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LAND REGISTRY SYSTEM USING BLOCKCHAIN

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Abstract - *The land written record system is one among the important department in any governance system that stores the records of land possession. There are various problems and loopholes within the existing system that create to corruption and disputes. this needs a big chunk of valuable government resources from judiciary and enforcement agencies in subsidence these problems. Blockchain technology has the potential to counter these loopholes and type out the problems connected with land written record system like tempering of records, mercantilism of constant piece of land to quite one vendee. during this project, a secure and reliable framework for land written record system victimization Blockchain has been projected. The projected framework uses the conception of sensible contract at varied stages of the land written record and provides associate rule for pre-agreement. Blockchain is associate electronic ledger of digital records, events, or transactions that are hashed cryptographically, and controlled through a distributed or shared network of participants employing a cluster agreement protocol. This analysis aims at coming up with a model for secure and steady land administration and title registration system supported blockchain technology, which can facilitate in eradicating the weaknesses showed in current land registration and administration method. Land administration and registration systems with blockchain technology are enforced in African country, Estonia, Georgia and Central American nation. though they're still in their initial stages, their challenges and strengths that have already been knowledgeable about. The challenges altogether countries the dearth of awareness of blockchain technology to the society and difficulties within the registration of titles that are still in conflicts*

***Key Words*: Blockchain, Transaction, Verification, Smart Contract.**

1. INTRODUCTION

Land register could be a system that records the main points of possession claim by many government bodies, means that it stores the records of land possession. However, the area unit numerous problems and loopholes within the existing system that bring about to corruption and disputes. For determination these problems we have a tendency to area unit mistreatment Blockchain technology.

Blockchain is employed to counter these loopholes and find out the problems connected with land register system like tempering of records & commerce of identical piece of land to quite one vendee. Land register system refers to the system that records the main points of possession claim by many government bodies. The hold on record will be used because the proof on claim and avoid any wanting fraud and sleek transition whenever needed. The recent land record ends up in hindrances within the verification of land title and should result or cause frauds. in keeping with the survey conducted by the planet bank around seventy you look after the population don't own any land title Land claim is a necessary prospect for social and economic resilience of national. The secure and up-to-date land record will facilitate governments in aggregation, service delivery and different aspects of governance. the planet bank is actively operating during this direction and providing support for rising land registration system in many countries and funding conferences yet as land registration modernization comes. numerous government agencies area unit exploring and dealing within the direction of a secure, reliable and tamperproof digital system for the land record. There are unit of several stakeholders concerned within the method that creates the system advanced and wishes numerous checks associate degreed balances to counter totally different variety of threats and build on surroundings of mutual trust The blockchain-based answer is acceptable within the applications wherever multiple entities area unit collaborating and transacting however having very little confidence among one another. The blockchain is useful wherever some data is shared on multiple system or platforms

2. Literature Survey

BLOCKCHAIN-BASED LAND REGISTRY: PANACEA, ILLUSION OR SOMETHING IN BETWEEN?

Looking through Blockchain technology, many of the principles of Good Governance in Land Administration could or shall be met. The elements of transparency and efficiency as well as the history of transactions (chain of title) is present. And the unique identifiers (parcel numbers, identification numbers of (legal and natural) persons) can be stored. When transaction rules will be implemented, the validity of transactions can be checked. In current well-functioning Land Registry systems this is mostly executed by hand, by scrutinizing the deed.

Blockchain-based framework for secure and reliable land registry system

This paper reviewed the present procedures and problems within the ancient land written account system. the normal system is vulnerable to varied kinds of meddling at each stage and indirectly affects the cost accounting additionally within the kind of paper resources, storage demand of huge record keeping, security problems with these records. The planned system is incredibly economical, because it needs terribly fewer human resources and additional reliable. This paper additionally planned associate degree formula for a pre-agreement contract between client and merchandiser

Design of Land Administration and Title Registration Model supported Blockchain Technology

This study recommends the following; initial, planned model should be enforced to the ILMIS infrastructure, as a result of this can increase security whereby land title records are prevented from each internal and external attacks. This technology has diode to digital currency and remains entering into alternative socio-economic sectors like agriculture, health, electricity, etc. while not a correct regulation, folks will use this technology negatively.

3. PROPOSED METHODOLOGY AND DISCUSSION

3.1 System Overview

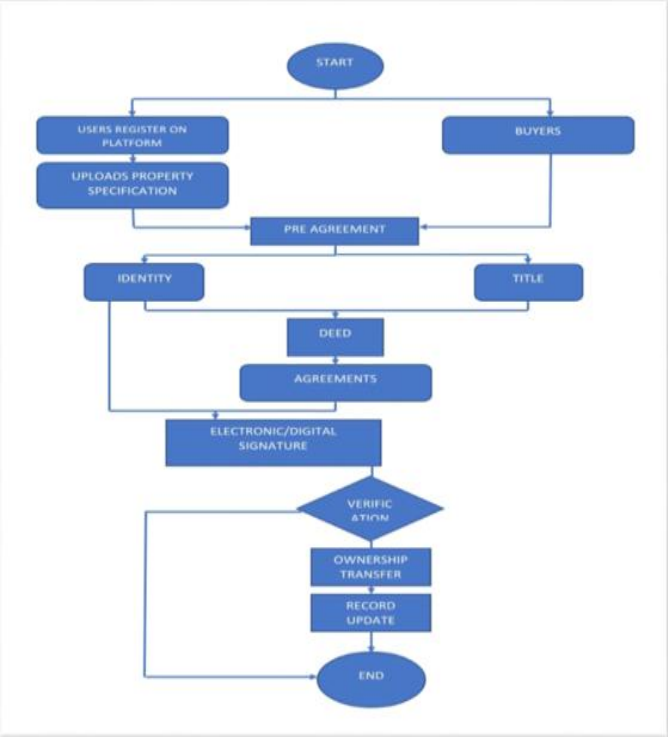

Fig-1 Proposed Methodology

Firstly, the user can register itself and transfer the specifications then pre agreement algorithmic rule is executed. In Pre-agreement the vendor and client sign a pre-agreement title contract containing Sign, Seller ID, Buyer ID, sell ID, quantity of transfer, payment standing. Then, the pre-agreement title contract is then sent for sell request. For making the trust within the system for a land written account we can use Blockchain and solve the double outlay drawback, the system can place a LOCK on the precise land title and can't enable the other group action on same Sell ID till the Approval or the Disapproval are received. Further, associate possession and dues verification and validation are done the validation and also the report of property location and property ID are verified. Also, the history of client and marketer is verified Then when verification the possession are transferred and also the records would be updated

In the system there are main 2 blocks as Blockchain network & smart contract engine. The smart contract engine encompasses a storage for storing deed or good contract. it's connected to user module and user interfaces has 2 categorized users that's client UN agency desires to shop for a land and a vendor UN agency desire to sell his land. User details also are kept in good contract Engine, details like name address phone email. The user will sign up exploitation username. Blockchain validates the dealings documents and offers security to the method. The blockchain additionally offers associate interface for public for accessing the knowledge.

Frameworks Used:

Land registry account system using blockchain could be a react js Project. (React could be a free and ASCII text file front-end JavaScript library for building user interfaces or UI parts. the most technologies and tools that square measure associated square measure)

• Mongodb : MongoDB is named a NoSQL information. this implies that pre-defined structure for the incoming knowledge may be outlined and adhered to additionally, if needed totally completely different documents will have different structures. thus, essentially it's a dynamic schema.

• node js: Node JS is a tool largely employed in JavaScript to put in writing Server-Side scripts

In this project we have a tendency to area unit exploitation a pair of main algorithmic program

• Pre Agreement algorithmic program

• AES algorithmic program

The pre agreement algorithmic program that we've got used may be a pre agreement good contract So foremost if the vendor id is null, we are going to take the vendor id, name and sign then we are going to come back the sell id. Else if the client id is null then we are going to take the client id, name and sign and that we can come back the client id. Else we are going to take title id and taxation id in this property id if each, rate of taxation and owner's public key and payment standing are going to be came back. Then if the payment standing or purchaser/seller or title id is null the deed id can take id. The agreement id can have taxation id and deed id and also the pre-agreement contract can have agreement id, buyer's id seller's id and also the hash worth (so on certify that the method isn't tampered) generated. Then we have a tendency to come back pre agreement contract.

AES algorithmic program It contains of a series of joined operations, a number of that involve substitution inputs by specific outputs (substitutions) it involves shuffling bits around (permutations). AES do all its computations on bytes instead of bits. Hence, AES treats the 128 bits of a plaintext block as sixteen bytes. AES may be a crypto graphical algorithmic program want to shield electronic knowledge. it is a regular block cipher which will encipher and decipher info. encoding converts knowledge to associate degree unintelligible kind referred to as cipher text. decoding converts the information back to its original kind referred to as plaintext AES encryption may be an additional mathematically economical and chic crypto graphical algorithmic program, however its main strength rests within the choice for numerous key lengths. AES permits you to settle on a 128-bit, 192-bit or 256-bit key, creating it exponentially stronger than the 56-bit key of DES.AES is safer than RSA in same bit size, AES is symmetrical encoding. AES has ne'er been cracked however and is safe against any brute force attacks contrary to belief and arguments. However, the key size used for encoding should be giant enough that it couldn't be cracked.

4. CONCLUSIONS

The existing system is prone to various types of tampering in every stage and also indirectly affects the costing also in the form of paper resources, storage requirement of vast record keeping, security issues of these records. Blockchain has the potential to counter all the issues. In this project, a framework for secure and reliable land registry system has been proposed that counters the significant issues of tampering, double spending and provide near real-time updating of land records. The system proposed is very economical, because it needs very less human resources and more reliable. We have also proposed an algorithm for a pre-agreement contract between buyer and seller. Currently we are focusing on eliminating intermediaries. But to effectively use the blockchain we could also identify the land by using physical parameters like geolocation, latitude, longitude, etc. This would further refine and enhance the correctness of transactions and no illegal transactions would be processed. Implementing this on a large scale would also be one of the future scope.

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