DISTRIBUTED APPLICATION FOR ORGAN DONATION

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Abstract - Organ donation is one of the most virtuous acts that requires transformation. This paper describes the proposed system which is an application which makes use of FIFO approach to choose an organ donor for each genuine person who requires the organ and if there's an exigency case, the precedence is given to that case. It uses Blockchain as its base Technology. Blockchain Technology is popular for its decentralized and distributed network which stores records that cannot be altered after being saved. The stability of Blockchain Technology provides the necessary security to the application. It uses electronic documents which are digitally endorsed by the users. It resolves the problem of authorizing the same user repeatedly.

Key Words: Blockchain, Smart contracts, FIFO rule, security, Decentralized, authorized person

1. INTRODUCTION

Blockchain provides an enhanced system of transparency, security and also decentralization. The practice of fraudulent products is increasing and is affecting the sales and profits of companies. Donation of organs will improve the health sector. There are a number of people who are keen to donate organs. The major problem pertinent to organ donation is the time delay in the provision of the organ due to multiple factors, therefore the number of waiting list of patients is increasing day by day. This paper aims at resolving this issue using blockchain which is a distributed database and dynamically manages such databases. It provides the donor a clear overview of the complete process.

1.1 Blockchain Technology:

The blockchain is the process of recording the transactions in the business network where these transactions are tracked and immutable.
Once the transactions are recorded in the ledger, they cannot be tampered. If there is an error in the transaction a new transaction is added to eliminate the error and the process is visible. The blocks in the blockchain are connected and form a chain like network where each block contains the information. The records are confidential and they are shared within the network for those who have the access.

1.2 Smart contracts:

Smart contracts are self-executed actions where the transactions are transparent and irreversible. These are digital transactions so ,no paperwork is required or available. Smart contracts eliminate the involvement of the third party so there is no delay time for execution. Records are encrypted, which makes the transaction hard to decode. The information cannot be altered because each record is connected to the previous ledger. Smart contracts do not have any specific code to execute or language to learn ,these are executed when the conditions are met.

2. LITERATURE SURVEY

The problem encountered by the organ donation organizations is the same around the globe, more patients on the waiting list than actual people who are willing to donate, and this gap is increasing as the years pass by. These systems are not up to date. These are not suitable to store the patient's details as they lack transparency. Also, they are slow, which is not at all tolerated during such serious situations. The current systems are not updated frequently. They are maintained with minimum-security requirements.

3. PROPOSED METHODOLOGY

The proposed system offers a method which is a secure procedure for donation of organs over a distributed platform. This is a web-application which integrates hospital administrators and receivers for donating the organs. The usage of the smart contracts avoids the third-party's involvement completely. This feature protects the details of the patient. Smart contracts play a very major role which endorses each and every transaction process of the organ without any unauthorized involvement. These smart contracts will be deployed on a blockchain-based decentralized platform, Ethereum. The transactions are transparent and the information is visible to authorized people. The details of the patient are collected into the smart contracts and are pushed into the block chain.

Fig -1: Architecture of the proposed model
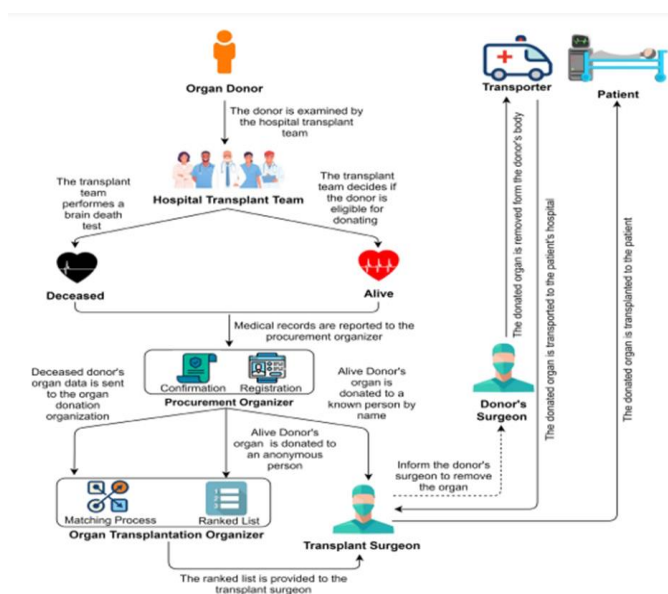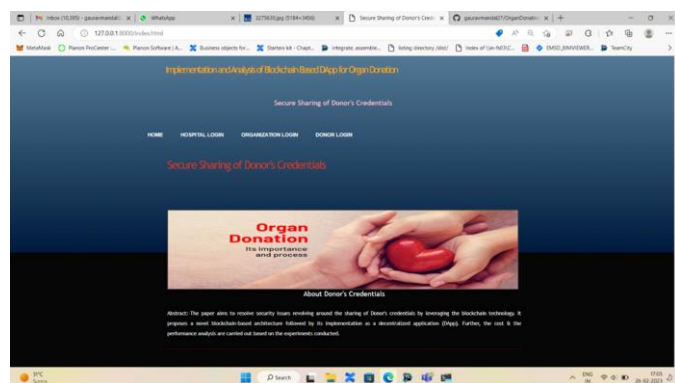

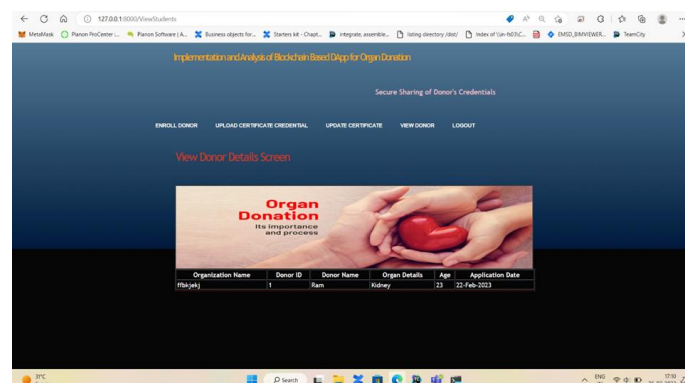## 4. RESULTS

Fig -2: Home page
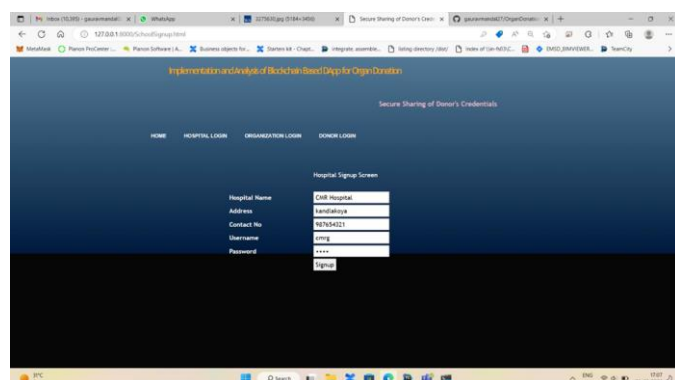

Fig -3: Donor details

Fig -4: Hospital login

5. CONCLUSION

The aim of this paper is to meet the Standards set by the health authorities, but with a distributed approach on the current systems which are being used, with the help of blockchain technology. So, we conclude that our proposed system has more security, and provides quick time response as compared to current systems. This project offers a much faster system with an improved level of scalability which improves the work.

6. ACKNOWLEDGEMENT

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