

Medical Application on Blockchain

8th Sem Final Project

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DOCTEL

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Introduction



Medical Applications should be more tied to the upcoming technologies.

Leverage the full potential of Blockchain in the medical field.

User-friendly

Solve user's problems



Literature Survey

S. No.	Authors & Title of Research Paper	Published	Demerits
1.	D. C. Nguyen, P. N. Pathirana, M. Ding, and A. Seneviratne, "Blockchain for secure ehrs sharing of mobile cloud-based e-health systems"	2019	<ul style="list-style-type: none">• Ethereum mainnet usage• Storing data on Blockchain• Unique Identification not present
2.	B. Shen, J. Guo, and Y. Yang, "Medchain: Efficient healthcare data sharing via blockchain"	2019	<ul style="list-style-type: none">• Manual Sharing by patient• Scalability
3.	M. A. Uddin, A. Stranieri, I. Gondal, and V. Balasubramanian, "A patient agent to manage blockchains for remote patient monitoring"	2018	<ul style="list-style-type: none">• Single miner, mining all blocks• Choosing miner• Private blockchain compromised
4.	F. Jamil, S. Ahmad, N. Iqbal, and D.-H. Kim, "Towards a remote monitoring of patient vital signs based on iot-based blockchain integrity management platforms in smart hospitals"	2020	<ul style="list-style-type: none">• Scalability• Storage issues• Unique Identification not present



Problems to solve

1

Some medical records are lost, mutated & tampered.

2

Some hospitals show wrong results and charge a lot of money to treat it.

3

Health records are not connected to a unique identification no. across the whole country and each hospital is maintaining a different set of records that needs to be unified.

4

The history of a patients' data when trying to retrieve at a later stage takes a lot of time and not everything shows up.



Project Objective

1

Medical records cannot be mutated, deleted, or tampered with anymore as the database is getting decentralized with the help of blockchain technology.

2

Each health record is connected to a user's unique identification number or Aadhar no. and we can get a unified & decentralized database all across the country.

3

Nobody at a later stage can show different results as once written on blockchain nothing can be changed.

4

Easily all the health records of a patient can be retrieved by searching by his aadhar no.

Technologies Implemented



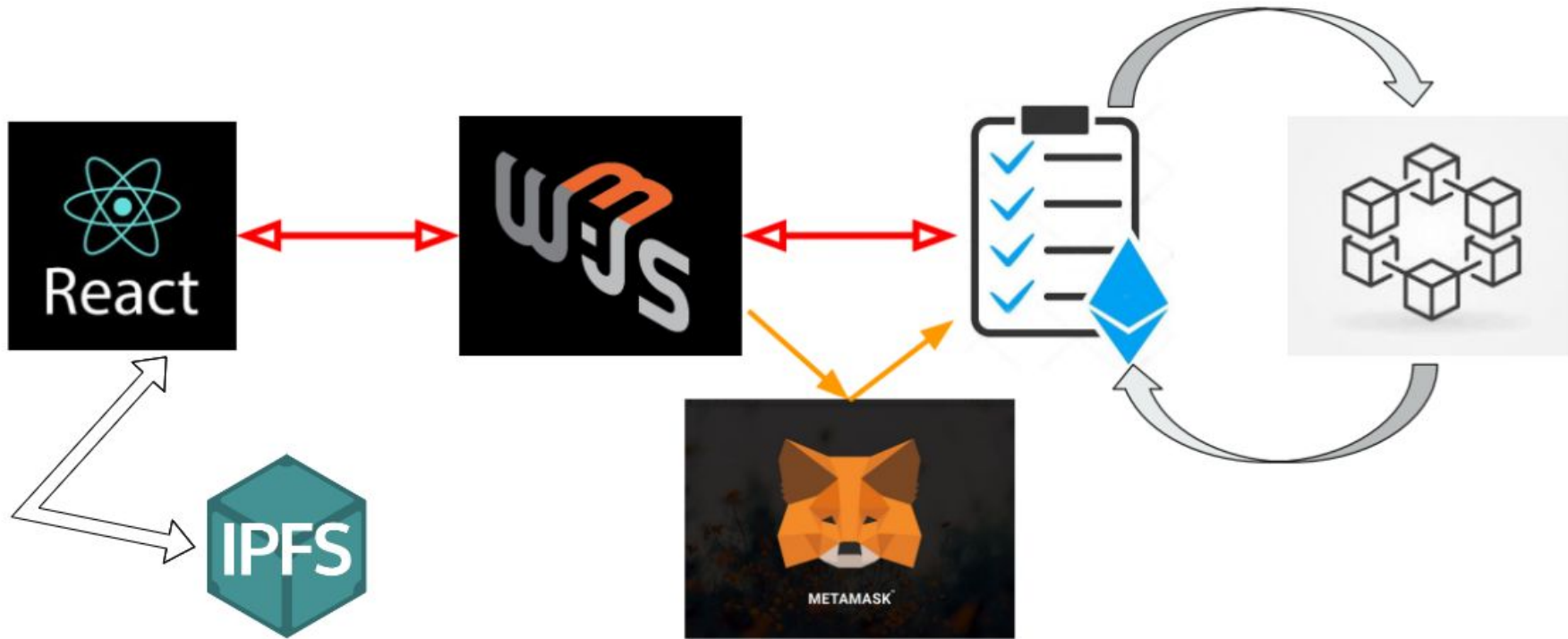
- Blockchain
- Inter-Planetary File System
- Web-Dev

DOCTEL

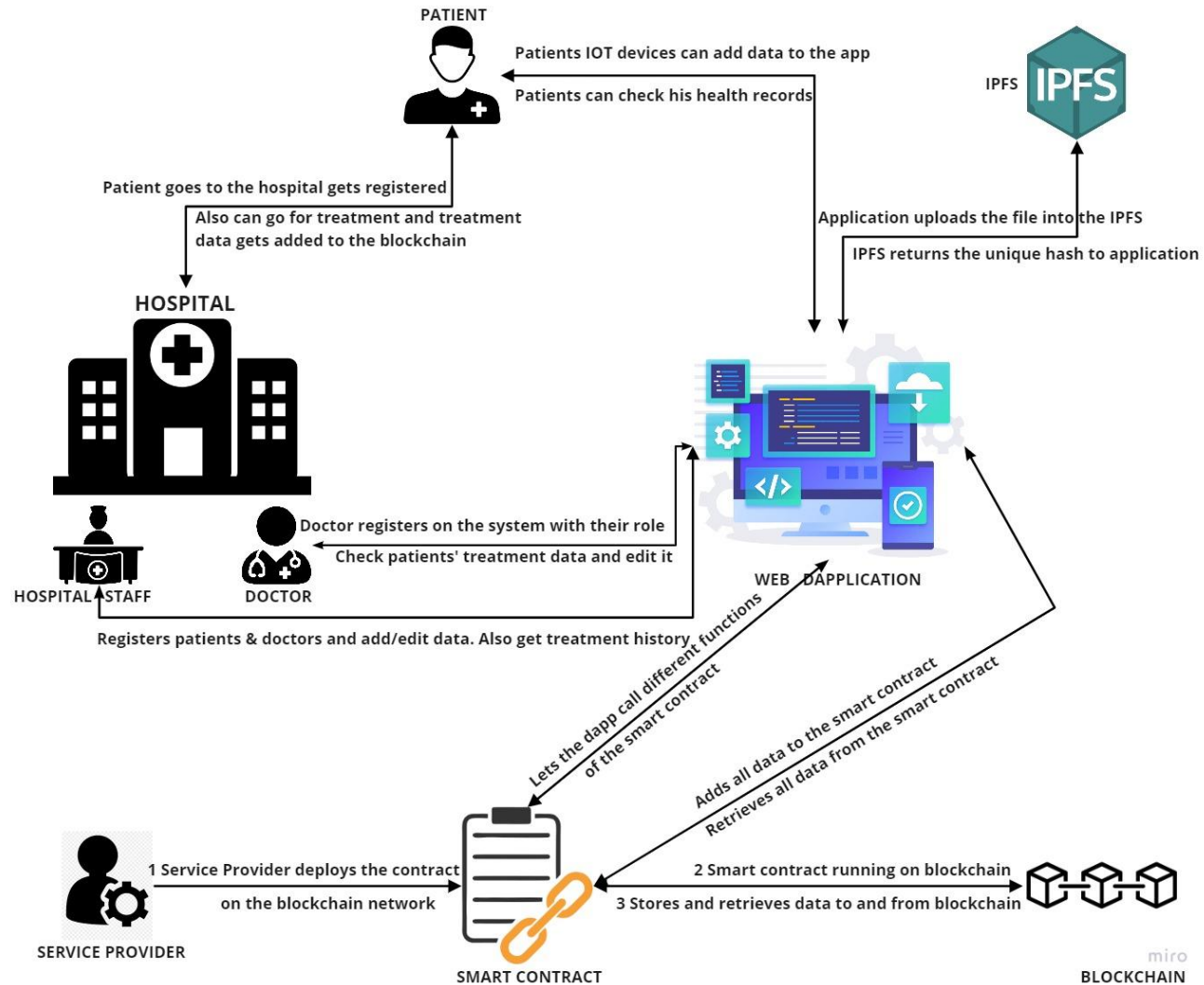


A large-scale health data application based on blockchain technology, where health data are stored with different levels of access controls and privacy policies to give the best benefits. Major roles: healthcare admins, doctors and patients.

Process Flow - Tech wise



Process Flow Application



A short horizontal bar with a teal segment on the left and an orange segment on the right.


DEMO

Hosted at: <https://master.doaswn5telp2q.amplifyapp.com/>


Github URL: <https://github.com/kole-swapnil/DocTel>



Why this ~~Application~~ Dapplication

- 
- All data addition and updation are securely done on blockchain.
 - Data becomes Immutable and Decentralized.
 - Details of Transactions stays forever and can be tracked at any point of time.
 - No need to trust as smart contract automates it.
 - Government can look into details

RESULTS

- 
- Medical records cannot be mutated, deleted, or tampered with anymore as the database is getting decentralized with the help of blockchain technology.
 - Each health record is connected to a user's unique identification number or Aadhar no. and we can get a unified & decentralized database all across the country.
 - Nobody at a later stage can show different results as once written on blockchain nothing can be changed.
 - Easily all the health records of a patient can be retrieved by searching by his aadhar no.
 - Reliable
 - Robust
 - Simple to use
 - Scalable
 - Decentralized

FUTURE SCOPE



- UI/UX improvement
- Integration with other applications
- Integration with IoT
- Integration with AI
- Connecting more hardware devices
- Automation



Thank you.

