Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: Govt of Himachal Pradesh

PS Code: SIH1383

Problem Statement Title: Optimizing Doctor Availability and Appointment Allocation in Hospitals through Digital Technology and AI Integration

Team Name: The Silent Coders

Team Leader Name: Sagar Giri

Institute Code (AISHE):

Institute Name: Netaji Subhas University of Technology

Theme Name: MedTech / BioTech / HealthTech

Team Member Details

Team Leader Name: Sagar Giri

Branch (Btech/Mtech/PhD etc): Btech | Stream (ECE, CSE etc): CSE | Year (I,II,III,IV): IV

Team Member 1 Name: Tarun Singh Tanwar

Branch (Btech/Mtech/PhD etc): Btech | Stream (ECE, CSE etc): CSE | Year (I,II,III,IV): IV

Team Member 2 Name: Aayush

Branch (Btech/Mtech/PhD etc): Btech | Stream (ECE, CSE etc): CSE | Year (I,II,III,IV): IV

Team Member 3 Name: Sahil Gupta

Branch (Btech/Mtech/PhD etc): Btech | Stream (ECE, CSE etc): CSE | Year (I,II,III,IV): IV

Team Member 4 Name: Swati Singh

Branch (Btech/Mtech/PhD etc): Btech | Stream (ECE, CSE etc): CSE | Year (I,II,III,IV): IV

Team Member 5 Name: Sania Gupta

Branch (Btech/Mtech/PhD etc): Btech | Stream (ECE, CSE etc): CSE | Year (I,II,III,IV): II

Team Mentor 1 Name: Type Your Name Here

Category (Academic/Industry): | Expertise (AI/ML/Blockchain etc): | Domain Experience (in years):

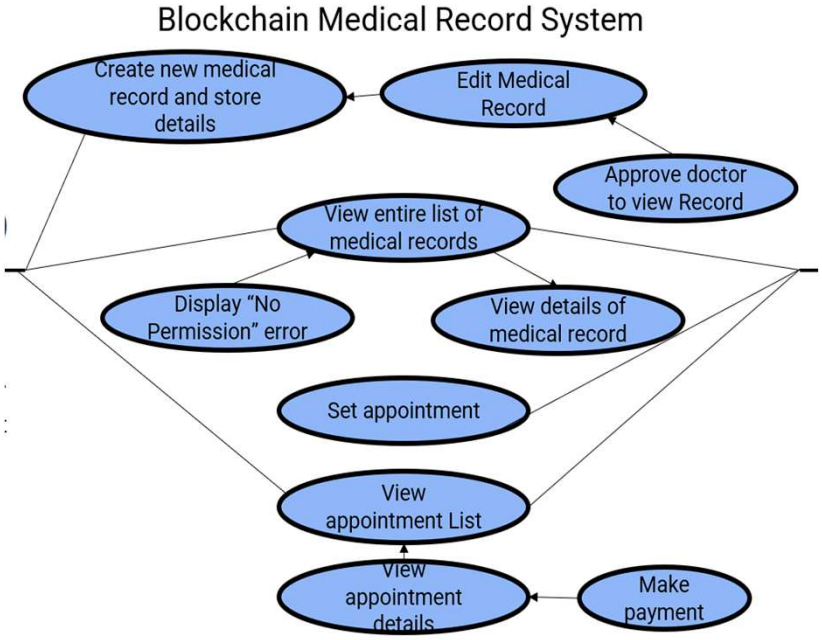
Team Mentor 2 Name: Type Your Name Here

Category (Academic/Industry): | Expertise (AI/ML/Blockchain etc): | Domain Experience (in years):

Idea/Approach Details

Describe your idea/Solution/Prototype here:

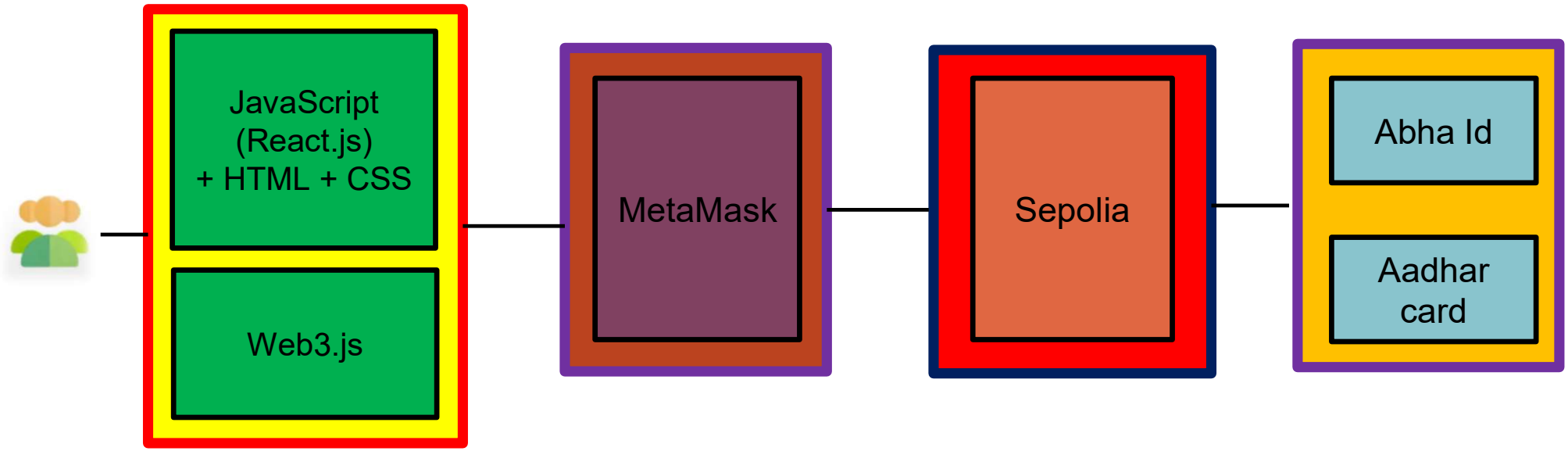
- The idea is to leverage blockchain and AI technology to develop a decentralized application (DApp) aimed at addressing critical challenges within the healthcare and medical record systems. This DApp seeks to revolutionize the way healthcare data is stored, managed, and shared, with a primary focus on improving security, privacy, interoperability, and transparency.



Describe your Technology stack here:

- Frontend : HTML, CSS, React.JS, JavaScript
- Backend : Truffle, Blockchain, Solidity, Infura
- Blockchain Used : Ethereum
- Wallet : Metamask

BLOCK DIAGRAM :-



ABHA ID : It stands for Ayushman Bharat Health Account ID. It is a 14-digit unique identification number that is issued by the Government of India to all citizens of India.

Idea/Approach Details

Describe your Use Cases here

- Secure Electronic Health Records (EHRs): The system provides a secure and tamper-proof repository for electronic health records, ensuring that sensitive patient information is protected against unauthorized access or alterations.
- Patient Portals: Patients can access their health records through user-friendly portals, promoting healthcare transparency and encouraging them to take an active role in their well-being.
- Doctor-Patient Collaboration: Doctors can access patient records securely, allowing for more informed diagnoses and treatment decisions, while patients can actively participate in their healthcare journey.

Describe your Dependencies / Show stopper here

- Dependencies :

  Patient
  Doctor
  Indian Medical Registry Search
  Android and IOS Users
  Cloud Service

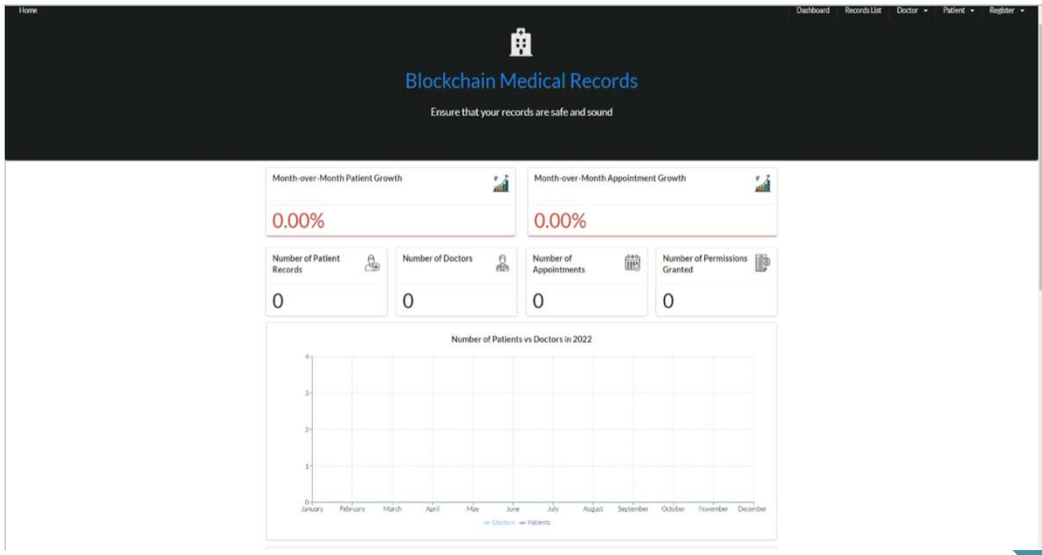
- Show stopper:

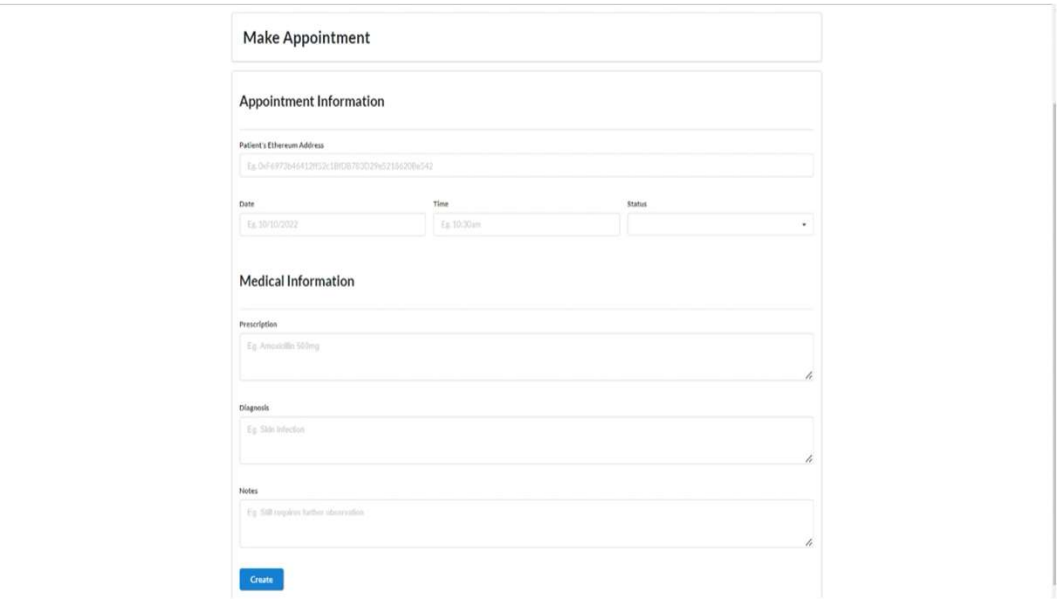
  Lack of Patients
  Lack of Doctor
  Lack of Android and IOS Users
  Indian Medical Registry Search Site
  Unavailability

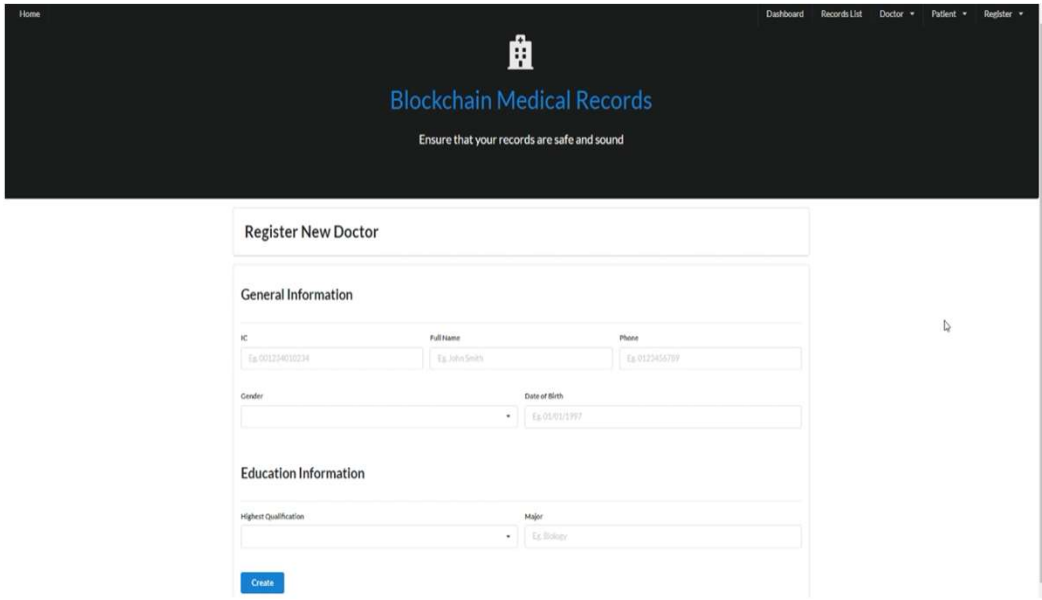
Features

- Integration with ABHA and Aadhaar Systems: Successful integration with the ABHA and Aadhaar card systems is essential. This may require collaboration with government authorities responsible for these systems.
- Data Standardization: Integrating patient data from various sources requires data standardization. Cooperation with healthcare providers and institutions to adhere to standardized data formats is necessary.
- Regulatory Compliance: Compliance with healthcare data regulations (e.g., HIPAA in the United States) is critical. Ensuring that the system complies with all relevant regulations may require legal expertise and coordination with regulatory bodies.
- Emergency Access: During emergencies, authorized healthcare professionals can quickly access essential patient information. This can be life-saving in critical situations.
- Patient Trust: Building and maintaining trust among patients that their data is secure and private is a critical dependency. Any breach of trust could lead to patient reluctance to use the system.
- Immutable Patient Records: Patient records are stored on the blockchain, making them tamper-proof and immutable.


Home
Dashboard
Records List
Doctor
Patient
Register
Blockchain Medical Record System
Ensure that your records are safe and sound
Get Started


Home
Dashboard
Records List
Doctor
Patient
Register
Blockchain Medical Records
Ensure that your records are safe and sound
Month-over-Month Patient Growth
0.00%
Month-over-Month Appointment Growth
0.00%
Number of Patient Records
0
Number of Doctors
0
Number of Appointments
0
Number of Permissions Granted
0
Number of Patients vs Doctors in 2022
January
February
March
April
May
June
July
August
September
October
November
December


Make Appointment
Appointment Information
Patient's Ethereum Address
Date
Time
Status
Medical Information
Prescription
Diagnosis
Notes
Create


Home
Dashboard
Records List
Doctor
Patient
Register
Blockchain Medical Records
Ensure that your records are safe and sound
Register New Doctor
General Information
IC
Full Name
Phone
Gender
Date of Birth
Education Information
Highest Qualification
Major
Create

Future Scope

1. **Enhanced Data Security and Privacy**:

   Continuously improving the security and privacy features of the blockchain infrastructure is crucial. This includes exploring advanced encryption techniques, multi-factor authentication, and potentially incorporating advanced privacy-preserving technologies like zero knowledge proofs.

2. **Blockchain Scalability**:

   As the system grows and more healthcare entities participate, scalability will become a concern. Exploring solutions such as sharding or side chains to handle increased data loads will be important.

3. **Smart Contracts**:

   Implementing smart contracts can automate various aspects of healthcare processes. For example, you can create smart contracts for insurance claims, appointment scheduling, or billing, which can streamline operations.

THANK YOU