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Automation of Real Estate Registration Using Block Chain Technology

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Abstract: ***Online real estate Registration is a project which provides a friendly format to register land properties. Users can search and browse for property in this application. This application also allows users to see land details on online. This application mainly concentrates on maintaining and managing the details of the property. This application deals with lands details. Now-a-days all applications which require huge security are migrating their application to Block chain as Block chain inbuilt for security data. All existing techniques were not having any facility to check whether data store at decentralized (same data will be saved at multiple nodes and if one node hack or down then data will be gather from other working node) server is intact or change. To check data is intact we can use Block chain technology to maintain land registration details as this technology maintain tree to store each transaction (any data storage will be consider as transaction) and while storing new data then Block chain verify all transaction hash code and if data is not alter or hack then same hash code will be generated and verification will be successful and new block will be added and if data is changed then different hash code will be generate and verification will be failed which indicate node is hack.***

Keywords: Block chain technology, hash code, SHA algorithm, Land Registration.

I. INTRODUCTION

Online real estate Registration is performed according to country-specific procedures. However, there are some features which are common for all post-socialist countries. It may be possible to implement and transfer into the Polish system the good management practice which has been developed by leading countries. On the other hand, Poles may have a chance to become acquainted with the rules governing public real estate management in other countries and to identify some practices which ought to be avoided. There is no need to implement faithfully those procedures which in other countries have been recognized as generally inadequate or inefficient and have been replaced by new solutions. This pertains to some principal components of the real estate management system. The aim of the paper has been to present Online real estate Registration in India in the context of good governance, and to suggest some indicators for assessing the procedures in these systems in terms of their efficiency.

A. Scope Of The Project Includes The Following Things

1) Registering to the land authority portal
2) Giving the details of land
3) Checking and verification of land details by the admin
4) Admin can make a communication way between the buyer and seller
5) Successful documents transfer on the completion of registration process.

Registration Process quite take long time, sometimes months also. When we have a system which can register for us by taking little time is quite interesting. This is our main motive force behind our project.

B. Model Diagram of the Project

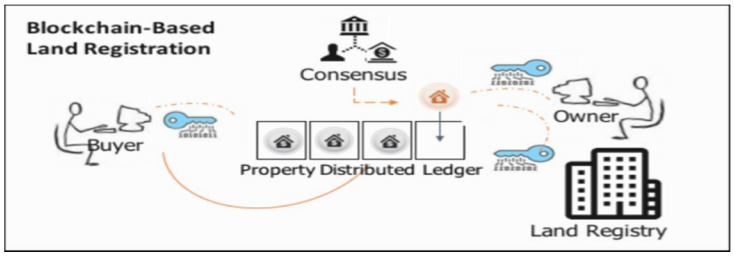

Fig:1:Model Diagram

C. When it Comes to Algorithms point of view we are using two Algorithms

Namely proof of work algorithm and SHA algorithm PoW algorithm used in the blockchain helps in decentralizing the events. What the poof of work algorithm does is that when a new transaction occurs, it will first broadcast the transaction to every node in the network. Each node will calculate the PoW. One who found the PoW announces to other nodes in the network and will add that transaction to the block. Difficulty factor is a parameter in PoW which helps to reduce the time for the creation of a new block, so that attacker cannot create or duplicate a block within this time. Always the longest growing chain is taken as the genuine chain.

II. RELATED STUDY

1) Block chain government - a next form of infrastructure for the twenty-first century

Today, more than 100 block chain projects created to transform government systems are being conducted in more than 30 countries. What leads countries rapidly initiate block chain projects? I argue that it is because block chain is a technology directly related to social organization; Unlike other technologies, a consensus mechanism forms the core of block chain. Traditionally, consensus is not the domain of machines but rather humankind. However, block chain operates through a consensus algorithm with human intervention; once that consensus is made, it cannot be modified or forged. Through utilization of Lawrence Lessig's proposition that "Code is law," I suggest that block chain creates "absolute law" that cannot be violated. This characteristic of block chain makes it possible to implement social technology that can replace existing social apparatuses including bureaucracy. In addition, there are three close similarities between block chain and bureaucracy. First, both of them are defined by the rules and execute predetermined rules. Second, both of them work as information processing machines for society. Third, both of them work as trust machines for society. Therefore, I posit that it is possible and moreover unavoidable to replace bureaucracy with block chain systems. In conclusion, I suggest five principles that should be adhered to when we replace bureaucracy with the block chain system: 1) introducing Block chain Statute law; 2) transparent disclosure of data and source code; 3) implementing autonomous executing administration; 4) building a governance system based on direct democracy and 5) making Distributed Autonomous Government(DAG).

2) Block chain technology, bitcoin, and Ethereum

The block chain technology is a relatively new approach in the field of information technologies. As one of its first implementations, bitcoin as a cryptocurrency has gained a lot of attention. Together with Ethereum, blockchain implementation with focus on smart contracts, they represent the very core of modern cryptocurrency development. This paper is meant to give a brief introduction to these topics.

3) Secure high-rate Transaction Processing in Bitcoin

Bitcoin is a disruptive new crypto-currency based on a decentralized open-source protocol which has been gradually gaining momentum. Perhaps the most important question that will affect Bitcoin's success, is whether or not it will be able to scale to support the high volume of transactions required from a global currency system. We investigate the implications of having a higher transaction throughput on Bitcoin's security against double-spend attacks. We show that at high throughput, substantially weaker attackers are able to reverse payments they have made, even well after they were considered accepted by recipients. We address this security concern through the GHOST rule, a modification to the way Bitcoin nodes construct and re-organize the block chain, Bitcoin's core distributed data-structure. GHOST has been adopted and a variant of it has been implemented as part of the Ethereum project, a second generation distributed applications platform.

4) Bitcoin: A Peer-to-Peer Electronic Cash System

A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

5) Bitcoin and Beyond: A Technical Survey on Decentralized Digital Currencies

Besides attracting a billion-dollar economy, Bitcoin revolutionized the field of digital currencies and influenced many adjacent areas. This also induced significant scientific interest. In this survey, we unroll and structure the many fold results and research directions. We start by introducing the Bitcoin protocol and its building blocks. From there we continue to explore the design space by discussing existing contributions and results. In the process, we deduce the fundamental structures and insights at the core of the Bitcoin protocol and its applications. As we show and discuss, many key ideas are likewise applicable in various other fields, so that their impact reaches far beyond Bitcoin itself.

Each block in the block chain has a unique identification number and no manual correction or any type data tampering within the block is possible. Once a transaction is completed, it is added to the chain of blocks and if two owners have the same property it is managed with the block chain in a good and secure manner. Block chain based land registration has the potential to increase liquidity, mitigate risk, and reduce costs, all of which would make property investment an even more attractive prospect. Currently, registration officers and other third party people who get involved in a land transaction deal often tend to make monetary benefits from the clients who are planning to sell the property. The offline method of initiating a land transaction often leads to issues like double spending. Block chain helps mitigate the interference from third parties by offering a secure platform by means of transaction timestamp, stored within the block.

A. Existing System

Now-a-days all applications which require huge security are migrating their application to Block chain as Block chain inbuilt security for data. All existing techniques were not having any facility to check whether data store at decentralized (same data will be saved at multiple nodes and if one node hack or down then data will be gather from other working node) server is intact or change.

As there are many chances for the security breaches in the existing system, a new system with higher capability for the security is needed.

B. Disadvantages Of The Existing System

1) If one node on is hacked the entire data can be easily retrieved
2) Data can be easily modified
3) Multiple records are stored for the same data i.e., data redundancy

C. Problem Statement

Generally, land registration process takes more time in the registration process and verification process. Sometimes there may be also chances of registering to the illegal documents. There should be supposed to undergo different verification processes which will take more time and it is not that much accurate compared to the digital processes. There are many chances of security breaches in traditional way of registration process. We are considering this fact as a problem statement for our project.

D. Proposed System

Considering to this problem statement we have gone through different case studies and surveys, which concluded that block chain is the best process for maintaining records in a secure fashion. Block Chain is an emerging technology in the fields of crypto currency and many areas where secure matters a lot.

By comparing the hash values, we can easily identify the records which are original. In this way we can achieve security using block chain. For the purpose of producing the hash values we are using the SHA (Secure Hash Algorithm) Algorithm, which is likely the best algorithm for producing hash values. There is no need of any brokerage for selling and buying the properties. Users can simply log onto the portal can use the services.

To check data is intact we can use Block chain technology to maintain land registration details as this technology maintain tree to store each transaction (any data storage will be consider as transaction) and while storing new data then Block chain verify all transaction hash code and if data is not alter or hack then same hash code will be generated and verification will be successful and new block will be added and if data is changed then different hash code will be generate and verification will be failed which indicate node is hack.

If we manage land registration details in Block chain, then users can verify data from any other working node upon failure of other node. Block chain also support tamper or alter proof storage as the data store in Block chain will get verify upon adding new transaction and if any data block alters then verification will be failed and user can understand his data is altering.

E. Advantages Of Proposed System

1) Block chain maintain each transaction/storage in blocks

2) All blocks may store inside MERKLE TREE

3) Before adding new block, Block chain will verify all blocks hash code and each block may have link to previous block and current block.

4) If any block data alter then its hash code will change and verification will be failed

III. THE ARCHITECTURE OF THE PROJECT

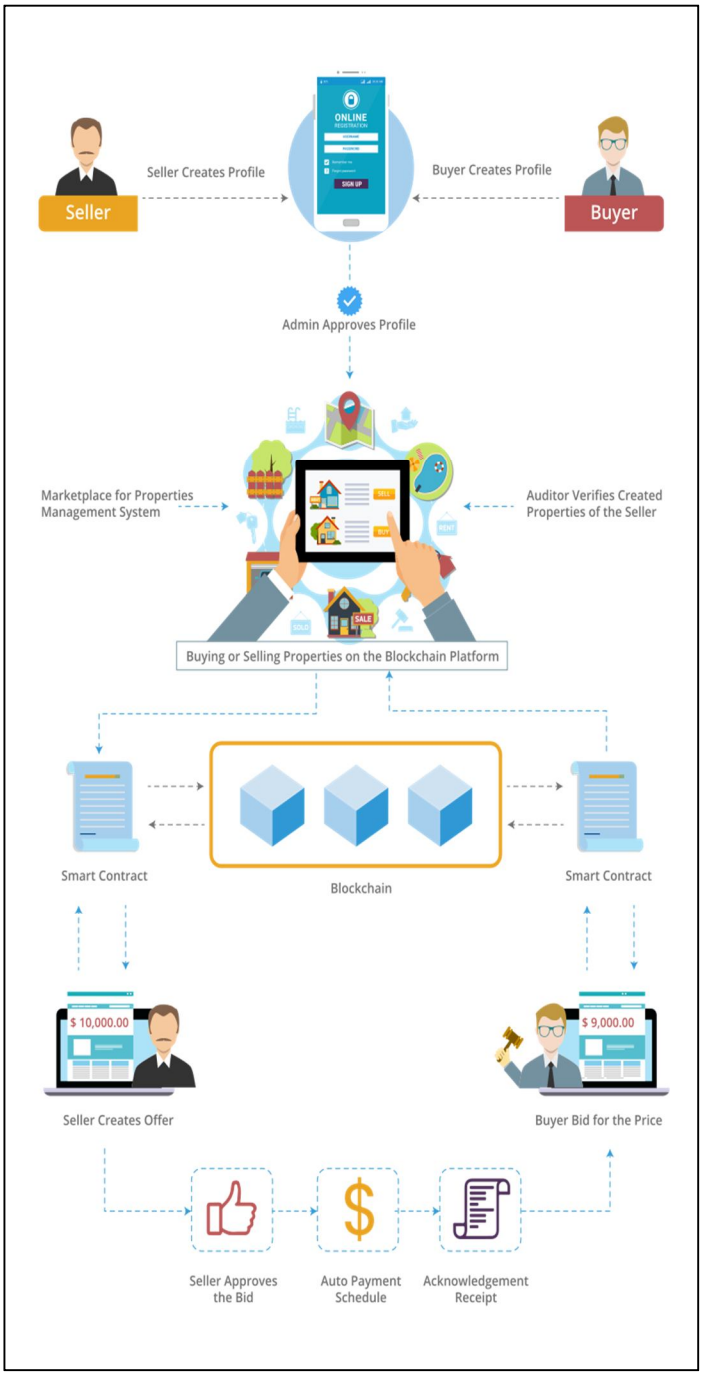

Fig:2: System architecture Diagram

A. System Architecture Diagram Contains Three Things

Buyer, seller and an admin. Buyer, seller are the users which are using the platform for the purpose of registration. Admin needs to approve the request form the buyer to seller, and also the uploaded documents need to check by the admin, in case of any fake documents the admin will cancel the registration process. Buyer and seller both can have a conversion for settlement of land if their documents are valid, admin will give a notification to both of them about their meeting. After their conversion they both can contact the admin for the process of registration. Admin adds all the new records in a tree fashion encrypted with the hash code facility, which shows the working of block chain mechanism.

B. Implementation

Land registration project is implemented by using the following modules:

To implement this project, we have designed following modules

Admin module: admin user can login to application by using username and password after login admin can add new land registration details and then can search land details. Admin will issue registration number to each user land. Only admin can have all the accesses and have many responsibilities till transfer of documents. Admin should check each and every document submitted and should know any fault is occurring, in case the registration process should be cancelled. Data should be uploaded and deleted by admin, not only this each and every process should be in control of admin.

User module: User can search registered plot details by entering plot registering number. A user can be a buyer or a seller. User need to register to the platform by assigning any govt ID proofs, then an admin will issue a unique user id. Users can search for the land details and can contact the admin

C. Test cases and Scenarios

S.no	Input	Output	Result
TEST CASE1(Test case for Login form)	Should Validate the user and check his existence in database	Validate the user and checking the user against the database	SUCCESS
TEST CASE2(Test case for User Registration form)	Should check if all the fields are filled by the user and saving the user to database.	Checking whether all the fields are field by user or not through validations and saving user.	SUCCESS
TEST CASE3(Test case for Change Password)	Should check if old password and new password fields are filled by the user and saving the user to database.	Checking whether all the fields are field by user or not through validations and saving user.	SUCCESS
TEST CASE4(Test case for Forget Password)	A Validation Should Be As Below “Please Enter Valid Username & Password”	A Validation Has Been Populated as Expected	SUCCESS

IV. CONCLUSION & FUTURE SCOPE

Our system provides the facilities of registration and search land registration details in a user-friendly format. The Admin can upload property registration details. Our real estate system allows users to browse the property according to this requirement. Land details are maintained in a secured fashion, not only this our system doesn’t give the access rights to any other person other than the admin. The entire Using system will be installed on the admin’s personal computer. Even though the login details of admin will not be known to anyone. We conclude that our system offers the best security and authenticity to the land and plot or any other real estate registrations. Our land registration system is currently using the data which was sent by the buyer and seller. In future we need to gather more land details and need to maintain the records in a data base. Which can also be used as a research purposes.

As the technology changes we need to update the system. Encryption and decryption techniques can be used for authenticity. We can update the system to use in a mobile edition.

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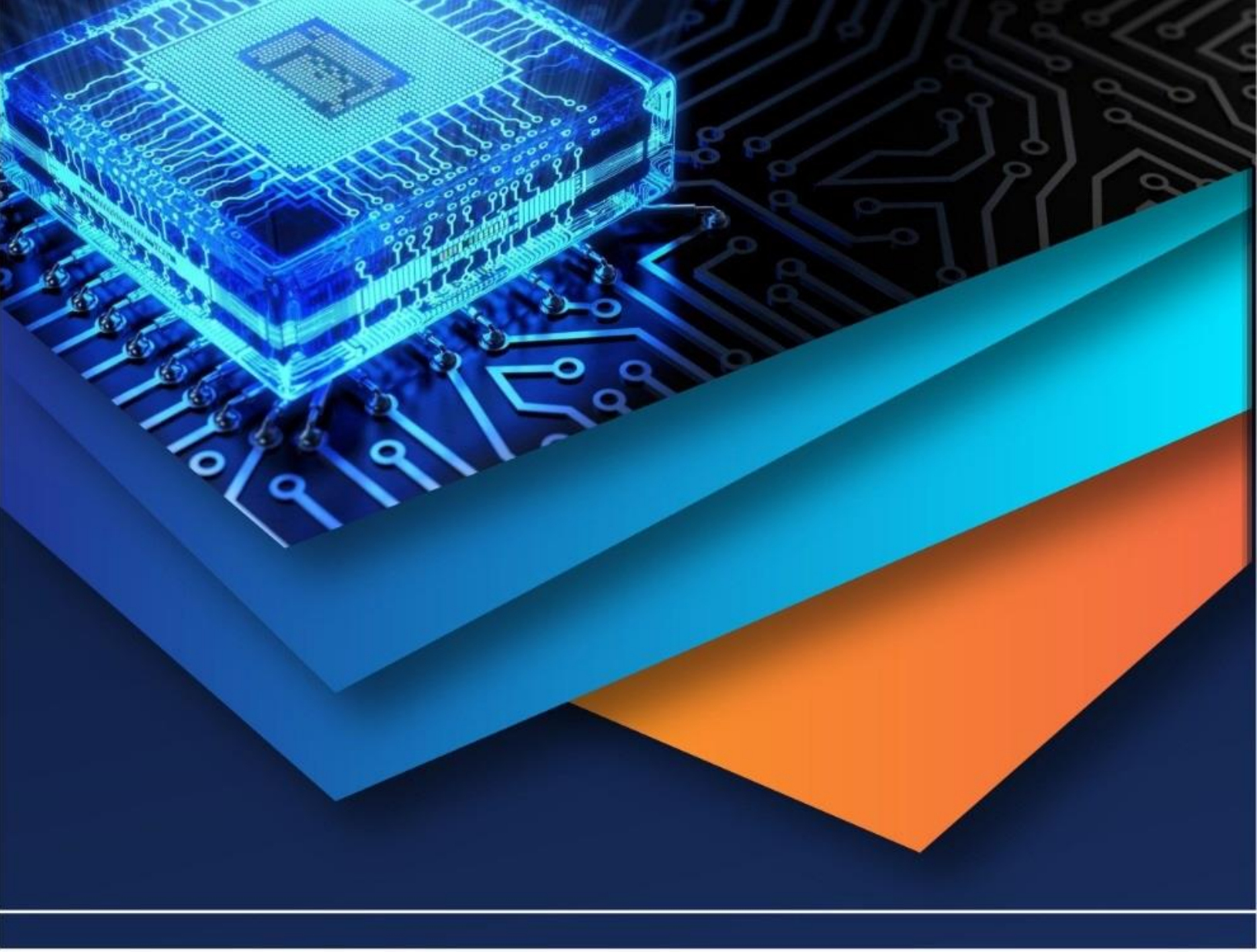

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