possession is a type of ownership that is simply obtained with the occurrence of illegal occupancy by producing fictitious documents, statements, or through bad influence, and by enforcing on the legitimate owners of the land property. Illegal land possession is a type of ownership that is legally authorised, and imposed due to illegal occupation. It takes too long to validate since the certificate is manually verified and kept in a centralised location. The certificates issued to any private sector are not secure. But the information could be altered, removed, or updated. It is simple to compromise certificates and create copies of them.

### **PROPOSED SYSTEM**

The proposed system makes use of block chain technology, which is utilised to protect all types of

data so that it can never be altered or changed due to its robust, decentralised, and high security properties. We have created a system application with this that fixes all of the problems with the current system. The sha-256 algorithm, which is imported from the hashlib library, was used to generate hash values for the proposed system's admin or user interface, while datetime, another library, was used to store hash values onto the blockchain. Next, in our project, the user or owner only needs to provide a soft copy of the assets certificate and the pertinent information about themselves to admin. Rest confident that admin will then handle the following tasks, such as verification and validation, and at the conclusion, the owner will receive an acknowledgement. Our approach reduces instances of duplicate ownership fraud, and once the owner's certificate and data are entered into the blockchain, they cannot be modified. If a third party ever claims ownership fraudulently, his ownership may be established simply by looking up his certificate in this project.

### SYSTEM ARCHITECTURE



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The diagram above illustrates the system architecture. The first step is for the admin to access the portal, then take the soft copy of the document and the necessary details of the land owner, and then verify whether the certificate already exists or not, and then go for validation by entering the name, survey number, and phone number, and attaching the soft copy of the certificate. The system then adds a digital signature and a hash value to the certificate before storing it on the blockchain. The blockchain merely keeps the hash value and digital signature (transaction id), but the soft copy of the document is kept in the mongo database, which is used to store documents.

## MODULES

**Verification:** In this module, the verifier or administrator will obtain a certificate from the owner and upload it to the programme, which will then transform the certificate into a digital signature and deposit the hash value and signature in the blockchain.

**Validation:** Once the certificates have been posted to the blockchain, validation is performed by decrypting the digital signature and file. And double-check for existence.

**Digital signature:** In this module, a digital signature is applied to the hash value that is posted to the blockchain. It is helpful in recognising the certificate. It enables authentication.

**Hashing:** This module provides hash values for files submitted to the blockchain. The hash value is created using the SHA-256 algorithm.

## IMPLEMENTATION

Implementation of each role of the component of the system. The implementation is done in

**Jupyter notebook.** 1. Installing the libraries:

To get start “Hashlib, Blockchain, Tkinter” libraries” is to be installed. As we are using these libraries to run our application. Hashlib—pip install Hashlib, Blockchain—pip install Blockchain, Tkinter—pip install tkinter, Datetime—pip install datetime

2. Writing code in kernel:

Since we are using Jupyter notebook, we must open a new kernel and type import the installed libraries before we can write code.

## SHA-256

SHA-256, or Secure Hash technique 256, is a hashing technique that converts text of any length into a 256-bit (32-byte) string. The National Security Agency (NSA) of the United States created SHA-256, which was first released in 2001. SHA-256 is a well-known hashing algorithm that was first used in Bitcoin encryption when the network launched in 2009. SHA-256 is currently utilised by a wide range of blockchain projects, including a number of currencies derived from forks of the original Bitcoin source code. The SHA-256 algorithm, like other hash functions, accepts any input and returns a fixed-length output (called a hash). The output of a hashing algorithm like SHA256 will always be the same length regardless of whether the input is a single word, a whole sentence, a page from a book, or an entire book. It will be 256 bits, or 32 bytes, represented as 64 alphanumeric characters.

## CONCLUSION

The system application "Assets Certificate Validation Using Blockchain" is designed in such a manner that a landowner may securely safeguard his assets certificate. It is a blockchain-based programme that secures certificates. Blockchain is the primary technology in this project. Because of its high security characteristic, blockchain is a technology used to offer protection to data in all aspects, and data once placed into it cannot be updated, tampered with, or hacked. In this project, we designed a user-friendly environment in which the landowner only needs to provide a soft copy of the certificate and his contact information to admin. The administrator is essential to this project since he must complete each and every task. The project's duties include verification, validation, hashing, and producing digital signatures. And if the owner wants to verify the facts, he only needs to send the hash value to admin, who validates and checks to see whether any changes have occurred. This is accomplished by comparing the existing hash value to the provided hash value. The programme may be expanded and used by numerous organisations to provide security more quickly and easily. It offers a distinct method of security.

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