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Land Registration System Using Innovative Residence

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Abstract

In the traditional Land Registration system rehearsed in India, there exists a middle man(broker) who establishes a contact between the buyer and dealer, for case if an individual wants to buy or vend a property, the broker will produce and assemble all the obligatory physical documents with respects to an agreement as a evidence of property. Brokers will ensure that the land property would be registered by an sanctioned government office where all the attributes are noted down in a tally and later the whole sale and purchase between the two parties takes place. In this script, there are chances of losing or tampering of the docments as anyone with certain powers can pierce or alter the papers fluently which in turn threatens this concrete evidence of land. Therefore, this type of system as compared to our proposed system in which we make use of a smart contract to deal with the means and deals among the actors, is fairly time consuming, less secure and unsynchronized where conditioning including corruption and fraudulence might be associated during the prosecution of the required process. With a blend of examination and analysis regarding the old habituated way and considering that Innovative Residence has an increased translucency and integrity conservation along with the portability factor, we put forward a Innovative Residence grounded land enrollment system which provides a transparent, secured and decentralized system for prosecution of deals between the actors by employing the conception of hyperactive tally. Index Terms Innovative Residence Land, Hyper tally, land enrollment.

Keywords: Registration Of Land, Concrete Evidence Of Land, Fairly Time Consuming, Corruption And Fraudulence, Secured, Land Enrollment

1. INTRODUCTION

In this system, users would register on the portal and can take up the role of a buyer or seller accordingly. The seller needs to upload all requisite details whereas the buyer can then buy the lands on the portal that are verified by the smart contract. Further users can get deeds digitally which will be uploaded as a new block in the chain. In this way this proposed system does not involve any middleman and all transactions are directly dealt between the buyer and the seller. Transactions will be backed up in all legal servers of all the parties involved in a cryptographic format and the audit ability of transactions will be stronger now that they are associated with timestamps.

The Land registration system incorporating Innovative Residence using Innovative Residence provides features like registration of owner and land by uploading mandatory verified documents. After verification of the owner/land using smart contract using smart contract and consensus protocols implemented in the model, land can be put up for sale and then assets will be visible to all the potential buyers. Simultaneously the sale revenue of the land including stamp duty, cost of the land as per the official criteria and registration fees is calculated automatically and the final selling cost of land is generated. After agreement between both the parties, purchase of land gets completed and transactions are recorded and added to the Innovative Residence Thus, this system stores the history of transactions and backup data in blocks which are immutable.Each and every transaction in the public ledger is verified using consensus protocols involving the majority of the participants of the system.As the new data is emerging blocks are created and encrypted using hashing algorithms. Thus, the information entered once cannot be modified without consulting a legal administrator. Innovative Residence allows one to

create a ledger of events, transactions and data, generated through various IT processes with strong cryptographic guarantees, that is distributed and replicated across the network.As the name indicates, Innovative Residence allows a block of data to grow as new blocks are appended to it, with each block containing transaction information stored in a specially designed data storage structure.

It can automate several stages of the land registration process, including verification of ownership, transfer of ownership, and registration of land deeds. This automation can significantly reduce processing times and eliminate manual errors.It enables all parties involved in a land transaction to access the same set of records, which can improve transparency and reduce delays due to disputes. Automating the land registration process can help reduce operational costs and improve efficiency.

This technology can ensure that land records are tamper-proof and immutable, making it difficult for fraudsters to manipulate or falsify records. Blockchain can help reduce the role of intermediaries such as lawyers and government officials in land registration, which can reduce the risk of corruption and manipulation. Blockchain can enable secure and private transactions, with records of ownership changes securely and transparently stored in the blockchain ledger. However, implementing a blockchain-based land registration system would require significant investment in terms of infrastructure, technology, and expertise. Moreover, legal and regulatory challenges, as well as the need for standardization and interoperability, would also need to be addressed before a blockchain-based land registration system can be fully adopted.

2. LITERATURE SURVEY

Survey of Consensus Algorithms by Authors [1] Lina Ge, Jie Wang,,2 and Guifen Zhang1 about the core of blockchain technology, the agreement algorithm directly affects the security, stability, and decentralization of the blockchain and multitudinous other important characteristics. Choosing an applicable agreement algorithm for different scripts is presently a challenge in the perpetration of blockchain operations. is paper classifies the enhancement schemes of evidence of stake(PoS) into three orders PoS- grounded agreement algorithms, PoS- and PoW- grounded agreement algorithms, and PoS- and BFT- grounded agreement algorithms. First, the study introduces the PoS and PoS agreement algorithm variants and also summarizes the core ideas, goods, advantages, and disadvantages of these algorithms. latterly, the performances of the bettered algorithms are compared. Eventually, the main bettered styles are summarized, and the most common network security attacks are bandied. e study lays a foundation for the main enhancement directions of PoS in the future, hoping to give a reference for experimenters to help them elect and design agreement algorithms in different operation scripts while also helping the elaboration of agreement algorithms and the perpetration of blockchain operations.

Xiaohui Zhang, 1 MingyingXue, 2 and Xianghua,Miao,3 about Blockchain in [2], It is characterized by sequestration, traceability, and security features as a new frame of distributed tally technologies. These features make blockchain operations seductive to enhance responsibility in veritably different surrounds. Due to unique design generalities and outstanding performance, blockchain has come a popular exploration content in assiduity and academia in recent times. Every party is anonymous in a permissionless blockchain represented by cryptocurrency operations similar as Bitcoin. In this situation, some special incitement mechanisms are applied to the permissionless blockchain, similar as “booby-trapped” native cryptocurrency to break the trust issues of the permissionless blockchain. In numerous use cases, permissionless blockchain has backups in sale outturn performance, which restricts further operation in the real world. A permissioned blockchain can reach a agreement among a group of realities that don't establish an entire trust relationship. Unlike permissionless blockchains, the actors must be linked in permissioned blockchains. By counting on the traditional crash fault-tolerant agreement protocols, permissioned blockchains can achieve high sale outturn and low quiescence without immolating security. still, how to balance the security and agreement effectiveness is still the issue that needs to be answered urgently in permissioned blockchains. As the core module of blockchain technology, the agreement algorithm plays a vital part in the performance of the blockchain system. therefore, this paper proposes a new agreement algorithm for permissioned blockchain, the Risk Assessment- grounded Consensus(RAC) protocol, combined with the decentralized design conception and the threat- knot assessment medium to address the unbalance issues of performance in speed, scalability, and securityMladenZrinjskiet. Al [3] have been published on the topics of the blockchain (BC) and blockchain technology (BCT). Some papers

put BCT in the context of land registries (LRs), land cadasters (LCs), land registration, land administration (LA) and land management (LM) and its implementation benefits. Some eight years later, from its beginnings in 2014, the question of the future of the proposed concept and whether it has one, has been raised. The Scopus database was analyzed using bibliometric analysis methodology and RStudio software with the Bibliometrics Package and the Shiny package environment. Based on this research, significant interest and growth in the topic was found in both technical and land-governance directions. Different approaches to the topic have been established in the global north and global south. From today's perspective, the future of BCT in both worlds is guaranteed.

Identity Model for Blockchain-Based Land Registry System. AuthorsMohammed Shuaib, Noor Hafizah Hassan, Sahnius Usman, Shadab Alam, Surbhi Bhatia, Deepika Koundal, Arwa Mashat, and Assaye Belay on Land registry system is one of the essential factors of any governance model needed to ascertain the power records uniquely. In their work they are reviews the being literature and provides a detailed literature review conforming of 3 stages grounded on three exploration questions(RQ) that punctuate the step-by-step evaluation and analysis. They named 48 primary papers out of 477 uprooted from different scientific databases grounded on criteria and RQ defined in the exploration system section.) e maturity of these papers concentrates on assessing the identity issues related to the land registry system and reviewing the being identity models to find the stylish possible identity model to resolve the linked identity problems in the land registry.) is paper examines the current land registry model and its failings. It explains the colorful blockchain types and their characteristics.Identity operation is one of similar sins in the blockchain- grounded land registry model that has been assessed in detail. Identity issues of blockchain- grounded models have been further estimated on defined criteria.) e paper ends with a discussion on possible identity models and their relative analysis to ascertain the most suitable identity model to resolve the identity issues of land registry systems.

[5] Author HuaqunGuo says Blockchain is a technology which has desirable features of decentralization, autonomy, integrity, invariability, verification, fault- forbearance, obscurity, auditability and translucency. In this paper, we first carry out a deeper check about Blockchain technology, especially its history, agreement algorithms' quantitative comparisons, details of cryptography in terms of public key cryptography, Zero-Knowledge Attestations and hash functions used in the Blockchain, and the comprehensive list of Blockchain operations. Further, the security on Blockchain itself is a focus in this paper. In particular, we assess the Blockchain security from threat analysis to decide comprehensive Blockchain security threat orders, dissect the real attacks and bugs against Blockchain, and epitomize the lately developed security measures on Blockchain. Eventually, the challenges and exploration trends are presented to achieve further scalable and securer Blockchain systems for the massive deployments.

3. MODULES USED

Impact of demonetization on housing sector

Deep impact of demonetization since its implementation i.e., from 9th November 2016 has been observed on two different segments: newly constructed property and resale property. Demonetization has less shock on the newly constructed property market and more along the resale property market. The important observation is that even though there were less real estate transactions in the last six months, there was not a high drop in the monetary value of the newly constructed property, resale property, and estate. Builders have gone into negotiation with a serious buyer who is eligible for home loans. This has got buyers considerable value for their money and a perfect chance to keep open on property purchased with bargaining. A resale property has faced a direct impact due to demonetization because cash payment took on a vast role in such events. This also brings good news for buyers as the unaccounted cash is no longer in the market, and then there are fewer requirements for buying which have cut down the price of a property. If you are planning to buy a house, it's the best time to purchase with the availability of different schemes of government.

Real Estate Regulatory Authority (RERA)

To safeguard home buyers and investors in the real estate segment, the parliament of India passed the principles and procedures of RERA in March 2016. This Act is obligatory for all residential and commercial projects where the land area exceeds more than 500 sq. meters or 8 apartments. Builders have to register on-going projects within three months of commencement of the Act in order to provide transparencies in a project. Registration

applications can be declined or approved within the thirty-day period from the date of application to the real estate regulatory authority. A penalty of 10 % on project cost or three years custody can be imposed on those builders who fail to enroll with real estate regulatory authorities. The major benefit included in the Act is that builders have to quote rates based on carpet area (including toilets and kitchen) and not super built-up area. This will ban unaccounted money to be pumped from buyers into the real estate sector as 70 % of the amount has to be deposited in the builder's bank account. All union territories and two states, Uttar Pradesh and Gujarat have already implemented this bill. Chandigarh has set up an impermanent regulator and other states have to meet the deadline for implementation from the time of the bill passed. This bill will bring transparency to the sector.

Benami Transaction Act

The Benami Transaction Act will restrict black money flow in the housing sector. The benami transaction act defines that a property is held by or transferred to a person, but has been paid by a third person. Property transaction includes: (i) the transaction did with fake names (ii) unawareness about ownership of property by the owner and (iii) unable to trace the person providing the consideration for the property. Instead of possessing black money in cash, the tax evader invests their gathered illegal money in buying benami properties. The whole process reduces the income generation of the government adversely affecting growth and development of the country. As the taxpayer's percentage in the country is miserable, the government has failed to successfully implement its policies and schemes due to lack of resources. A strong law against benami properties is needed to have a check on corruption.

4. SYSTEM MODULES

Home Page Module

In this Home Page Module, it works by displaying the various properties and it act as root to all other options. From here Seller or Buyer can sell or register their land. And also, there is separate login credentials for land buyers to register.

Buyer Module

This Module is specially made for Land Buyers.In this Module a buyer can knows the land details, verified documents, rate, etc. It can accessible after the buyer registration process. And also, there'll be login credentials for already existed buyer.

Seller Module

This Module is for Land Sellers. As usual there is login page after logging up there'll be several details to upload with image of the Land. It includes documents, sq ft, rate, etc., There'll be shown to buyers when they want to know details about land.

Admin Module

In this Module it is important module to finalize the process. Admin will analyze and verify all kind of documents, registration, rate, etc., Once the documents were verified by admin, he'll accept and store it to the database. After this buyer can register their lands without any doubts and thoughts.

Details Upload Module

This Module is used for uploading all the details of the land which will be verified by Admin.This will be stored in Database. Later seller or buyer can see this by logging in. It includes every detail of the land like survey no, location, advance, image, etc., and also seller details.

Upload Status Module

This Module is to know whether the details of land uploaded successfully or not. This will get to know once the admin approves and accepts the registration. This to prevent or avoid fake details of the land.

Mail Module

This Module is to notify the buyer after the registration process. Up to user location it'll be monitored. Every detail will be processed about owner/seller and mailed to the user. Mail will be sent only when the process is verified and approved by admin. So, by this user will be notified about the registration process.

System Configuration:

H/W SYSTEM CONFIGURATION

- Processor - Intel
- Speed - 1.1 GHz
- RAM - 4GB
- Hard Disk - 260GB

S/W System Configuration

- Operating System - Windows 7/8/10
- Front End - Java, JSP
- Back End - MYSQL

PROPOSED WORK

In recent times, a lot of problems are faced by commercial real estate industries and land registration systems where even though the data is in digital form, they are stored on disparate systems and thereby lack transparency, trust and efficiency. The intention is to implement a small module of the land registration process with regards to the state of Maharashtra. We propose a private and permissioned Innovative Residence system that restricts the participants who can contribute to the consensus process, to overcome the obstacles faced earlier as mentioned Our Innovative Residence system makes use of Asymmetric cryptography for security of users and distributed consensus algorithms for ledger consistency. The main features of Innovative Residence technology are decentralization, persistence, anonymity and auditability and an amalgam of these results in reduced cost and improved efficiency, reliability.

Once the compass is linked, the coming step is to design the system armature, including the blockchain network, smart contract development, and stoner interfaces. This involves setting up the blockchain network, configuring bumps, and icing that the network is secure and tamper- evidence. In the environment of land enrollment, smart contracts can automate numerous of the tasks presently done by land registry officers. stoner interfaces will allow druggies to interact with the system, including registering land, transferring power, and penetrating land records. Before launching the system, it's essential to test it to ensure that it's secure, functional, and stoner-friendly. Once the system is tested and vindicated, it can be launched for public use.nonstop monitoring and conservation are needed to ensure the system remains secure, streamlined, and stoner-friendly.Overall, the perpetration of a land enrollment system using blockchain technology has the implicit to give a secure, transparent, and effective way of managing land records, reducing fraud, and perfecting the delicacy and availability of land information.

WORKFLOW

The first step is to prepare to buy the house. This involves doing disquisition on the real estate request, getting a property appraisal, and listing the property for trade or searching for parcels for purchase. This can be done through online commerce. Once an implicit buyer or dealer is set up, an original offer is made. The buyer will generally make an offer to buy the property.

This process may go back and forth until both parties come to an agreement. After both parties agree on the terms of the trade, a contract is drafted. The buyer will review the contract and make any necessary amendments or changes. Once both parties are satisfied with the contract, they will subscribe it and the trade is considered to be under contract.

Assuming there are no issues during the contingency period, the trade will move to the ending stage. At the end, both parties will subscribe to the final documents. Overall, dealing and buying a roof can be a complex process that involves multiple parties, lodgment, and legal documents. It's important to work with a trusted or attorney to ensure that everything is handled properly and that your interests are defended throughout the process.

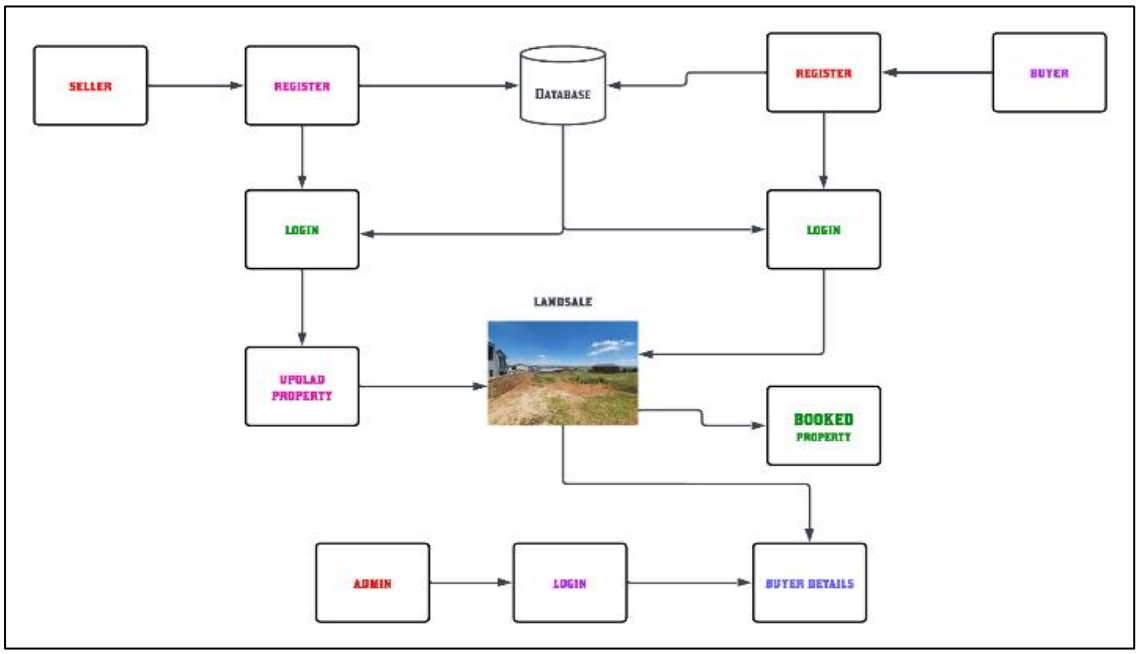

Figure 1: Block Diagram

The process starts with Seller registration and it'll be stored in database. Similarly, User registration and the process repeats. Both will have login credentials and admin will overview the process.

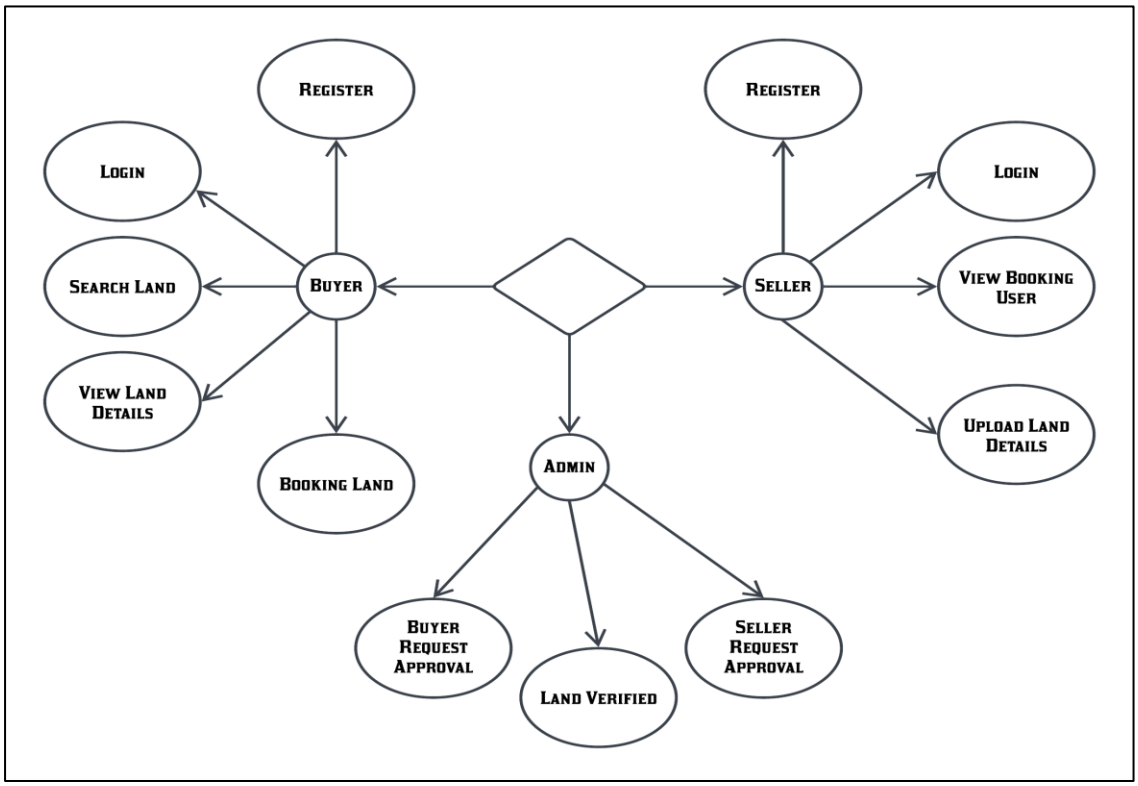

Figure 2: E R Diagram

Entity Relationship shows how the seller, buyer and admin are related and their sub-parts.

OUTPUT AND SCREENSHOTS

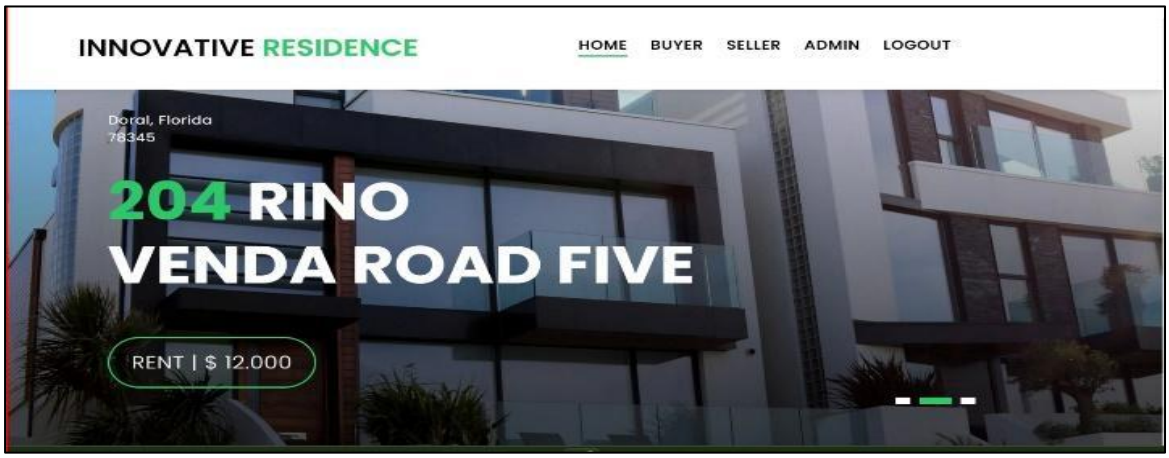

Figure 3: Home page

This is our Home Page consists features like Buyer, Seller, Admin, etc. From here theregistration process will starts with login details and so on.Buyer page it consists of details which has to be filled only by Buyer. By this admin can verify the buyer's identity. This also shown to the owner of the land i.e., Seller.Seller Page is made for land sellers or owners to enter their details. Similar to buyers details it'll be acknowledged by admin.Admin Login Page is used by logging in admin can know both seller and buyer's details which is stored in database.Later he'll approve once the verification is done on given details. Uploading Page is made for to enter the land details. Every detail of land was collected and stored in the database.Uploading Status page is theacknowledgement page that the user will get to know whether the details were uploaded or not.Here you can see the user details who are registered and get approved or accepted by the admin.In this the user will be notified through mail when the registration process in done. As you can see the mail column and message description box is also there to share information when it is needed.

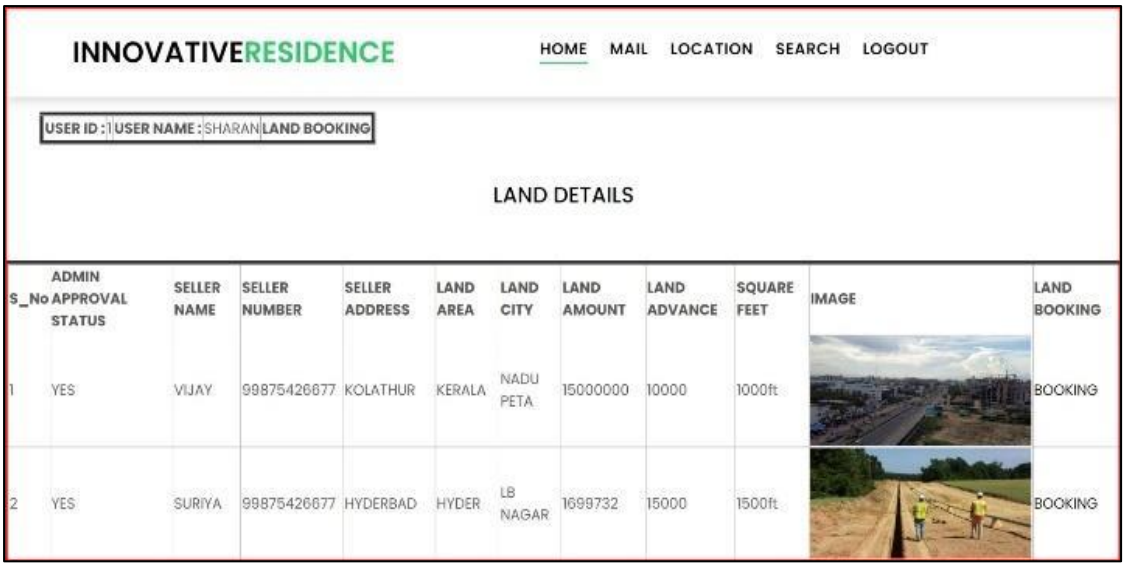

Figure 4: Final output page

5. CONCLUSION

Innovative Residence is one of the most secure ways of storing data without it being changed. It is a distributed ledger that is open to anyone and once data is put into it, it is very difficult to change or meddle with it. Using this property of Innovative Residence, we want to put it to use into one of the most fraudulent systems in India, the Land Registration System. Our system uses Innovative Residence with the employment of hyper ledger. This gives rise to a system that is more evolved and features all the activities like buying and selling in an efficient

and reliable way. Innovative Residence technology made this system secure and faster. If this kind of system is upgraded further and integrated with useful API then this will lead to faster transactions and will eventually lead to easement of the entire process, thus making the entire system hassle free and convenient in the long run which would be beneficial to mankind. Land registration has the potential to revolutionize the way we manage and track land ownership. The immutability and transparency provide a secure and efficient way to store land records, reducing the risk of fraud and corruption.Implementing blockchain-based land registration systems can also help to streamline the process of buying and selling property, making it faster and more efficient for all parties involved. Additionally, it can enable greater accessibility to land ownership for marginalized communities and simplify the process of resolving land disputes. However, there are also challenges that need to be addressed, including the need for a strong legal framework to govern the use of blockchain in land registration and the requirement for proper training and infrastructure to ensure the smooth functioning of the system.Overall, the potential benefits of blockchain in land registration are significant, and with careful planning and implementation, this technology could help to transform the way we manage and track land ownership.

Future Enhancement

As our implemented system is currently subjected to deployment of transactions where we directly make use of all the documents which are already verified manually by the authority, in future our scope could be expanded by integrating our system with government API. By doing so we can verify the users and their deeds automatically in a simple manner. Also, incorporation of a language translation tool can be done to users who speak their native languages. Lastly, we can also keep a track of the entire history of a piece of land and add various dimensions to our system and thus making it more reliable and user friendly.

6. REFERENCES

1. N.S.Tinu(2018), A Survey on Innovative Residence Technology Taxonomy, Consensus Algorithms and Applications.
2. J. Michael Graglia, Christopher Mellon, Innovative Residence and Property in 2018 : At end of the Beginning
3. Raquel Benbunan-Fich, Arturo Castellanos(2018) Digitization of Land Records: From Paper to Innovative Residence
4. IBM, State Street Corp. Hyper ledger Fabric: A Distributed Operating System for Permissioned Innovative Residence
5. MiroslavStefanovic, DordePrzulj, DarkoStefanovic(2018) Blockchain and Land Administration : Possible applications and limitation
6. Tsung-Ting Kuo, Hugo Zavaleta Rojas and LucilaOhnoMachado(2019) Comparison of blockchain platforms: a systematic review and healthcare examples
7. YacovManevich, Artem Barger, and Yoav Toc, Service Discovery for Hyperledger Fabric
8. Hyperledger 2019, Hyperledger Fabric - Introduction https://hyperledger-fabric.readthedocs.io/en/release-1.4/whatis.html
9. Hyperledger 2017, Hyperledger Fabric - Transaction Flow https://hyperledger-fabric.readthedocs.io/en/release-1.1/txflow.html.
10. Yashwanth Madaka, Building a blockchain application using Hyperledger Fabric with Angular Frontend: Part-2 https://medium.com/coinmonks/building-a-blockchain-applicationusing-hyperledger-fabric-with-angular-frontend-part-2-22ef7c77f53
11. Hyperledger Composer Installing prerequisites ¨ https://hyperledger.github.io/composer/latest/installing/installing- ¨ prereqs.html#macos