

IMPLEMENTATION OF SMART CONTRACT:

The health care supply chain is a complex system that involves obtaining resources, managing supplies, and delivering goods and services to patients across multiple teams, stakeholders, and geographical boundaries. With such a complex structure, the healthcare supply chain is vulnerable to fraud, inaccurate data, and lack of transparency. To address these issues, the health care supply chain needs an end-to-end decentralized track-and-trace system. Most centralized systems risk drug and data safety.

One solution to this problem is the implementation of block chain technology. Block chain technology provides a secure and transparent way to track and trace drugs in the health care supply chain. Smart contracts can be used to automate agreement execution so all parties know the outcome instantly, without an intermediary or time loss. This ensures that all parties involved in the supply chain have access to the same information and can make informed decisions.

It presents an Ethereum block chain-based solution for a health care supply chain track-and-trace mechanism that uses smart contracts and data immutability. Hash functions store data in a public distributed ledger. This protects and discloses data. The proposed system tracks goods' histories (medicine). The average gas cost for all accounts is 18,027.2. Overall, log gas costs 48,118.6 to buy medicine, gas costs 229,607.5, and to log out 14,275.

It presents an Ethereum block chain-based approach leveraging smart contracts and decentralized off-chain storage for efficient product traceability in the health care supply chain.

Thus, block chain technology can be used to create a secure and transparent drug trace ability system in the health care supply chain.

Implementing smart contracts in drug traceability on the block chain is a transformative approach to ensuring the safety and authenticity of pharmaceutical products. Smart contracts automate and secure various aspects of the drug supply chain, from manufacturing and distribution to prescription and dispensing. Each step in the process is recorded on the block chain, providing an immutable and transparent ledger. This ensures that drugs can be traced back to their source, helping to prevent counterfeit medications from entering the market. Additionally, smart contracts can facilitate real-time verification, reducing the risk of drug recalls, enhancing patient safety, and improving compliance with regulatory standards, ultimately revolutionizing pharmaceutical trace ability and safety.

A smart contract in drug traceability on the block chain is a self-executing digital agreement designed to enhance the security and transparency of pharmaceutical supply chains. These contracts encode and automate the tracking and verification of pharmaceutical products at each stage of the supply chain. By recording crucial data on the block chain, such as manufacturing details, shipping, and distribution, smart contracts ensure a tamper-resistant and immutable ledger. This empowers stakeholders to verify the authenticity and safety of drugs, preventing counterfeits from entering the market. Smart contract-based drug traceability thus safeguards patient health, streamlines compliance with regulatory requirements, and establishes trust among all participants in the pharmaceutical industry.

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Import favorites | Acer | Gmail | YouTube | Maps | News | Translate | Dashboard | Tinker...

DEPLOY & RUN TRANSACTIONS ✓ >

ENVIRONMENT

Injected Provider - MetaMask

Main (1) network

ACCOUNT

0x7Ab...D562F (0 ether)

GAS LIMIT

3000000

VALUE

0 Wei

CONTRACT

evm version: paris

At Address 0x7Ab3F242E762f4611A1404f

Transactions recorded 5

Deployed Contracts

I ACT AT 0x7AB_D562F (BLOCKCH

DRUGCONTRACT AT 0x7AB_D562

```
1 {
2   "accounts": {
3     "account{-1}": "0x7ab3f242e762f4611a1404e5a9e9d6f93d9d562f"
4   },
5   "linkReferences": {},
6   "transactions": [
7     {
8       "timestamp": 1698060357082,
9       "record": {
10        "value": "0",
11        "inputs": "()",
12        "parameters": [],
13        "name": "",
14        "type": "constructor",
15        "abi": "0x2c11bc022352be668ed5c6117fbfecfe82881fa82d391546dcf0247e2c2540c3",
16        "contractName": "DrugContract",
17        "bytecode": "608060405234801561001057600080fd5b50336000806101000a81548173ffffffffffffffffffffffffffffffffffffffff",
18        "linkReferences": {},
19        "from": "account{-1}"
20      }
21    },
22    {
23      "abi": {
24        "0x2c11bc022352be668ed5c6117fbfecfe82881fa82d391546dcf0247e2c2540c3": [
25          {
26            "inputs": [],
27            "stateMutability": "nonpayable",
28            "type": "constructor"
29          }
30        ]
31      }
32    }
33  ]
34 }
```

creation of DrugContract pending...

28°C Partly cloudy

Search

ENG IN 23-10-2023

PASTE THE NEW CONTRACT ADDRESS:

File Edit Selection View Go Run Terminal Help

SEARCH

Search

Replace

You have not opened or specified a folder. Only open files are currently searched - Open Folder

JS connector.js X settings.json

C:\> Users\GOKUL> OneDrive> Desktop> Drug-Tracking> drug-tracking> src> Page> JS connector.js > ...

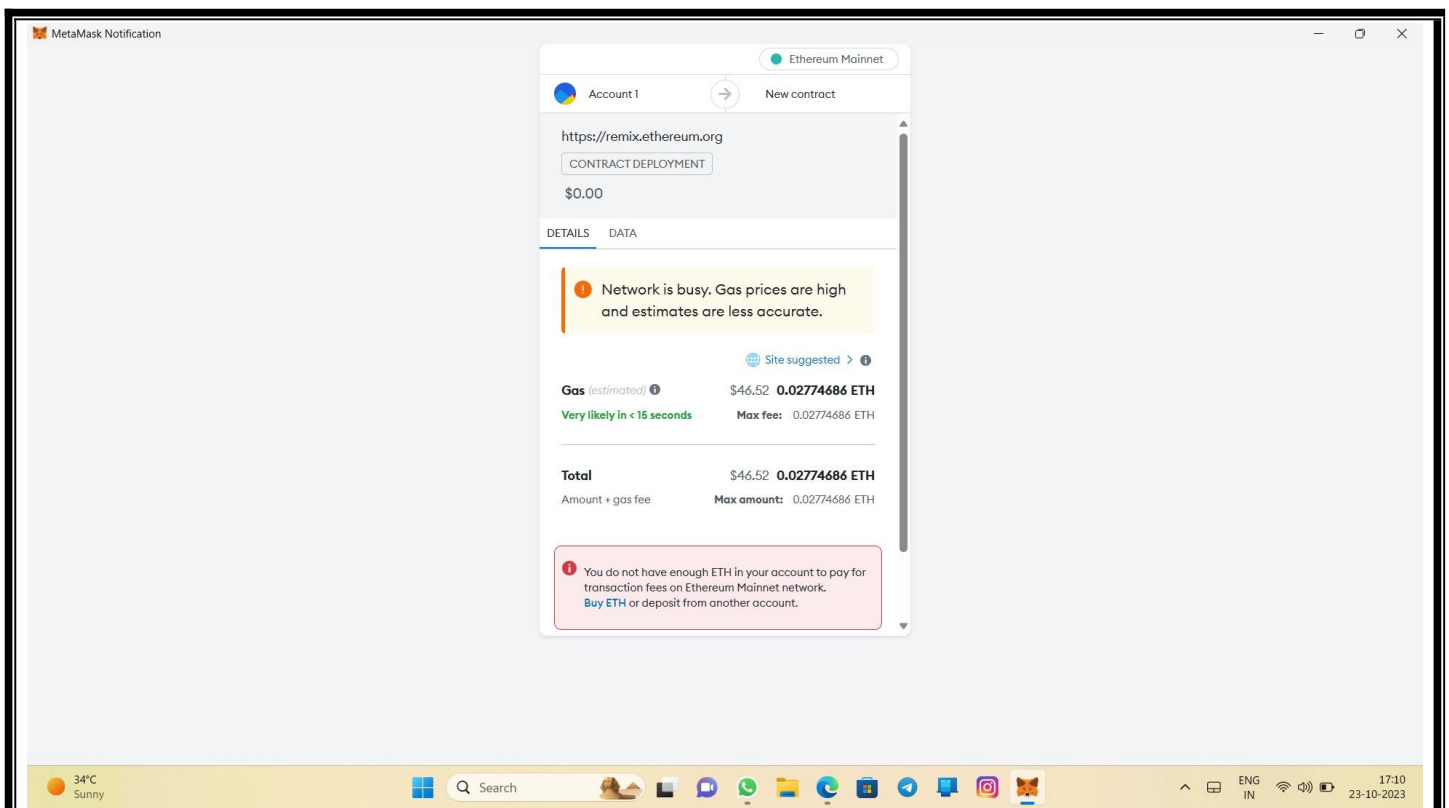
```
188 }
189 ],
190 "stateMutability": "view",
191 "type": "function"
192 },
193 {
194   "inputs": [
195     {
196       "internalType": "uint256",
197       "name": "_drugId",
198       "type": "uint256"
199     },
200     {
201       "internalType": "address",
202       "name": "_to",
203       "type": "address"
204     }
205   ],
206   "name": "transferDrugOwnership",
207   "outputs": [],
208   "stateMutability": "nonpayable",
209   "type": "function"
210 }
211 ]
212 }
213 if (!window.ethereum) {
214   alert('Meta Mask Not Found')
215   window.open("https://metamask.io/download/")
216 }
217
218 export const provider = new ethers.providers.Web3Provider(window.ethereum);
219 export const signer = provider.getSigner();
220 export const address = "0x7Ab3F242E762f4611A1404E5A9E9D6f93d9D562F";
221
222 export const contract = new ethers.Contract(address, abi, signer)
223
```

Ln 223, Col 1 Spaces: 4 UTF-8 LF JavaScript

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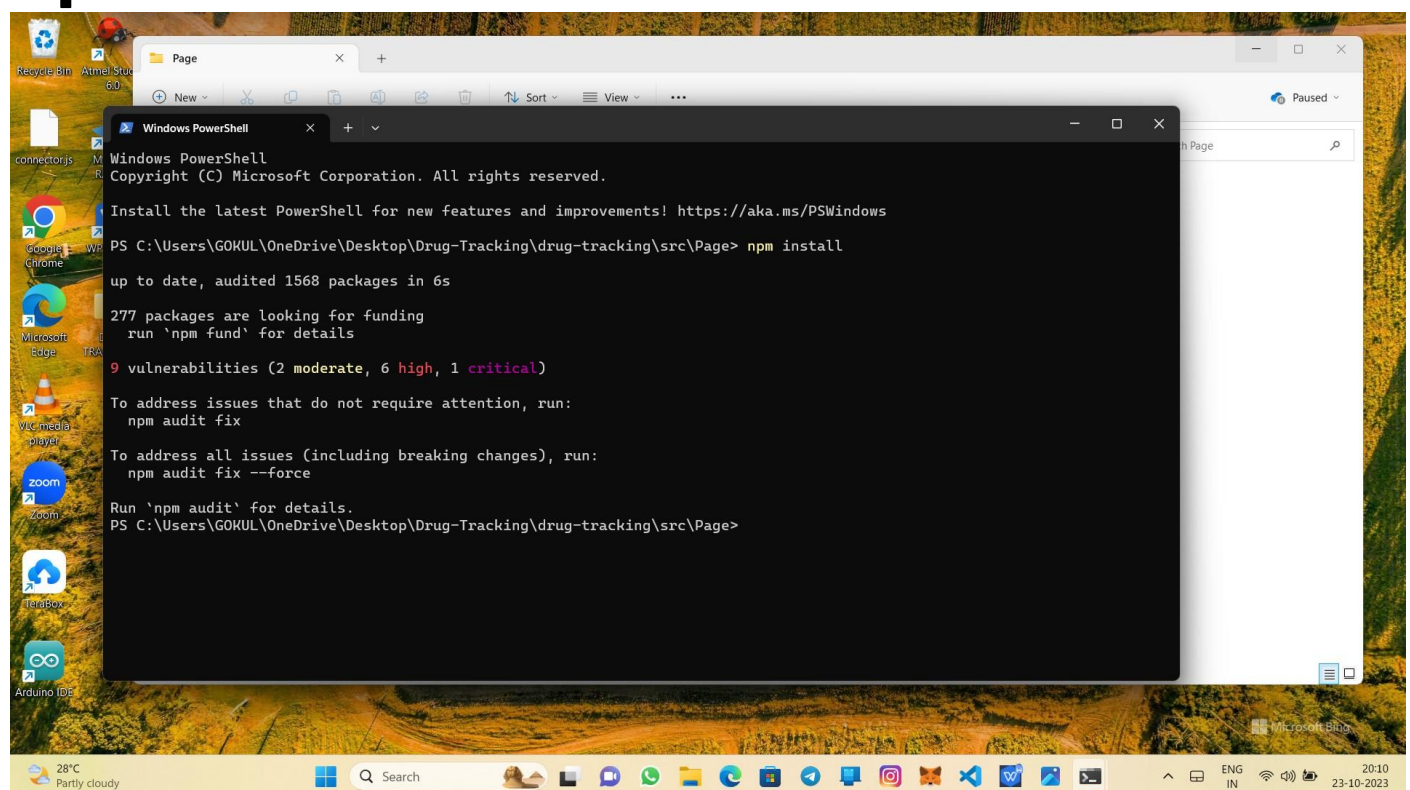
Search

ENG IN 23-10-2023

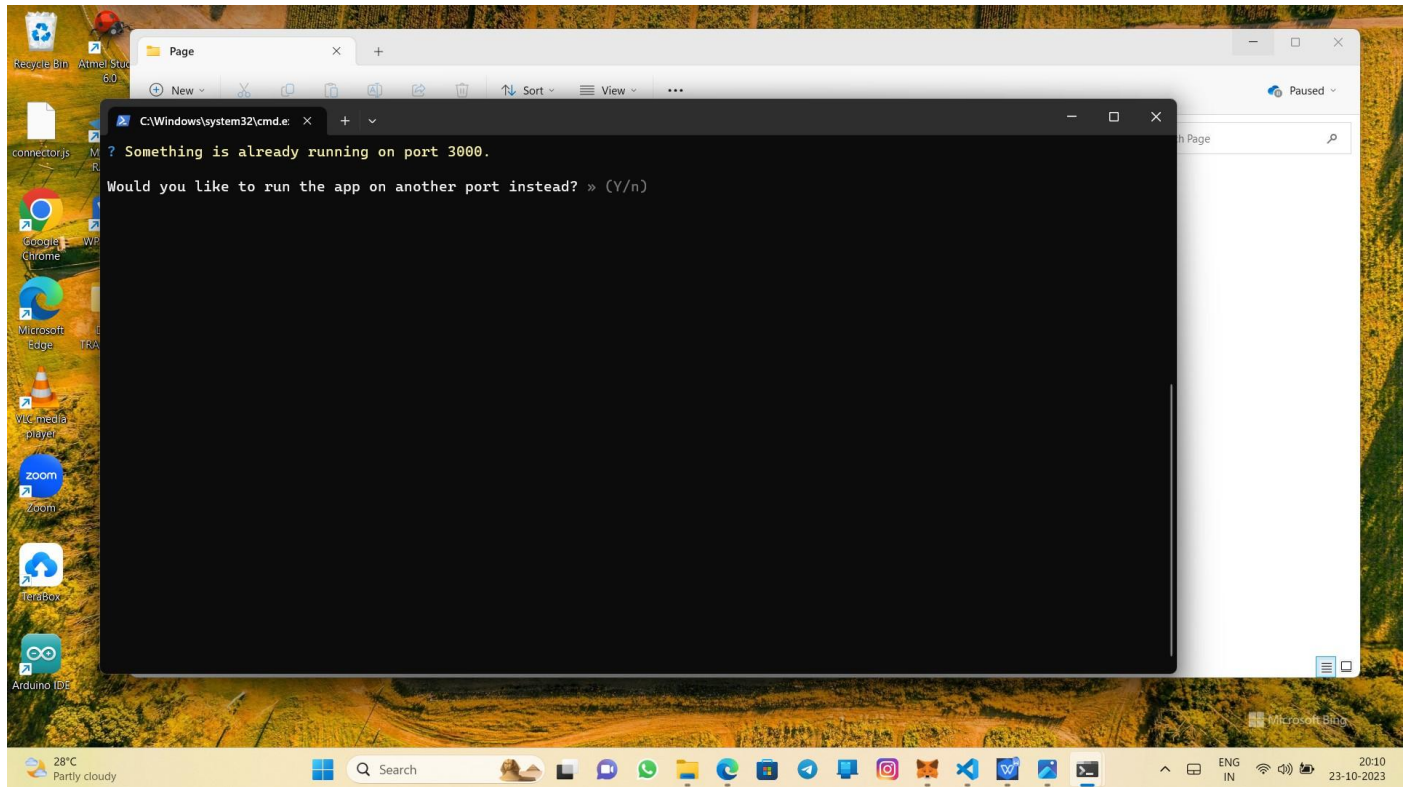


USING FILE CONNECTOR.JS:

npm install:



Npm run start:



INTERACTION WITH FRONT END:

