A Secured Data Sharing Platform Using Blockchain and AI

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ABSTRACT: In this paper we propose a blockchain platform to ensure secured mechanism for exchange of ehealth data between a individuals, groups or organizations. Here we propose a counter part to the traditional data storage solutions by creating an interface which harnesses the true potential of decentralized blockchain system. This platform uses Artificial intelligence (AI) which play a major role which helps in decision making, access control and organizing data. This platform helps users to consult medical practitioners, pharmaceuticals, insurance companies, diagnostics all under one roof and also helps in retrieval and storage of data in an effective and efficient way

KEYWORDS: Artificial intelligence, blockchain, ehealth data

I. INTRODUCTION

Users anticipate instant, seamless data flows in today's society. Many have adopted or started using the technologies essential to guarantee the instantaneous information standards of their users. The health industry has never been in the limelight of development and has been using the same old techniques and methodologies. Old Mainframes like legacy systems are slow and generally vulnerable, with a patient's role low. While the data used to produce e-health records stays retained on centralized systems, these records have a high degree of instability. The probability that the data being tampered with is very high, and the faith in governing body is also required and on which the whole data cannot be leveraged upon. These are additional problems with centralized databases is that irrespective of whether the data is un-identified and subject to restricted access. In this paper, using the decentralized nature and distributed ledger of blockchain we create a platform where all the health services like doctors/medical practitioners, pharmacists, and all the individuals, groups, or organizations under one roof. The advantages of a decentralized system can be clearly seen in this proposed system. Artificial intelligence based secured computing solves the issues like un-identified data, access control of data and retrieval as well as organizing the data in an effective and efficient manner. AI plays a important role in managing resources and taking right decisions

II. METHODOLOGY

This paper is based on two major key components:1) data sharing based on blockchain technology which guarantees user/patient ownership. 2) secured computing based on artificial intelligence.

Blockchain and Data Sharing

Here for protecting the data we integrate blockchain security mechanism to private data center (PDC) owned by the respective instructions to enhance the security mechanism between trustless or untrusted entities. To make the proposed system possible, the first change to standardize the data representation using a uniform data representation (UDR) which helps data to be shared among the intuitions be easy especially between hospitals. Using UDR as standard makes understanding and representation of data easy. The second reform is standardizing the permissions to access data between entities by using uniform access control by implementing smart contracts. It is a program that is meant to perform, control, or document legally relevant actions as agreed upon in the contract which specifies the access control it can be what

kind of data can be retrieved or what kind of data can be accessed.Its role is to give access to users, groups or organizations to perform different type of operations on data like read, write and append etc. In addition, it provides a single platform for identifying and routing data through a standardized uniform data identifier (UDI). PDC is decentralized, which enables users to keep ownership of their own data. This results in data security and data leakage. Every entity (such as patient, institution, organization) has a PDC in which to access the data. All data about an entity kept in a PDC is also combined with other data in a DC, and both combined to create a PDC. Additionally, this data is computed and the results used to help maintain data security.

Secure Computing Based on AI

Data is essential to its user, To put it in simple terms, the medical data of a user that is saved in PDC may be retrieved and restructured to produce organized medical information, which is particularly useful for purchasers from hospitals, research centers, and software vendors.Information in internet is all kept in PDC, and therefore it is crucial to the entity that owns it that the information's security be strong. As the information is really an electronic copy of a thing in the actual world, its security is important. To prevent data from being compromised, SecNet has included an AI based secured computation element into to the operating support system in every PDC. Pursuing AI as a key capability of the PDC will pay big dividends in the future. There are several distinct sorts of machine learning methods. One kind is known as pattern matching; computer vision is another, and self-driving might be called another one. Now, there are several AI approaches that are being experimented with to apply to diverse data kinds. PDC is an AI operating platform, which brings together a variety of distinct AI components into a cohesive, intelligent system that includes a greater number of capabilities. The PDC AI's many features work together to form an intelligent system, and those functions work in tandem together in PDC.
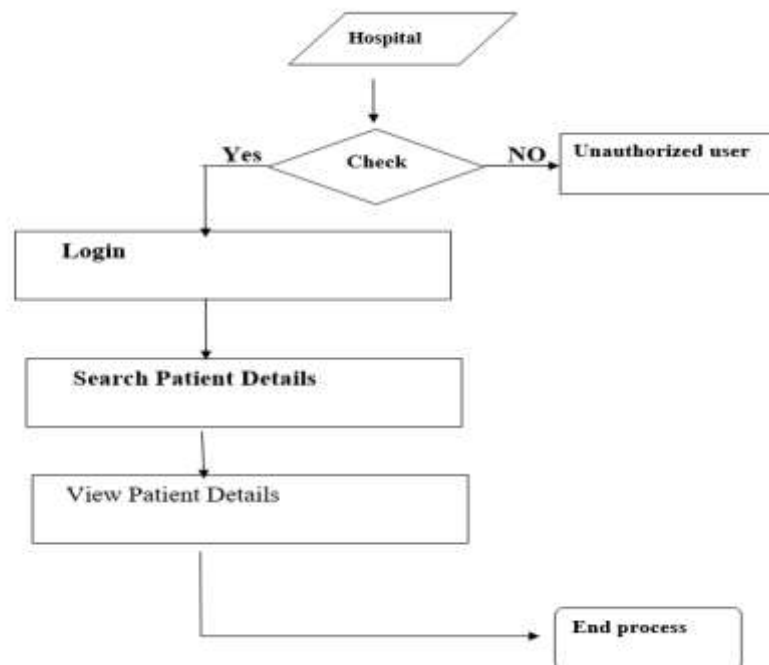
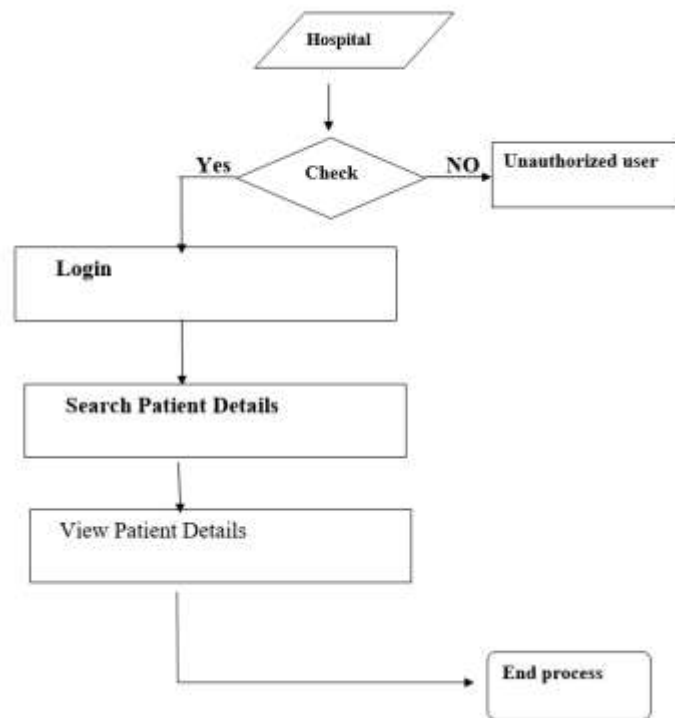## III. MODELING AND ANALYSIS

Figure1: Hospital Point of View

Figure2: Patient Point of View

IV. RESULTS AND DISCUSSION

V. CONCLUSION

The AI and blockchain industries will have to work together to stop the current practice of data misuse, and this collaboration between those industries is necessary to utilize AI with the assistance of blockchain in an environment that's trustworthy. a networked paradigm for securing data storage, sharing and secured computation as an alternative of communication.

SOME OF THE ADVANGES FROM THE ABOVE RESULTS

a) Increased security measures of storing and sharing Data
b)Fool-proof software
c)Diversifying the applications of blockchain and Ai

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