SMART INDIA HACKATHON 2022

Basic Details of the Team and Problem Statement

Problem Statement Title: Hosting a blockchain code on to a cloud network in order to create a prototype app in the Healthcare sector

Theme Name: MedTech / BioTech / HealthTech

Team Name: GODRIC GRYFFINDOR

Team Leader Name: SHASHANK SHEKHAR

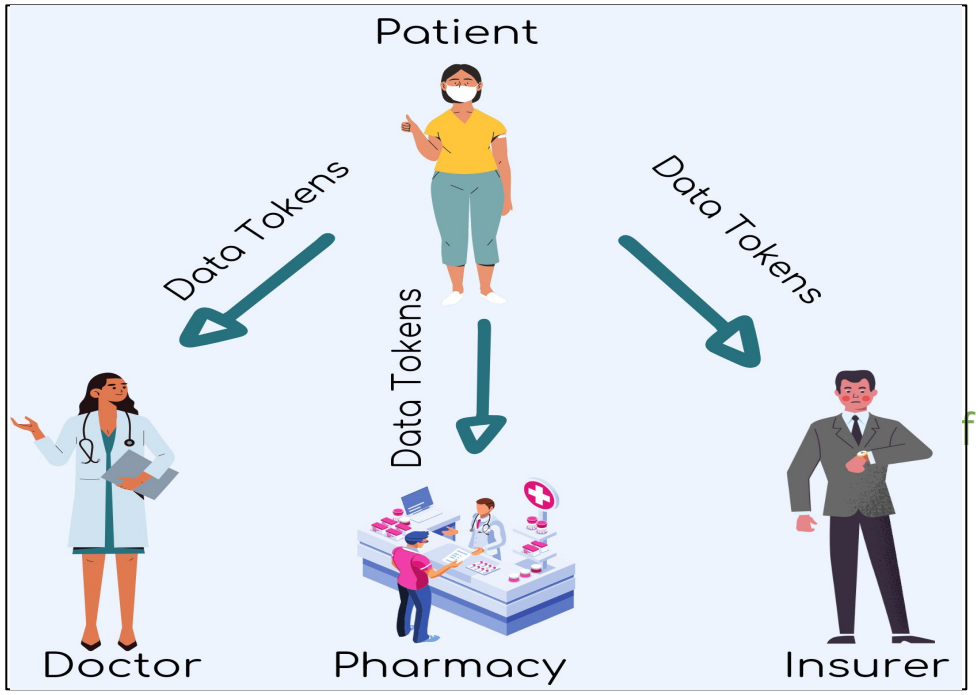
School Code: 64020

School Name: KENDRIYA VIDYALAYA BULANDSHAHR

Idea/Approach Details

Describe your idea/Solution/Prototype here:

- Our system we will use three keys concept **private key public key and symmetric key,** the private key will be saved at client end , the public key will be saved on cloud database ,the symmetric key will be encrypted with the public key and stored in the Database .
- Physician Or Lab Technicians needs to provide the private key after providing the private key the system will retrieve the encrypted symmetric from Cloud Database then it will be **decrypted with the private key** of the Patient and when this will generate the symmetric key then the symmetric key will be encrypted with the public key of the require physician or lab technician and will be stored in the Cloud Database ,
- The process began when a physician document the necessary medical information for the patient then the physician will provide his or her private key and after that the documented medical information will be converted into PDF document by the back end node Js after that among DB the encrypted symmetric key will be retrieved and then will be decrypted by the physician private key this will result a symmetric key which will be used to encrypt the PDF converted file and after that the encrypted file will be stored on the **Interplanetary Files System** the **InterPlanetary Files System** will generate a Content ID which will be then stored as a block or and the block as a transaction in the blockchain viewing on each are the patient would have to provide his or her private key after that in the blockchain,
- We'd have to query the entire electronic health record for the specified patient and then we will retrieve the entire Content ID of each sort electronic health record after that in order to view the electronic health record we would have to get the interplanetary system Content ID from the ipfs network then the files will be retrieved in an encrypted form from the **InterPlanetary Files system** network and so in order to decrypt it and view it the patient would have to provide his private key or her private key and then decrypt it after the successful decryption the electronic health record will be displayed for the patient successful

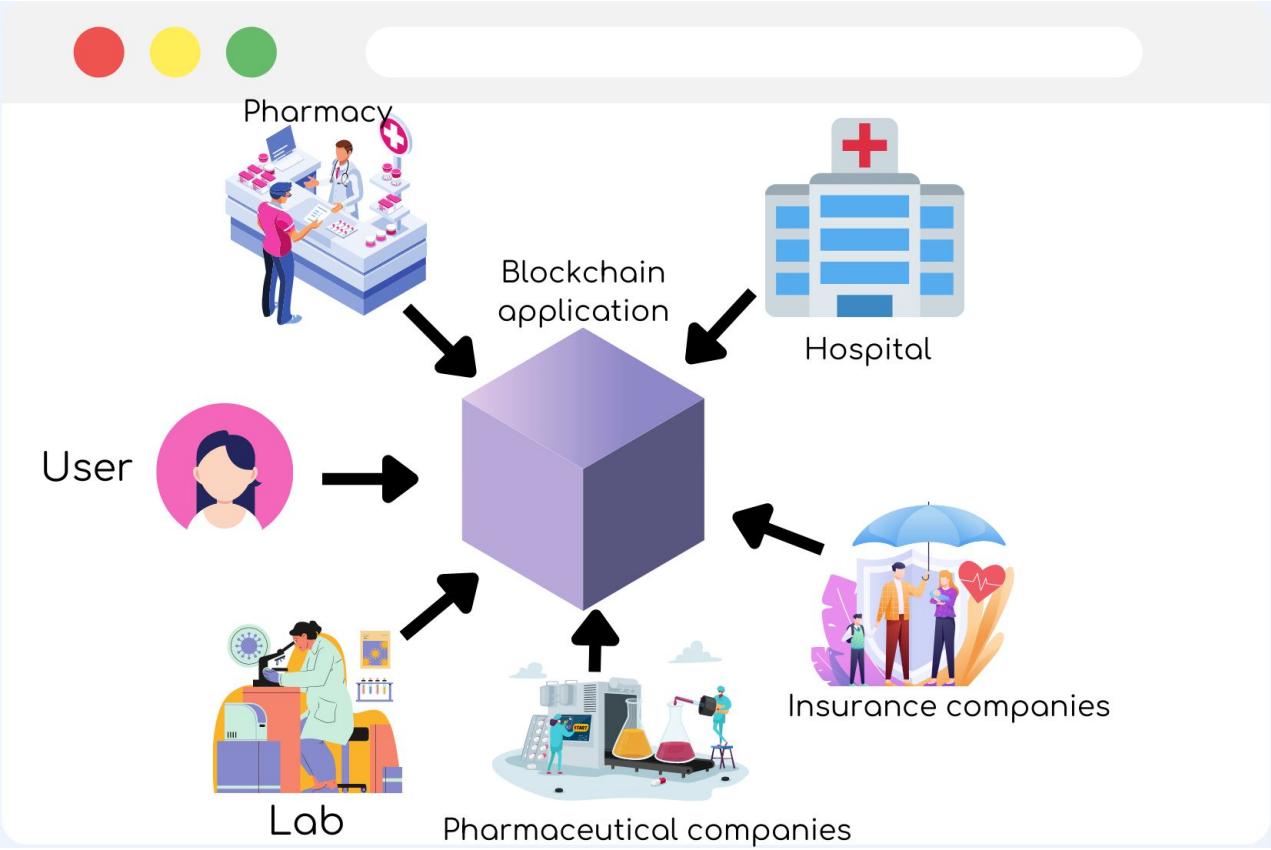


Describe your Technology stack here:

- Use an off-chain solution to store EHR(electronic health records) file
- Identifier location of EHR is one store in the block chain
- use proper encryption to ensure data is accused only by authorised people
- We propose to use IPFS system as the chain of solution

Idea/Approach Details

Describe your Use Cases here



Describe your Dependencies / Show stopper here

1. React js ^18.1.0
2. Node js^16.14.2
3. Ganache^7.1.0
4. Truffle^ 5.5.12
5. Hardhat^2.9.3
6. ethers.js ^5.6.4,
7. Web3js^ 1.7.3
8. Solidity ^0.8.x
9. Mongodb and many more

SHOW STOPPER:-

1. Supply chain transparency
2. Patient-centric electronic health records
3. Smart contracts for insurance and supply chain settlements
4. Medical staff credential verification
5. IoT security for remote monitoring
6. Drug supply chain
7. Availibilty of data world wide

Team Member Details

Team Leader Name: Type Your Name Here :Shashank Shekhar

Class (6th to 12th): 12 Stream* (Arts/Science/Commerce etc): Science Age (in number): 17 Gender (M/F): M

Team Member 1 Name: Type Your Name Here: Shubham

Class (6th to 12th): 12 Stream* (Arts/Science/Commerce etc): Science Age (in number): 17 Gender (M/F): M

Team Member 2 Name: Type Your Name Here : Prasoon Sharma

Class (6th to 12th): 12 Stream* (Arts/Science/Commerce etc): Science Age (in number): 17 Gender (M/F): M

Team Mentor 1 Name: Type Your Name Here: Jaskaran singh

Category (Academic/Industry/Parents): Academic Expertise (AI/ML/Blockchain etc): Others Domain Experience (in years): 1

Team Mentor 2 Name: Type Your Name Here : Ravi Kumar Tewari

Category (Academic/Industry/Parents): Academic Expertise (AI/ML/Blockchain etc): ML Domain Experience (in years): 1

*Stream is only for class 11th and 12th Students. For students below 11th Class, they can write NA.