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FINGER PRINT DATA MANIPULATION IN HOSPITAL MANAGEMENT WITH BLOCKCHAIN MODEL

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ABSTRCT—*The Internet of Things is a computing concept that describes the idea of everyday physical object being connected to the internet and being able to identify themselves to other device. In this paper we will see how hospital and health care centre's uses Internet of Things .The Patient records would be stored into dedicated server and that server connected in network. The Data's stored into server by using Blockchain model. Which makes data more secure and robust. Every data stored in server along with patients fingerprint details. In BlockChain model data's stored indistributed manner i.e every nodes has the details of other nodes so no one can modify the information without proper authorization. All the other hospitalscan access the patient records by using patient fingerprint respectively. This helps doctors and hospitals give treatment effectively.*

1. INTRODUCTION

With the health care trade wanting to implement electronic health records, there's rampant optimism regarding however digitizing health records can produce huge efficiencies and considerably increase the standard of patient care. As additional and additional hospitals and health care systems migrate to computerised medical man order entry and electronic health records, and additional health info exchanges are engineered to coordinate care across networks, several are raising considerations regarding a way to effectively manage information integrity to make sure it's unbroken free from corruption, modification, or unauthorized access. The proliferation of health care electronic health records (EHRs) and therefore the transition (of informationof knowledgeof info) across health information exchanges (HIEs) open the door to data corruption, and as these systems become larger and additional complicated, vulnerabilities grow. In most different industries, information integrity is simply as necessary, however corruption errors will be corrected and mistakes fastened. this may mean the distinction between life and death at intervals the health care trade. one in every of the first considerations with maintaining information integrity is implementing a homogenous approach across the health info exchange to matching patients with their information. each physicians and patients need to trust and trust that information is complete, current, accurate, and secure. Escalating the complexness of health information exchange as additional networks are additional and additional information is fed into the system can solely necessitate a targeted effort by the whole trade to supply common standards that foster confidence information stays intact. the last word answer to maintaining end-to-end information integrity doesn't originate from one company however should be a collective and cost-efficient effort from all health care suppliers across the trade.

Biometric in health industry :

Health info exchange information integrity and quality care originates with correct patient identification. there's merely no different step in patient care that's a lot of vital at intervals the trendy health care construct than precise patient identification to make sure that not solely is that the right care delivered to the proper patient, however that medical records ar up thus far, correct and properly connected across systems.

2. EXTISTING SYSTEM:

- The web of Things permits objects to be detected and controlled remotely crosswise over existing system foundation
- The web of things is authorised by the foremost recent enhancements in RFID, good sensors and communication school

3. PROPOSED SYSTEM:

The Patient records would be hold on into dedicated server which server connected in network. The Data's hold on into server by victimization Blockchain model.that makes knowledge safer and strong. each knowledge hold on in server at the side of patients fingerprint details. All the opposite hospitals will access the patient records by victimization patient fingerprint severally.

EXISTING ADVANTAGE:

- In Existing System uses RFID to share details patients and this used only for a single hospital doctors. Some times it seems to mislead the patient records without patient permission
- There is specific storage method to store data in server

PROPOSED ADVANTAGE:

- This system uses GT511C3 fingerprint device which efficiently scan the fingerprint and send it to server
- For every access we needs patient fingerprint also it verifies hospital id for every data transaction
- Data's stored in Blockchain model which is more efficient and secure way to store data's

4. ALGORITHM:

Blockchain is also similar to a database which stores information, however the main difference is that the data is located in a network of personal computers called nodes where there is no central entity such as a government or bank controlling the data.Instead, all data is shared publicly although the contents of each data is only accessible to those with permission. Below is a diagram to illustrate how information is stored in distributed network compared to a centralised and decentralised network.The following algorithm for store data in server

```
varisValidNewBlock
= (newBlock,
previousBlock) => {
```

```
if (previousBlock.index + 1 !==
newBlock.index) {
        console.log('invalid index');

        return false;
    } else if (previousBlock.hash !==
newBlock.previousHash) {
        console.log('invalid
previoushash');
        return false;
    } else if
(calculateHashForBlock(newBlock)
!== newBlock.hash) {
        console.log('invalid hash: ' +
calculateHashForBlock(newBlock)
+ ' ' + newBlock.hash);
        return false;
    }
    return true;
};
```

5. LIST OF MODULES :

- Connect Device.
- Store Records(BlockChain).
- ID Generation.
- Authentication.
- Manage Records with OTP.

CONNECT DEVICE:

Connecting Device module process with finger print scanner(GT511C3) device. This device has separate protocol to communicate. In this protocol we have to send command 1,command 2, device Id, input parameter and check sum.The command 1 , command 2 and device Id is common for all scenarios we have make changes only on input parameter and the check sum. Check sum is addition of byte. The device request and response in the same order. In response if the output parameter is 0x30 means it indicates process done successfully or else 0x31 means this is error code.

The GT511C3 datasheet contains rest of the details to access the device.

STORED RECORDS:

Blockchains are secure by design and are an example of a distributed computing system.Decentralized consensus has therefore been achieved with a blockchain.This makes blockchains potentially suitable for the recording of events, medical records, and other records management activities, such as identity management, transaction processing, documenting provenance, food traceability or voting.

Hospital records are stored in distributed manner so hospitals having records of their patients and also other hospital patients for security purpose if any change happened in one hospital that wont affect other hospital records that would be updated after the confirmation of hospital management system.

ID GENARATION :

It generates ID to all the patients along with the finger print. This id is set as primary key and this would be shared with other hospitals. Whenever the fingerprint happens it convert to respected id of patient.

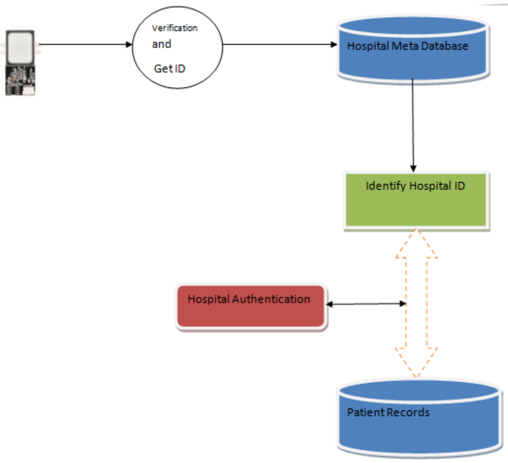
AUTHENTICATION :

In this authentication module hospitals authorized with their login credential's .patient record updates are done by the hospitals so the hospitals are verified authorized by OTP for the each transaction.

RECORD MANAGAMENT:

When the transaction of records to other hospitals they need hospital id for access details that will managed by the hospital id with transaction verification password.

6. ARCHITECTURE DIAGRAM :



7. CONCLUTION:

In this project we stored and retrieved patient records using biometric authentication system. Hospitals can share their patient records with the permission patients authentication more over all the should be monitored by the block chain model system. According to our concept we effectively done the project and we proved which is better than existing data storage system. Also our system helps for organ donation system.

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