Health Record Management System

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Use case:

- The patients data is crucial information and data breaching and tempering are very common in current storing system.
- In the pen–paper or current centralized systems, it may be possible to tempering the record and miss use the information by the unauthorized person.
- Use of the blockchain in the health industry can provide the better security and privacy to store the data.
- The decentralization, immutability, and traceability of the blockchain technology can enhance the healthcare data sharing and storing method.

Proposed Model (Solution):

- The proposed model works on the ethereum blockchain. The proposed model provide the security and privacy to store and transmit the patient’s data.
- Patients can see who is using their data and which doctor update their health records.
- Doctors can analyse the patient past health record with the permission of patient and prescribes the medicine based on the record and conditions.
- The patient's’ record is stored on the blockchain and IPFS. and the record will update by the doctor if patient get prescription in the future.

Why Ethereum?:

Transparency

Documents are encrypted and stored on a public Ledger

Backup

Documents are replicated severals times

Peer-to-Peer

No intermediate between doctor and patient for data transmission

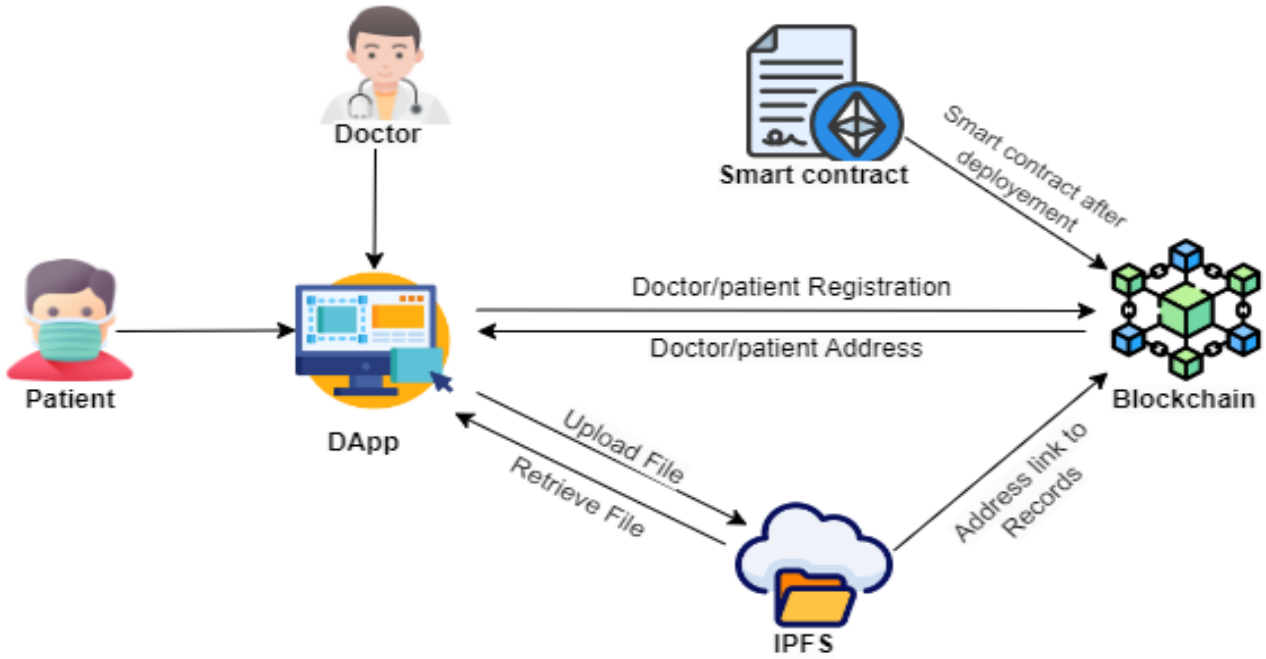
Functionality

Ethereum provide the wide range the functionality .

Network

The benefit of ethereum are well established tested and large network. Which is rapidly growing.

Workflow Diagram:



Workflow:

- Doctor can registered yourself using the Dapp with the metamask address.
- Doctor can registered for the new patients.
- After the successful registration doctor/patient will get registered address stored on the blockchain.
- The record file of the patient stores on the IPFS and the Address linked with that record stores on the blockchain.
- Doctor and patient can download the record using the linked address.
- The smart contracts of the model handle the condition of registration of the new doctors and patients. Smart contract checks the authenticity of the person to access the record stored on the blockchain.
- Blockchain stored the details of the doctors, it is transparent to everyone. Blockchain is also used to update the information of doctor and patient.

SMART ASSETS AND PARTICIPANTS:

IPFS

IPFS is used to store the large sized record of the patient. The doctor and patients can access the record from IPFS.

Ethereum Blockchain

The Transaction details and address of record of the users are stored on the ethereum blockchain and updation of the record details.

Patient

One participant is patient. Patient can ask doctor for prescription and provide the access to doctor for her/his medical history.

Doctor

Doctor can prescribe the patient based the past medical history and analysis stored on the blockchain and also update the patient data after treatment.

FUTURE ENHANCEMENTS:

- **Deployment on large scale**: The model can enhance to deploy on the large scale that can handle a large network and data robustly.

- **More functionalities**: The current model has the limited functionalities that can be enhance in future. More functionalities such as medical store availabilities, personal nurse assistance providence record etc.
- **Inbuilt calling function:** This function can be added in future for better appointment experience.
- **Easy banking service**: The model does not have banking service for payment which can be added.

Thank You!

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