TEAM: SCRIPT BOTS
JOSEPH THOMAS THACHIL
AKHILA DIVAKAR YARAGOPPA

patShare.bc

A Secure and Private Patient-Centric Health Information Exchange Framework Using Blockchain Technology

Table of Contents

01 Problem

02 Patient Persona

03 Solution

04 Limitations and Future

THIS IS OUR MAIN MISSION.

To provide a highly secure patient-centered information exchange system to maintain health information privacy

Time

Passing request to medical providers for patient info is currently a long process taking a few weeks.

Security and Privacy

The data may be authorised by intermediate providers and the past history of the patient may be made public.

Data Inconsistency

Data inconsistency may appear between remote provider's EHR data and recipient data

PERSONA

Stayed in Kochi from 2010-2020. Has history of substance abuse and cardio vascular disease

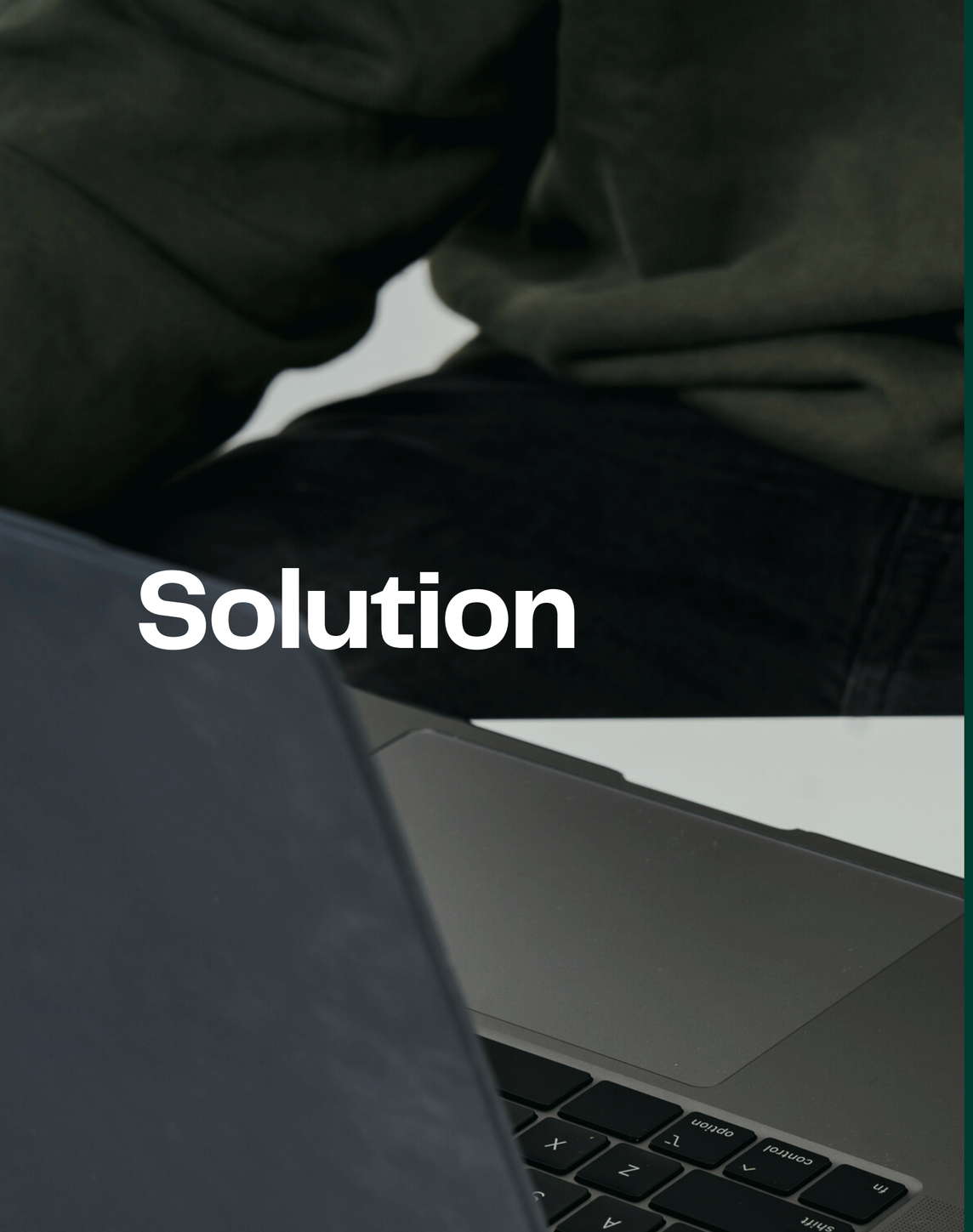
Moved to Gurgaon

Fell sick. Had to go to hospital.

Mentions cardio vascular disease, but not history of substance abuse fearing shame.

Current process to gather info will take time. Medical Providers may get access to data.

Patient scared about data leaks and privacy



Solution

BLOCKCHAIN SOLUTION : PRIVATE(PERMISSIONED) ETHEREUM BLOCKCHAIN

Problems solved by Blockchain

1. Difficulty of timely matching – Public/Private key pairs
2. Data Inconsistency – Immutability feature
3. Locate relevant facilities – Smart contract
4. Security and Privacy – Peer to Peer network

Limitations

- Setup and initial infrastructure cost
- Dependence of model on blockchain node properties
- Need for patients to give blockchain node for IoT data
- Need to agree on interoperability standards
- Scalability Constraints

Future Work

- Understand interdependence of Ethereum and HyperLedger
- Credit mechanisms in Smart Contracts for patients
- Credit mechanisms for healthcare facilities
- Solve scalability issue by re-engineering time and resource consuming mining process
- Add AI component to blockchain adapters for analysing log files

Why patShare.bc

- Two level authentication to minimise data breach problem
- Better visualisation of interactions through blockchain adapters
- Hashing mechanism for data consistency
- Personalised data segmentation
- Touchpoint selection
- Large scale simulation to evaluate scalability

THANK YOU