Advanced Hospital Management Using Blockchain

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Abstract: Keeping track of a person's medical record is extremely important and relevant any day. A bad medical record or a tampered medical record can lead to many severe consequences. A missed record of a dosage can lead to a overdose by mistake. Our project aim is to solve this issue by maintaining a central repository for the patient's medical report. In order to avoid report tampering we are going to implement this using blockchain and distributed ledger technology. Our project will help the doctors treat the patient better with the help of their medical reports. In our project every patient will have their own patient ID and their related data will be stored using the ID. Just in case a patient wants to switch hospital he can easy do so, as the report can be accessed from anywhere using his ID. Having a safe and centralized repository can help avoid a lot of mishaps and would make the patient's like a lot easier.

Index Terms – Hospital management*, , Blockchain*

I. INTRODUCTION

 Blockchain seems complicated ,and it definitely are often, but its core concept is basically quite simple. A blockchain is a type of database. To be ready to understand blockchain, it helps to first understand what a database actually is .A database could also be a set of data that is stored electronically on a computer system. Information, or data, in databases is usually structured in table format to permit for easier searching and filtering for specific information. As ages pass by, more and more people are prone to getting infected by some disease. And for every new disease entry into a hospital, the hospital is in charge of more and more tedious tasks on their hands. To reduce and alleviate the numerous amounts of tasks and schedules that have been laid upon the hands of the hospital, hospital management systems are developed. Keeping track of a person's medical record is extremely important and relevant any day. A bad medical record or a tampered medical record can lead to many severe consequences. A missed record of a dosage can lead to a overdose by mistake. Our project aim is to solve this issue by maintaining a central repository for the patient's medical report.

II. LITERATURE SURVEY

[1] It proposes a new medical data sharing scheme that mixes the benefits of cloud storage and blockchain technology. Our scheme uses the cloud server to store encrypted medical data, and the blockchain system to preserve the address of corresponding medical data ciphertext and medical-related information.

[2] It propose a medical data sharing and protection scheme supported on the hospital's private blockchain to improve the electronic health system of the hospital.Firstly, the scheme can satisfy various security properties such as decentralization, openness, and tamper resistance. A reliable mechanism is made for the doctors to store medical data or access the historical data of patients while meeting privacy preservation.

[3]With the development of social information and network technology, the era of big data has arrived. However, data security and privacy have became a bottleneck of big data development. To address this issue, the blockchain with distributed ledger as an crucial key technology provides an effective solution for data security in big data. In this paper, a system model supported on blockchain for data sharing and security is proposed. Based on the model, a data sharing scheme has proposed. In the scheme, block consensus

and data sharing as two important stages are highlighted. In the simulation, the result shows that the performance of proposed scheme is much higher than that of attribute based encryption scheme when the size of the encrypting data is large.

[4]we integrate the strengths of both blockchain and cloud computing and build the privacy protection scheme for medical data based on blockchain and cloud computing. This scheme introduces cloud computing provides services to blockchain nodes with cloud server computing; meanwhile, it collects, analyzes, processes, and maintains medical data within the identity authentication interface and solves the insufficient computing abilities   of some nodes in blockchain so on to verify the authenticity and reliability of data. The simulation experiment proves that the proposed scheme is effective. It are able to do the secure protection and integrity verification of medical data and address the problems of high computing complexity, data sharing, and privacy protection.

[5] To preserve the data privacy, we realize secure and fine grained health data and social data sharing with attribute-based encryption which allows patients to share their private personal data securely. In order to understand enhanced data collaboration, we allow the healthcare analyzers to access both the reencrypted health data and thus the social data with authorization from the data owner . Specifically, most of the health data encoding and decryption computations are outsourced from resource-constrained mobile devices to a health cloud, and the decryption of the healthcare analyzer incurs a low cost. The security and performance analysis results show the safety and efficiency of our scheme.

III. EXISTING SYSTEM
The existing system is a simple web application with integrated ml techniques that are huge in size and draw huge computational power. Furthermore, data inconsistencies are bound to happen in such laid-back systems. Also the system is insecure and prone to a lot of intruder attacks.

IV. PROPOSED SYSTEM

The proposed system uses blockchain and the system is portable and compact and does not draw much power. Just in case patient wants to switch hosital he can easy to do so,as the report can be accessed from anywhere using their ID. A security oriented system with prevention from data leaks too.Our project will help the doctors treat the patient better with the help of their medical reports. In our project every patient will have their own patient ID and their related data will be stored using the ID. Just in case a patient wants to switch hospital he can easy do so, as the report can be accessed from anywhere using his ID. Now this data will be used in a blockchain based architecture which can able to process the data with utmost patient's security and privacy at priority.

V. ARCHITECTURE

The proposed system consist majorly of three main parts or modules, They begin with user or patient who usually use these services, then they're always the vendor or clients who are in need of such solutions. The next major part of the application is the blockchain system which handles the information flow in decentralized manner leaving out the centralization and post this we have distributed ledger technology(DLT) which handles the logs and ledger system of the entire hospital management system blockchain technology and it's infrastructure.
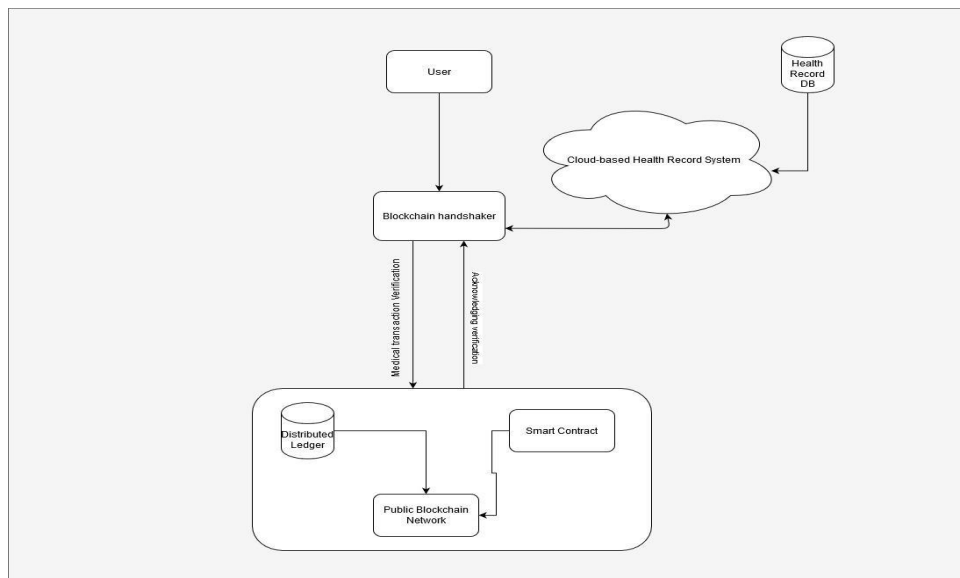
FIGURE 1. ARCHITECTURE DIAGRAM

VI. IMPLEMENTATION

The proposed system consist majority of three main modules, They start with user or patient who usually use these services, and then they are always the vendor or clients who are in need of such solutions. The next major part of the application is the blockchain system which handles the information flow in decentralized manner leaving out the centralization and post this we have distributed ledger technology(DLT) which handles the logs and ledger system of the entire hospital management system blockchain technology and it's infrastructure.

The user requests to access the medical records, then the blockchain handshaker method is initiated and the medical transaction verification and the acknowledgement of the verification is done.After this process, the smart contract is invoked and the public blockchain network sends an request .Finally, after all this process, the data will be retrieved securely from the cloud.

VII. CONCLUSION

The blockchain will be distributed among a number of computers rather than being stored in a single system. This makes it immune to hacks, thus maintaining its credibility. Since blockchain is immutable a block once added cannot be   removed. So this makes the system one of the secure systems to perform online biddings.

VIII. REFERENCES

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