isrjournals

International Journal of Advanced Research in Computer Science Engineering and Information Technology

Volume: 6, Issue: 3,Special Issue: 3 ,Apr,2024 ,ISSN_NO: 2321-3337

CLOUD BASED PORTAL FOR LAND AND FLAT BOOKING

Akhila.S[1], Bhavanapriya.S[2], Sarumathi.S[3], Varshadevi.S[4]*

[123] UG Scholar-Dept. CSE, GRT Institute of Engineering and Technology, Tiruttani, India.

[4*]Assistant Professor-Dept. CSE, GRT Institute of Engineering and Technology, Tiruttani, India.

akhilasantharasi@gmail.com , bhawanapriyashankar@gmail.com, sarus9888@gmail.com

***Corresponding Author:varshamiyav13@gmail.com**

Abstract

In the traditional Land Registration system practiced in India, there exists a middle man (broker) who establishes a contact between the buyer and seller, for instance if an individual wants to buy or sell a property, the broker will create and assemble all the obligatory physical documents with regards to an agreement as a proof of property. Brokers will ensure that the land property would be registered by an authorized government office where all the attributes are noted down in a ledger and thereafter the whole transaction and purchase between the two parties takes place. In this scenario, there are chances of losing or tampering of the documents as anyone with certain powers can access or alter the papers easily which in turn threatens this concrete proof of land. Thus, this type of system as compared to our proposed system in which we make use of a smart contract to deal with the assets and transactions among the participants, is relatively time consuming, less secure and unsynchronized where activities including corruption and fraudulence might be associated during the execution of the required process. With an amalgam of inspection and analysis regarding the old accustomed way and considering that Innovative Resistance has an increased transparency and integrity maintenance along with the portability factor, we put forward a Innovative Resistance based land registration system which provides a transparent, secured and decentralized method for execution of transactions between the participants by employing the concept of hyper ledger.

Keywords: *Cloud computing, AES algorithm*

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.

2. Related Work

As the core of block chain technology, the consensus algorithm directly affects the security, stability, and decentralization of the block chain and numerous other important characteristics. Choosing an appropriate consensus algorithm for different scenarios is currently a challenge in the implementation of block chain applications. This paper classifies the improvement schemes of proof of stake (POS) into three categories: POS-based consensus algorithms, POS- and Proof of Work(POW) POW-based combined consensus algorithm, and POS- and Byzantine fault tolerance BFT-based consensus algorithms. [1]

Block chain technology enables stakeholders to conduct trusted data sharing and exchange without a trusted centralized institution. These features make block chain applications

attractive to enhance trustworthiness in very different contexts. Due to unique design concepts and outstanding performance, block chain has become a popular research topic in industry and academia in recent years. A permissioned block chain can reach a consensus among a group of entities that do not establish an entire trust relationship. As the core module of block chain technology, the consensus algorithm plays a vital role in the performance of the block chain system. Thus, this paper proposes a new consensus algorithm for permissioned block chain, the Risk Assessment-based Consensus (RAC) protocol, combined with the decentralized design concept and the risk-node assessment mechanism to address the unbalance issues of performance in speed, scalability, and security.[2]

In recent years, many papers have been published on the topics of the block chain (BC) and block chain technology (BCT). Some papers put BCT in the context of land registries (LRs), land cadastres (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 analysed using bibliometric process analysis methodology and R studio software with the Bibliometric R 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.[3]

Land registry system is one of the essential components of any governance model required to ascertain the ownership records uniquely. This paper reviews the existing literature and provides a detailed literature review consisting of 3 stages based on three research questions (RQ) that highlight the step by steps evaluation and analysis. we selected 48 primary articles out of 477 extracted from different scientific databases based on criteria and RQ defined in the research method section. The majority of these papers focus on assessing the identity issues related to the land registry system and reviewing the existing identity models to find the best possible identity model to resolve the identified identity problems in the land registry. This paper examines the current land registry model and its shortcomings. It explains the various block chain types and their characteristics. Identity issues of block chain-based models have been further evaluated on defined criteria.[4]

We first carry out a deeper survey about Block chain technology, especially its history, consensus algorithms' quantitative comparisons, details of cryptography in terms of public key cryptography. In particular, we assess the Block chain security from risk analysis to derive comprehensive Block chain security risk categories, analyse the real attacks and bugs against Block chain, and summarize the recently developed security measures on Block chain. Finally, the challenges and research trends are presented to achieve more scalable and securer Block chain systems for the massive deployments.[5]

3. Objective

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.

4. Proposed System

In recent times, a lot of problems are faced by commercial real estate industries and land registration systems where even though the

Volume: 6, Issue: 3,Special Issue: 3 ,Apr,2024 ,ISSN_NO: 2321-3337

data is in digital form, they are stored on disparate systems and there by lack of 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 Resistance system that restricts the participants who can contribute to the consensus process, to overcome the obstacles faced earlier as mentioned Our Innovative Resistance system makes use of Asymmetric cryptography for security of users and distributed consensus algorithms for ledger consistency. The main features of Innovative Resistance technology are decentralization, persistence, anonymity and auditability and an amalgam of these results in reduced cost and improved efficiency, reliability.

5. Architecture Diagram

A cloud-based land and flat booking system typically involves several components working together to facilitate the booking process efficiently. This Innovative Resistance website ease the process of the buyer and seller. The architecture diagram for such a system:

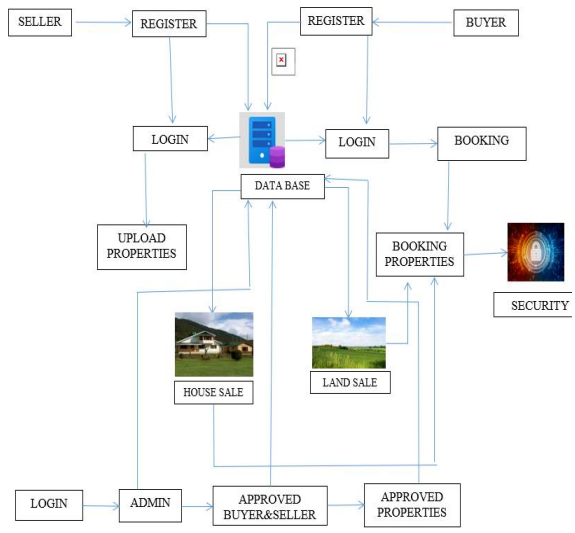

Fig. 5.1 Architecture Diagram

6. Algorithm

AES (acronym of Advanced Encryption Standard) is a symmetric encryption algorithm. The algorithm was developed by two Belgian cryptographers Joan Daemen and Vincent Rijmen. AES was designed to be efficient in both hardware and software, and supports a block length of 128 bits and key lengths of 128, 192, and 256 bits.

7. Implementation

7.1. Admin Module

Admin will login into the portal. We will authenticate the registration request of the users. Once the property details upload by the seller then admin will verify the documents thoroughly first. Then only the property details will be displayed to the buyer on the buyer page where he can book the property.

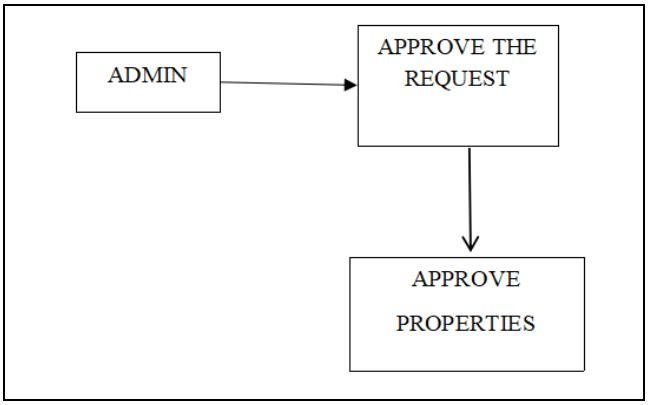

Fig. 7.1 Admin Module

7.2. Seller Module

Seller will enter as a common user of the website and complete the registration process in Seller page and login into the website once Admin approve his/her request. Then seller needs to upload all requisite details of the property he/she wants to sell which is further verified by the Admin. He can make complaint to the admin for fraudulent buyer through the mail page provided in the website.

isrjournals

International Journal of Advanced Research in Computer Science Engineering and Information Technology

Volume: 6, Issue: 3,Special Issue: 3 ,Apr,2024 ,ISSN_NO: 2321-3337

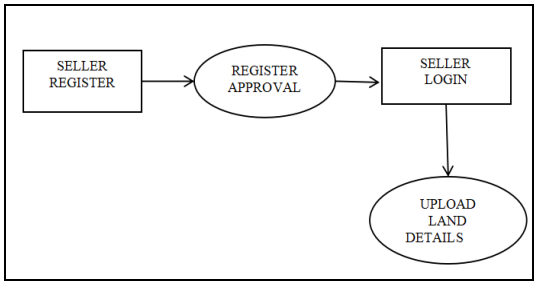

Fig. 7.2 Seller Module

7.3. Buyer Module

Buyer will enter as a common user of the website and complete the registration process and login into the website. Then buyer can book the lands on the portal that are verified by the smart contract. Lastly buyer will book the property.

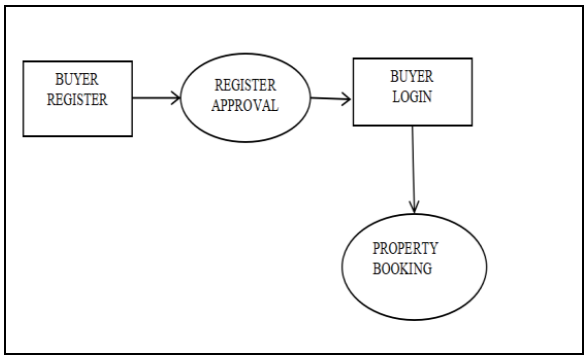

Fig. 7.3 Buyer Module

8. Experimental Results

This result discusses about the implementation of the land and flat booking using big data analysis and cloud computing and the below fig. 8.1., shows the admin login page of the application and fig. 8.2., Shows the buyer verification and fig. 8.3., Shows that admin verifies buyer registration page. fig. 8.4., Shows the seller login page and fig. 8.5., shows that seller upload the land details.fig.8.6., shows the land verification
fig. 8.7., shows that seller upload the flat/house details.fig.8.8., shows the flat/house verification. All the figures that deliver the concept of the project for Land and flat booking.

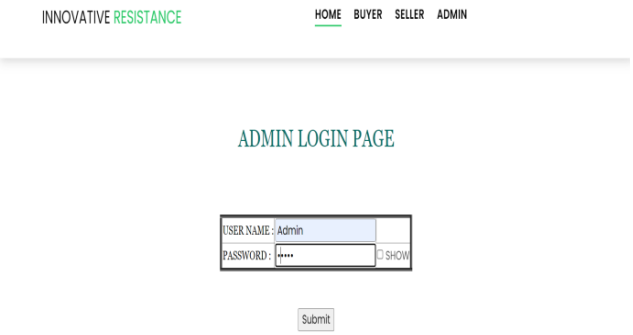

Fig.8.1 Admin Login

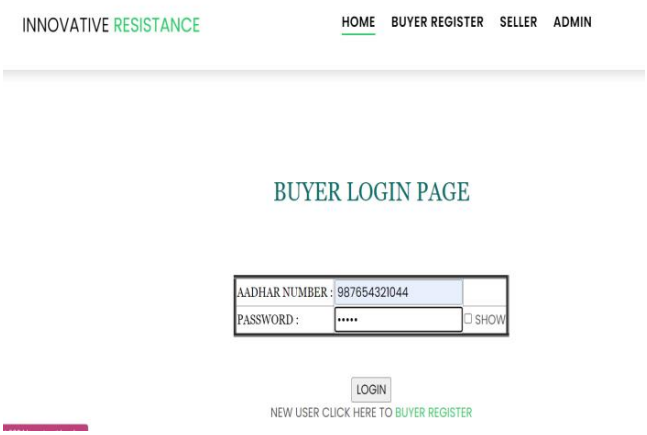

Fig.8.2 Buyer Login

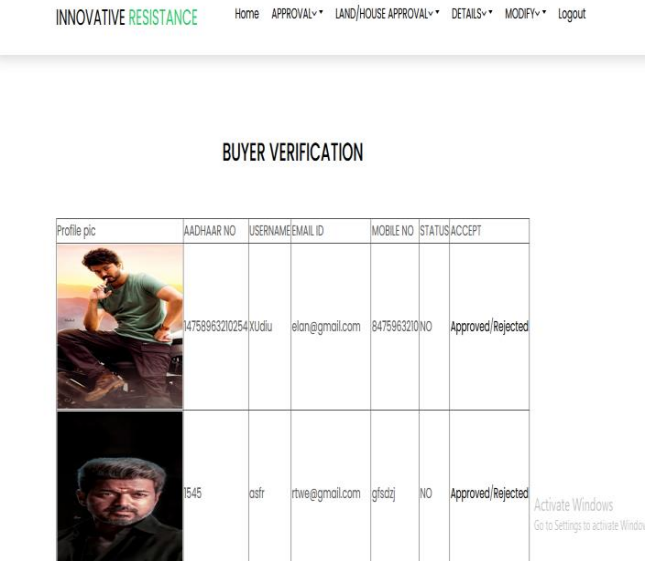

Fig.8.3 Admin Verifies Buyer Registration

isrjournals

International Journal of Advanced Research in Computer Science Engineering and Information Technology

Volume: 6, Issue: 3,Special Issue: 3 ,Apr,2024 ,ISSN_NO: 2321-3337

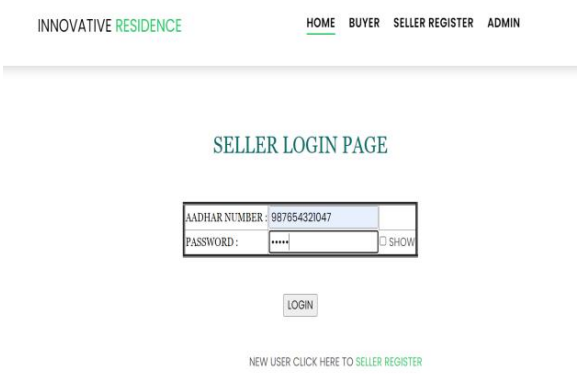

Fig.8.4 Seller Login

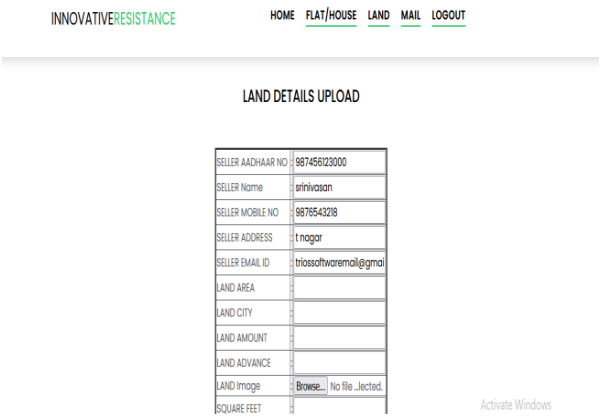

Fig.8.5 Shows that seller upload the land details

Fig.8.7 Land Verification by Admin

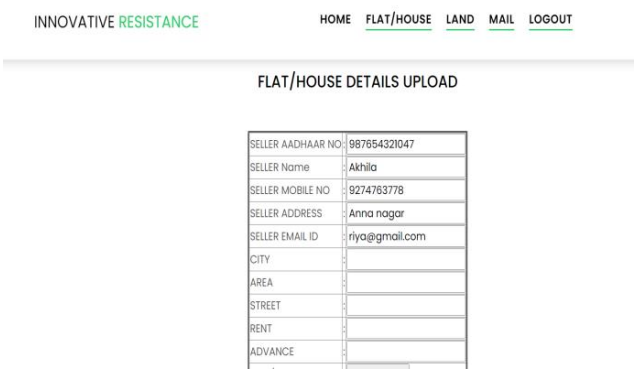

Fig.8.7 Flat/House Details Upload

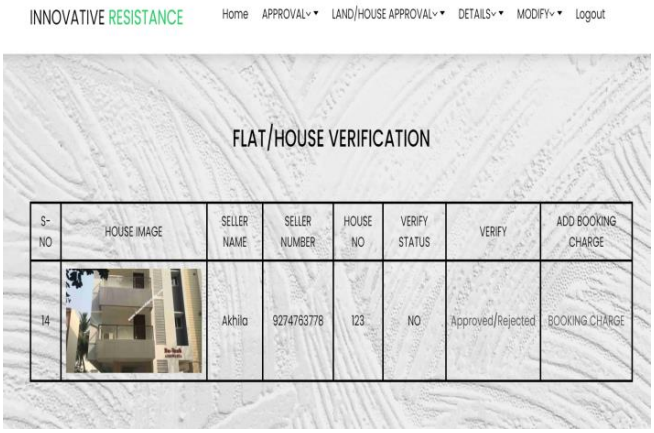

Fig.8.8 Flat/House Verification by Admin

9. Conclusion & Future Work

Innovative Resistance 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 Resistance, we want to put it to use into one of the most fraudulent systems in India, the Land Registration System. Our system uses Innovative Resistance 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. By this Innovative Resistance technology,we 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 the mankind. In Future, 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.

Reference

[1] Guifen Zhang (2022), Survey of Consensus Algorithms for Proof of Stake in Blockchain.

[2] Xiaohui Zhang (2022), A Consensus Algorithm Based on Risk Assessment Model for Permissioned Blockchain.

[3] Marina Peko (2022), Blockchain Based Land Management for Sustainable Development.

[4] Sahnius Usman (2022), Identity Model for Blockchain based Land Registry System: A Comparison.

[5] Huaqun Guo (2022), A Survey on Blockchain Technology and its Security.

[6] N.S. Tinu (2018), A Survey on Innovative Resistance Technology Taxonomy, Consensus Algorithms and Applications.

[7] J. Michael Graglia, Christopher Mellon, Innovative Resistance and Property in 2018: At end of the Beginning

[8] Raquel Benbunan-Fich, Arturo Castellanos (2018) Digitalization of Land Records: From Paper to Innovative Resistance

[9] IBM, State Street Corp. Hyper ledger Fabric: A Distributed Operating System for Permissioned Innovative Resistance

[10] Miroslav Stefanovic, Dorde Przulj, Darko Stefanovi (2018) Block chain and Land Administration: Possible applications and limitation

[11] Tsung-Ting Kuo, Hugo Zavaleta Rojas and Lucila OhnoMachado (2019) Comparison of block chain platforms: a systematic review and healthcare examples

[12] Yacov Manevich, Artem Barger, and Yoav Toc, Service Discovery for Hyper ledger Fabric

[13] Hyper ledger 2019, Hyper ledger Fabric – Introduction. Refer this https://hyperledger-fabric.readthedocs.io/en/release-1.4/whatis.html

[14] Hyper ledger 2017, Hyper ledger Fabric – Transaction Flow. Refer this link for more information https://hyperledgerfabric.readthedocs.io/en/release1.1/txflow.html.

[15] Yashwanth Madaka, Building a block chain application using Hyper ledger Fabric with Angular Front end: Part-2 https://medium.com/coinmonks/building-a-blockchain-applicationusing-hyperledger-fabric-with-angular-frontend-part-2-22ef7c77f53.