

Blockchain Implementation for Chain of Custody

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Abstract - Real estate investment market is expanding day by day due to its increasing asset value, higher returns and safe nature. However, the real estate market tends to be illiquid, highly segmented and localized, with privately negotiated trades and high transaction costs due to the involvement of various trusted third party (like Lawyers, brokers, notaries.) costs. A future-proof, new business model can be created using the blockchain technology for connecting potential investors with property owners. The aim of the project is to liquidify, tokenize and trade real estate properties much like stocks on exchanges. The platform could also help by cutting out additional inspection costs, registration and loan fees. The main aspect here can be focused on the added value of Blockchain as a data sharing program which could create a safer and secure way of trading assets.

Key Words: Blockchain, Blockchain Implementation for chain of custody, Real Estate, Python, SQLITE, Eclipse.

1. INTRODUCTION

In recent times Internet is most important means of information and communication. It connects peoples across the country. Due to internet the advanced technology has been developed for different purpose. The advanced technology which is transforming across the sector including the real estate Blockchain is one the advancement technology which is mostly used in Bank sector to eliminate the third party. Basically Blockchain is not a software, nor it is a company, it is a new way for documenting the data over an internet. Blockchain technology allows to eliminate the third party in order to save time and cost. Chain of Custody is the way of handling the data for the time it is collected and until it is presented. The advantages for chain of custody are it gives Integrity it means the data can't be changed after it is submitted. Verifiability, it states that the data should be verified from each process Authentication it means the process of proving the data as valid or true. Security is the main advantage for Blockchain once the data is submitted it can't be altered or changed, nor the other members can see it until the work is done. Real Estate is a unique way and largest assets class in the world. As nowadays real estate is a complex and largest assets in the world which has an important role in economics. Blockchain has a special feature known as Transparency. Therefore our aim is to purpose an

infrastructure for a blockchain based application to give better quality and complete information view which can involve all the parties like ledger. It will neglect the third party involvement like brokers.

2. PROBLEM STATEMENT

In future blockchain in real estate market could help us create new business for connecting sellers and buyers all the documents could be liquefied tokenized and traded as stocks exchange. The blockchain would also positively affect during transaction times as sellers can find they can sell fractions of shares on particular property as difficult to search for a single owner. It is more likely than whole real estate by lowering the barrier for real estate investment. As new definitions of property ownership and contracts will come from this shift in the real estate

3. EXISTING SYSTEM

In existing system, all transaction works are done manually. In Manual Booking System Customer has to go to the Broker have a site visit. Ask, Inquire for agent then Purchase the property and finally pay. Pay Brokerage & make the property paper. Difficult to Maintain the Customer Details of Property and Payment Receipt in Register and property paper. They Book The Property in the database in the existing system like Magicbricks, 99 acres is a social property platform Through such platforms people give the details about the property for Rent or Sale. During this process it makes plenty of Time and efforts.

4. WORKFLOW

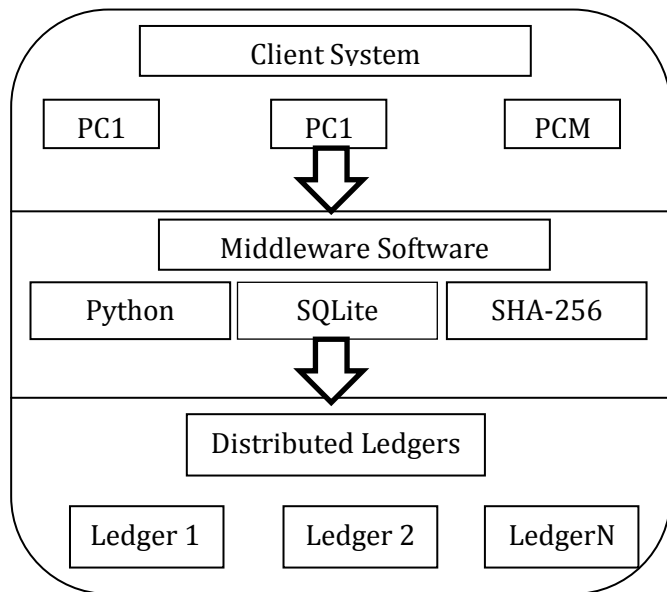


Fig1: Workflow of proposed system

The above figure shows the flow of the project. A set of databases holding all previous transaction information in a blockchain are referred to as ledgers. The ledger is distributed across multiple computers, which can be located all over the world and run by anyone with an Internet connection. Purchase request for a property share on sale can be generated by any remote or local client machine. A set of middleware software access, verify the integrity and mine new transaction requests among the distributed ledgers to establish trade. A 256 bit encryption algorithm called SHA-256 along with a 32-bit “nonce” field is employed to generate a one-way secret hash key, a field to confirm integrity of blocks, blockchains and transactions. An application for the proposed concept is developed which handles client side requests, manages the ledgers and mines the transactions among distributed ledger system.

5. MODULES

Module 1: Login and registration

The user can login to the account by providing the username and password if the user is new to the application then he need to register to the mail account by providing correct details and registering to it.

Module 2: Customer Window

Once logged in, customer can browse and get detailed information about the properties for sale through the customer window. The potential buyers can purchase real estate area in a liquid share of properties of their choice through the same .Similarly customers can view and get

detailed information of the shares own by them and also resell them at non-modified rates.

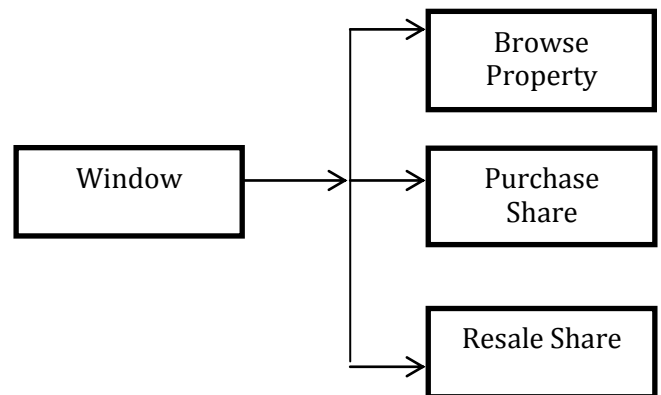


Fig2: Customer Module

Module 3: Admin

The administrator of the application can add new properties, delete or govern existing properties, manage and handle user details, resolve request queries, administrator and provide security solutions to the distributed ledger System.

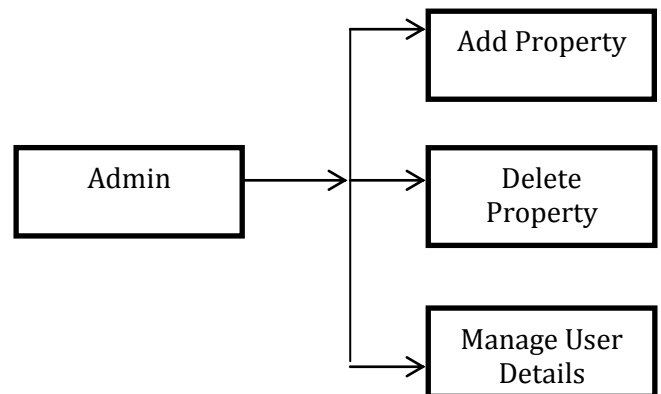
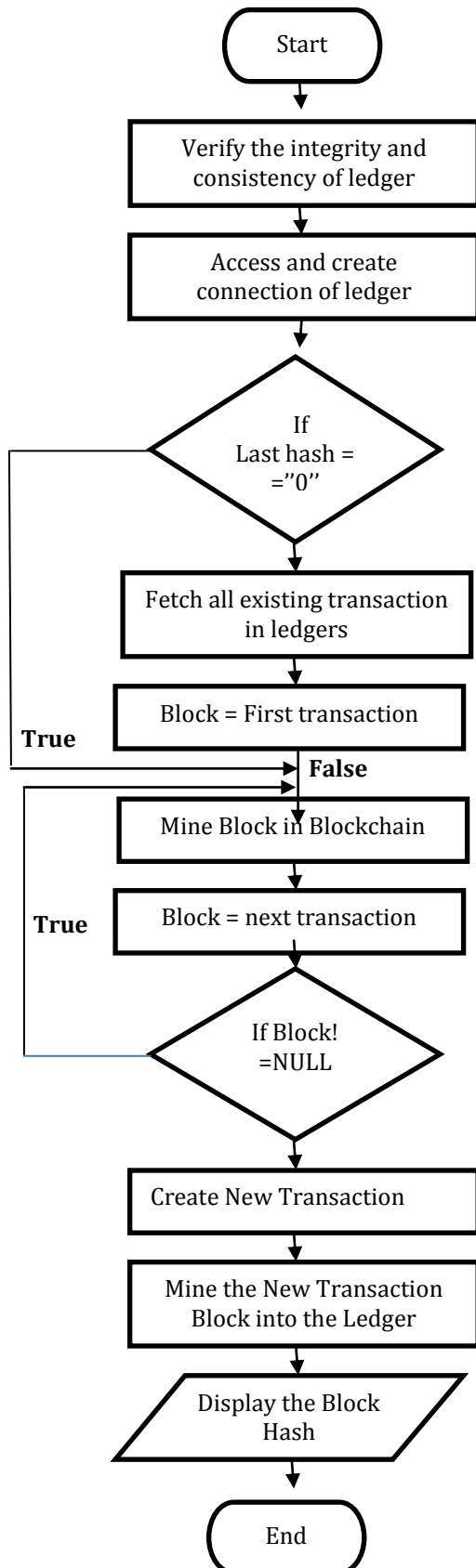


Fig3: Admin Module

6. FLOWCHART



7. USECASE DIAGRAM

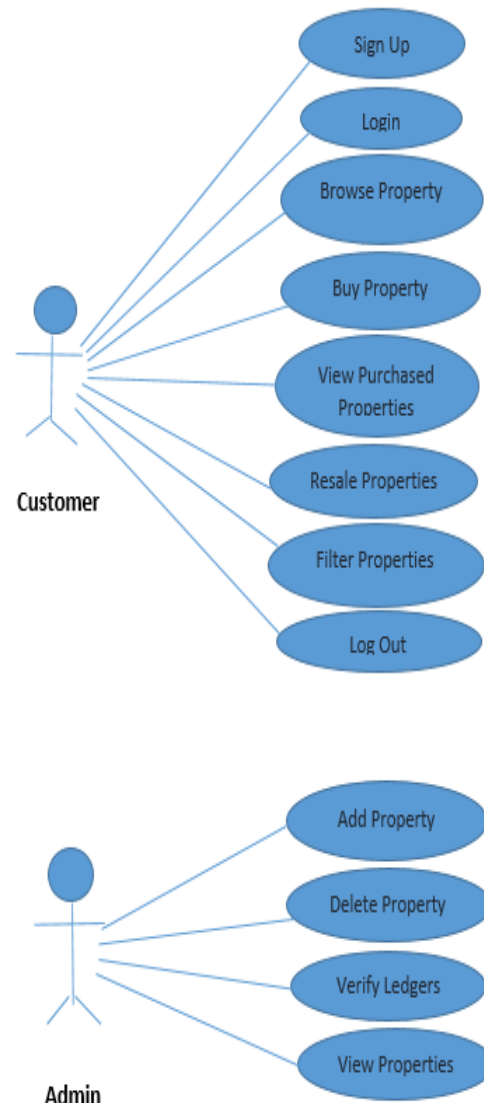


Fig5: Usecase Diagram

8. TEST CASES

During testing the software is to be tested evaluated to determine if the system is performing as expected. We have various test case such as login, homepage, search property, booked property and logout .Every test case in this implementation giving completely expected output results as the flow of the program actions are performed correctly

Id	Test Scenario	Test Steps	Test Data	Expected Output	Actual Output
T-01	Check customer login with valid details	Enter User Id Enter Password Click Submit	Email id, Password	User should Login into an application	Login Successful
T-02	Check Customer Login with invalid Data	Enter User Id Enter Password Click Submit	Email id, Password	User should Login into an application	Login Failed
T-03	Check homepage	User Login Homepage	Homepage Details	Valid Homepage details	Valid homepage details
T-04	Search Property	User login Homepage Search property	Property Search	Valid Properties List	Valid Properties List
T-05	Book Property	User Login Homepage Search property Book property	Book property as per the share and Budget	Property Booked Successfully	Property Booked Successfully

9. RESULTS

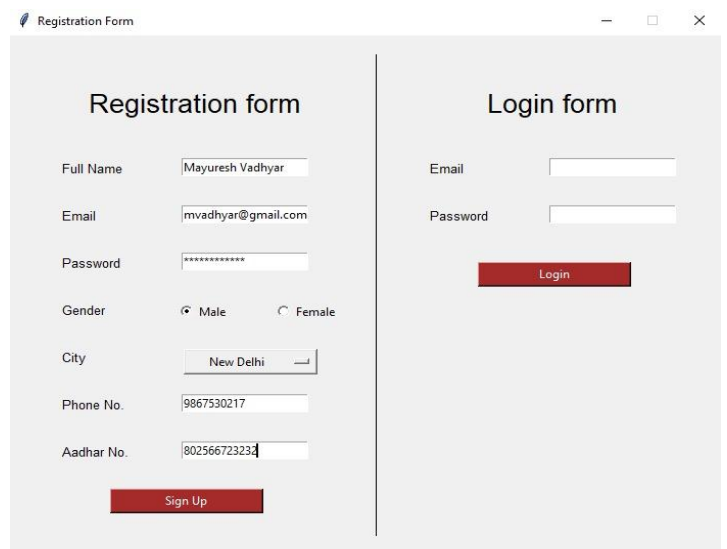


Fig6: Registration Form

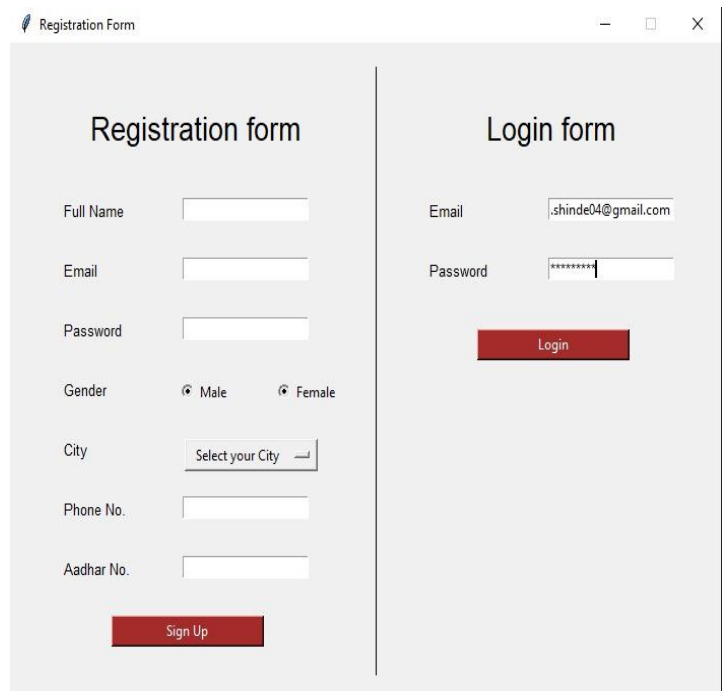


Fig7: Login Form

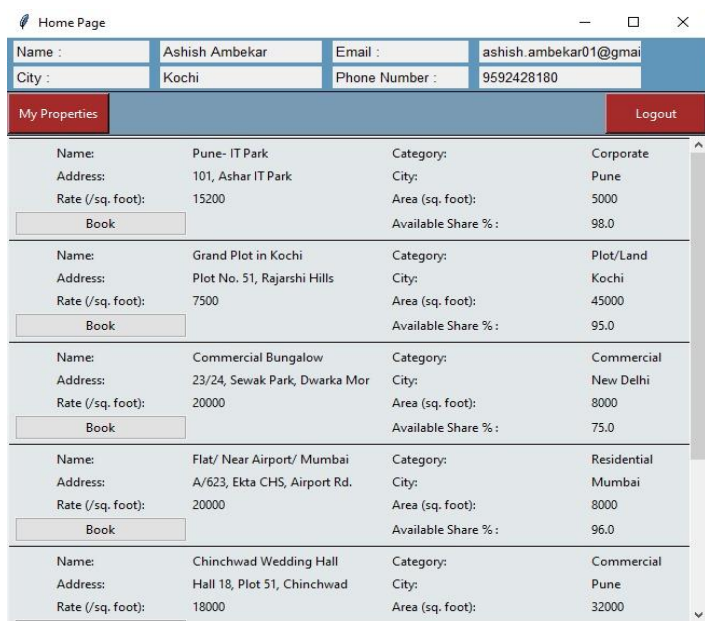


Fig8: Home Page

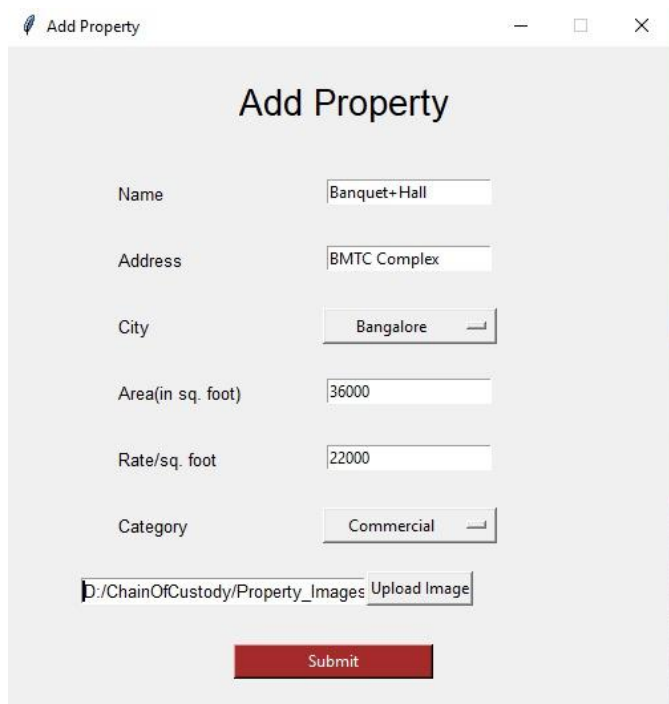


Fig9: Add Property

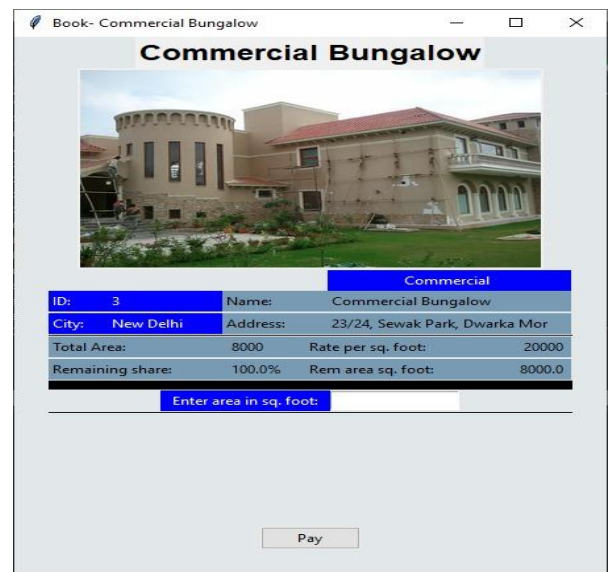


Fig10: Property Book

10. CONCLUSION & FUTURE WORK

It is possible to illustrate that blockchain can effectively implements all necessary and sufficient criteria for property without reliance on legal means. The idea eliminates the need for a third-party authority to enforce exclusion rights, and provides a trade platform that does not require additional charges such as middleman costs, notarization and registration and loan fees. Blockchain implementation for property ownership greatly dispenses decentralization, integrity, authentication and liquidity to the purchase and trade of real estate property. New definitions to property ownership will emerge from this shift in the real estate business. The implications of these findings are that traditional property markets and brokerage could be replaced by or supplemented with blockchain models, and leveraged into new domains.

11. References

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