A STUDY ON BLCOK CHAIN TECHNOLOGY APPLIED ON LAND REGISTRATION

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ABSTRACT

In our nation, land registration departments are often held responsible for the claimed mishandling and falsification of land data. A given plot of land is claimed by various individuals or real estate corporations to differing degrees of authority. Because of this consolidation, the data is now much more susceptible to security breaches. Increasing these systems' reliability has been the aim of decentralised system research. Decentralised solutions based on blockchain technology are presently being developed to address the shortcomings of centralised systems. The goal of this project is to develop a proof-of-concept system or framework for future use, utilising significant land record registration models as the foundation.

KEYWORDS

blockchain, framework, peer-to-peer, data block, nodes, transaction.

INTRODUCTION

A chain of records that is constantly expanding is called a blockchain. A block is the fundamental unit of a block chain. A connection exists between these blocks. A cryptographic hash of the contents of the preceding block, transaction information, and a timestamp are all contained in each block.

Generally, a peer-to-peer network that follows a set of rules for node communication and block validation is used to implement blockchain technology. Any block that is added cannot have its content altered without also altering all blockchain blocks that come after it.

Reliable, decentralised, transparent, immutable, and secure Blockchain-based land registration and administration systems are being created using a variety of platforms. Land title facts are stored and transactions entwined with land titles are conducted through the land management and title recording system. Land management and title cataloging systems need to be strong since these are sensitive data that need to be kept accessible at all times, avoided from being falsified, and completed on time. Blockchain has developed into a combination of several

replicas, encompassing mathematics, networking, cryptography, and a distributed consensus method. It is no longer restricted to basic ideas.

Blockchain technology is facing the fork problem. The issue of forks arises when a blockchain splits into two branches; this can happen when the consensus algorithm changes or when there are software modifications. These two problems are related to the blockchain's architecture.

LAND REGISTRATION USING BLOCKCHAIN

Blockchain technology offers security, accountability and records can be examined from beginning to ending. Three terms are commonly used in the land registration process. These are listed in the following order:

(i) Object (land or a spatial unit)

(ii) Right (individuals' rights with regard to land)

(iii) Subject (the person who owns the right attached to the thing)

MODEL OF DATA BLOCK

To understand the entire blockchain-based land registry process, we have utilised the input and output. In this case, the transaction has the update and delete attributes, and the block contains the transaction and the ID of these transactions. Any block or transaction that is not verified will be removed, allowing others to be verified and updating the corresponding transactions. Name, address, land acreage, and land title number of the landowner will all be listed in the registry. Similarly, the address of the previous block and the block's timestamp will also be contained in the block header. Transactions are stored in the block, and the block header includes the block's information.

VALIDATING TRANSACTIONS AND ADDING BLOCKS

A transaction is documented when a user buys the plot of land following the procedure' successful completion. The transaction is finished and someone else acquires ownership of that plot of land; thus, a new block will be added to the blockchain.

FINDINGS AND DISCUSSIONS

Determining the effects of implementing a blockchain-based land registry system. From paper work to the blockchain-based system, there is widespread innovation and advancement for the people.

Faith: Because our system is built on blockchain technology, trust is ensured. All of the information regarding ownership and the ownership procedure would be available here.

Transparency: According to the framework, every step of the transaction process must be done in full transparency. Since there is no unapproved access to the system, there is no chance of corruption or forgery. The framework's steps are all well specified. Anybody can monitor the alterations that have taken place. In this system. The transaction is verified by each block involved in the process. A blockchain-based system also eliminates the possibility of data loss or corruption since it employs a time-stamped mechanism that lets users track any modifications to the data. We may therefore draw the conclusion that our suggested method for information storage is significantly better than the accepted procedures in use today.

Limitations: Our research indicates that "change resistance" will be the most difficult barrier to the adoption of blockchain-based systems because the majority of these people are not familiar with computers and will find any system with a lengthy learning process hard.

CONCLUSION

The article provides a link to a conceptual framework that describes land registry systems based on blockchain technology. Our proposed framework has benefited from our ability to classify the primary components through the mapping of the scenarios. registry together have the power to completely transform governance. Once the essential elements were determined, we created a framework using basic ideas that have been used in both traditional and modern record keeping systems. Like today, land record storage comes from a centralised source. Since we deployed completely decentralised blockchain-based solutions in our architecture, this centralised storage is therefore susceptible to hacking, forging, or misappropriation.

Combined with a land registry Using a direct approach, we collected original data from all relevant parties, such as government agencies and officers, village officials, and system users in general. We gathered input from government and public entities through semi-structured interviews in order to evaluate our approach.

UPCOMING PROJECTS

For now, we are using a private blockchain-based conceptual framework, but this process can be expanded soon to enable the general public to interact with the system directly and retrieve asset information. Moreover, our sole objective in operating has been to create a conceptual framework. Nevertheless, in the future, a software system could be developed using these frameworks. It can certainly offer insight into the real system as a framework.

REFERENCES

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