



E-Certification with Blockchain

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ABSTRACT

Recently we had to create the vaccination certificate because of the COVID-19 pandemic. So, there we need to get tested or vaccinated to make the certificate and then make the certificate for ourselves. Then a certificate is given to us for the vaccination, or the test done on us. Now the way the certificate is given to us is through pdf. That is not such a safe way to share the document as there is a lot of information stored in the certificate and I want that information to be stored securely. We have the technology for secure data storage which is blockchain. So, this need for safe storage of data can be completed by the blockchain and this way the data of certificate with secure information can be secured. This effort is toward the goal of safe storage of the data of certificate sensitive information.

INTRODUCTION

In the past decade, we have seen the evaluation of the most interesting thing which is the internet, and that thing changed the world completely and in the true sense digitally. Now with that, some of the disadvantages are also data hacking. We can see in this paper [1] how important data security is. We must pay attention to this, or we will be in a problem and that beneficial thing is going to be dangerous for us. In this project, I tried to create a system that will create a certificate and then with a quite effortless way to see the certificate is used. For sharing the certificate, we have created the QR code of the certificate and that QR code is emailed to the person whose certificate has been created. Now, this way we will be able to make this process of creating the certificate secure with the help of blockchain.

LITERATURE REVIEW

In paper [2] we can see that data security problems can be solved with the blockchain, and we can make the safe storage of the certificate through the blockchain. We have seen some the people are not comfortable sharing their information with anyone and that need to do because the data available on the internet is no longer safe [3] there, we need to make sure that to have a solution for that and we have already seen that we have the data security that can be improved with the help of the blockchain [2]. Again, we need to think about how we should make our system strong enough in terms of data security and now we need to understand that the hacker is clever enough to crack this current system with some knowledge of hacking [4]. In the future, we will be able to do everything online so that we can automatically use everything from anywhere. That thing may lead to a dangerous situation for us where a hacker may know everything about you and that situation is not a good thing for us to be in. We need to understand that we have to make sure that our data and our personal information are safe while online also. Similarly, we need to see that the data stored for the user health information is also sensitive and needs to be secured. We can achieve this by making a system secure with the help of the blockchain.

I. PROBLEM STATEMENT

There the problem statement is simple many people are very conscious about the information available on the internet, and we need to make it secure. The current system we have is not so secure and the system is a centralized storage database. We all know that the centralized storage of information is not so secure [7], and we need to make sure that the data is not in a single place so that it is prone to getting hacked. We have the requirement of the system that makes the storage not in the way it gets hacked. We all know with information about someone the data will be used against the person for harming or may be used to make the same about their past that they do not want to be discussed in front of any other person. There should be some sort of solution for the user to easily access the information on the certificate and make that process secure also.

II. DRAWBACKS IN EXISTING SYSTEM

Existing certificate creating system is not so good as the data there is stored in a centralized way and if the data get hacked all the data will be in front of the hacker at the single time of hacking and to make the system secure, they have the data security techniques but that is not so good in front of the blockchain that system is in the hand of the Government and government officials. That information can be used by them in there and the information may be seen by them in any way which is also not good for the privacy of the person whose information is being seen by them. In this way, the security

and privacy of the person are in danger so we cannot believe it blindly and that is why we need to look for another way of storing that information so that the privacy of the person can be maintained by the system.

III. PROPOSED SYSTEM

For the solution, we can make the system based on the blockchain and this way we can make the level of privacy that the user wants for his project and that can be done by making a smart contract on the blockchain that can make it easy for the user to have the unique block of information that cannot be accessed by anyone else the user and this way we can use that make a secure database for the storage of the information. For easy access to the information, the data can be stored on the blockchain, and the information ID can be stored on the QR code that can be emailed to the user on their email account and the user will have 2 options for accessing the information of the certificate. First, he can upload the QR code and then he can see the details of the user Second, he can make the QR code scan through the camera.

1. This way data is secure by blockchain technology.
2. That data can only be accessed by the user in real time.
3. Block chain is the safest way possible to make the data secure.

IMPLEMENTATION

A web application is made for this system so that all kinds of devices can easily access that information from their phone using the meta mask browser. That meta mask browser can make the user have a unique identity for accessing the detail of the use. You can learn about it here [5].

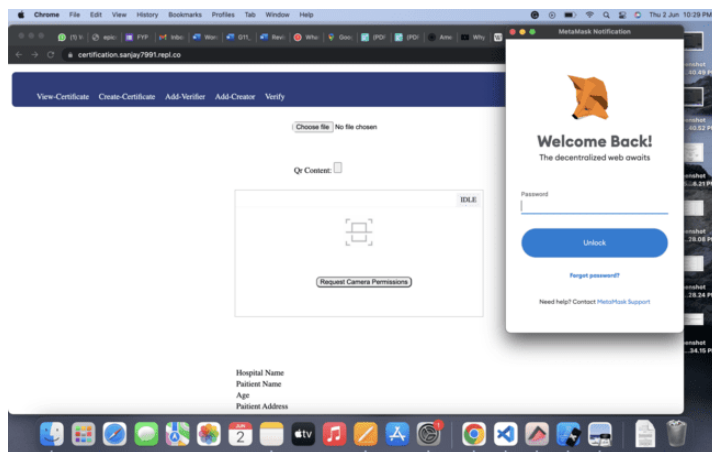


Fig 1: Landing page

Landing page for the seeing the detail of the user on the blockchain. This page will ask for the meta mask account if you do not have one and need to log in before using the web page.

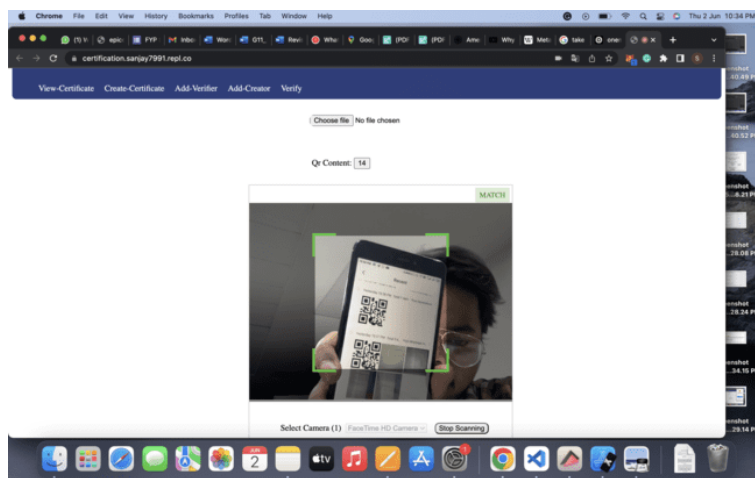


Fig 2: Scan QR code with Camera

Users on the landing page will scan the QR code and they can upload it also. When you select the camera option it will take the permission of the user to access the camera and when you show the QR code it will detect and generate the button to fetch detail from the blockchain.

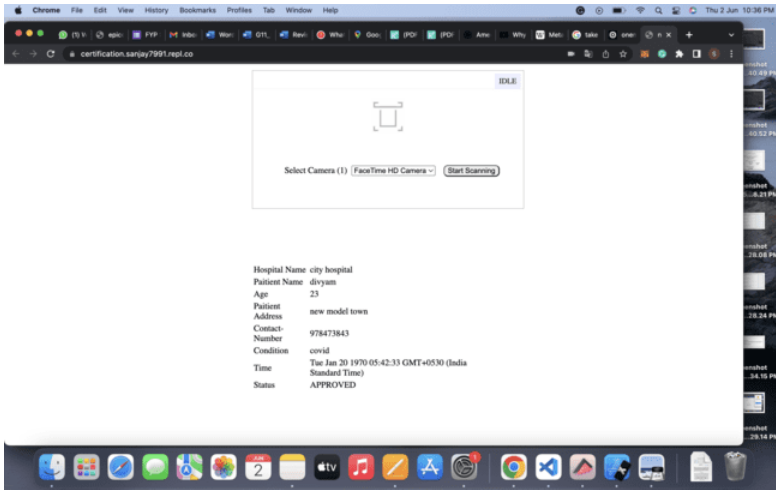


Fig 3: Detail of Certificate

When you press the button the details of the certificate will be shown down on the same page on the blank template provided there.

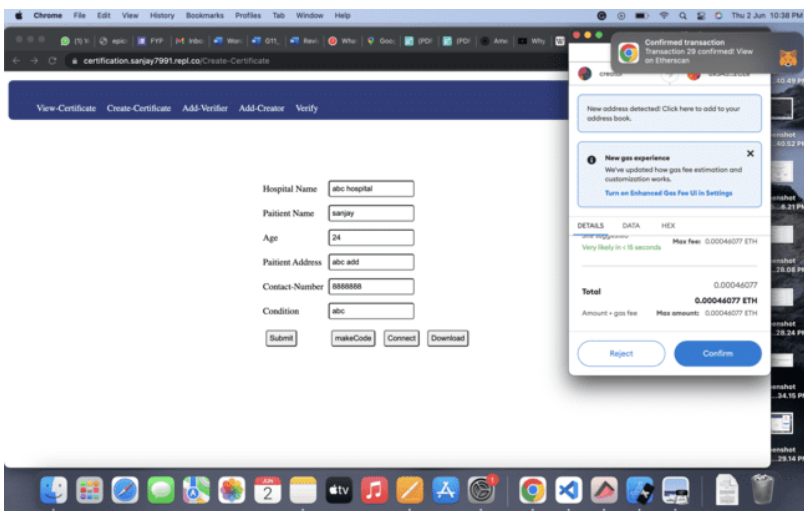


Fig 4: Transaction Pop Up from Meta Mask

Proper judgement of looking right by our proposed solution after detecting face landmarks.

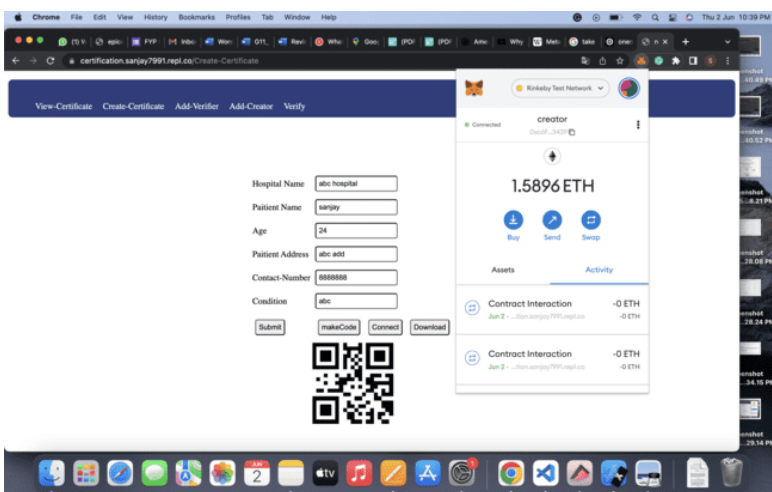


Fig 5: QR code Generation for the Certificate

There we can see the QR code that is generated to get to the user for checking the certificate and for the ease of access to the user and make privacy also.

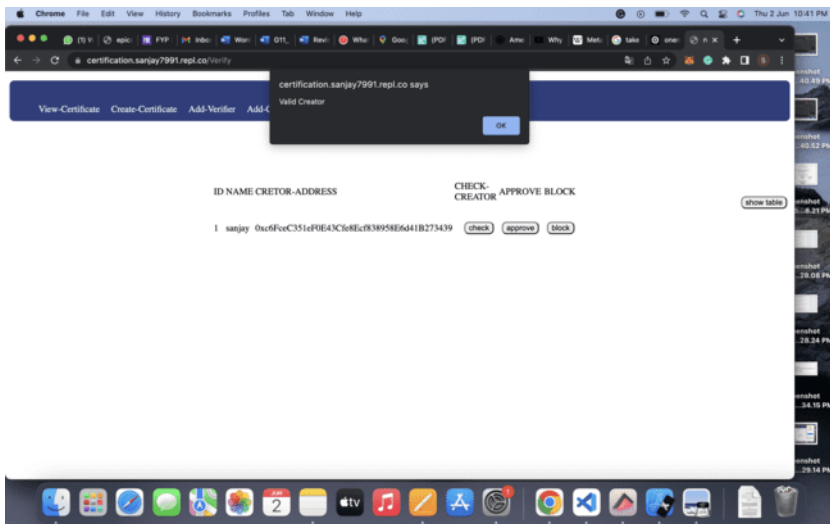


Fig 5: Check valid Creator

This is the process for checking if the creator of the is a genuine creator or not and that will be shown as an alert on the webpage we have.

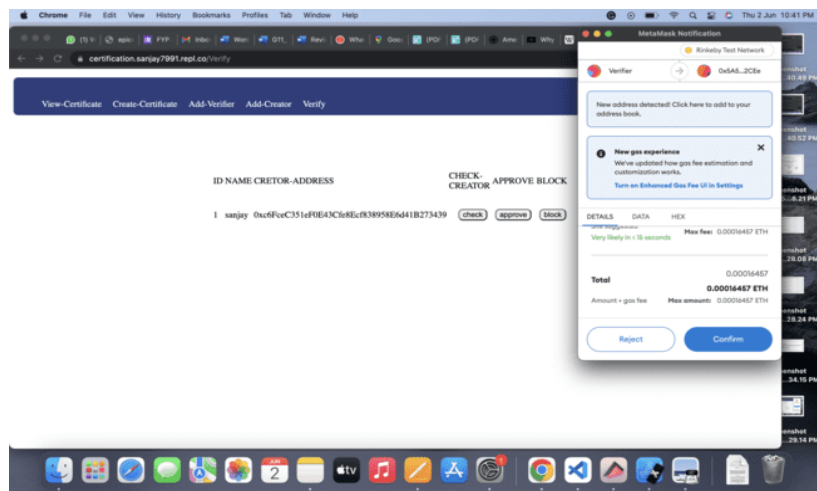


Fig 7: Mobile Phone Detection

This meta mask pops up when the certificate is getting verified or the certificate gets blocked based on the result of the check creator process.

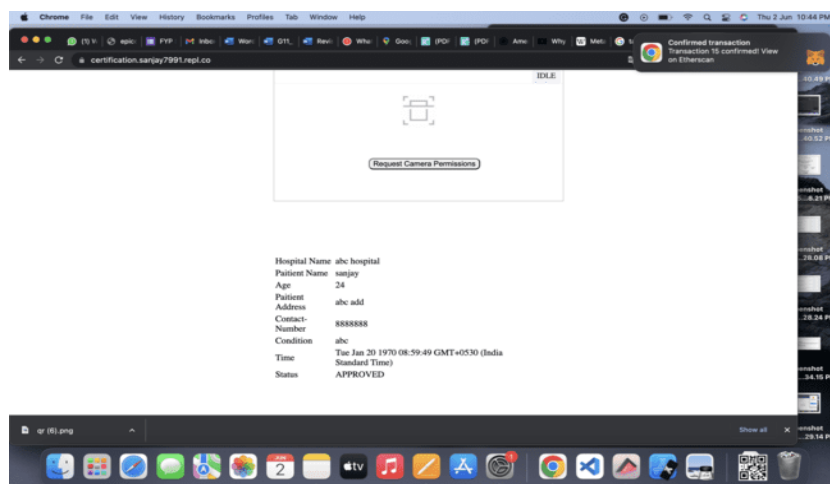


Fig 8: Certificate details after approval

On the Status of the certificate now we can see that it is approved, and we can also see that it may be blocked if it gets blocked by the verifier.

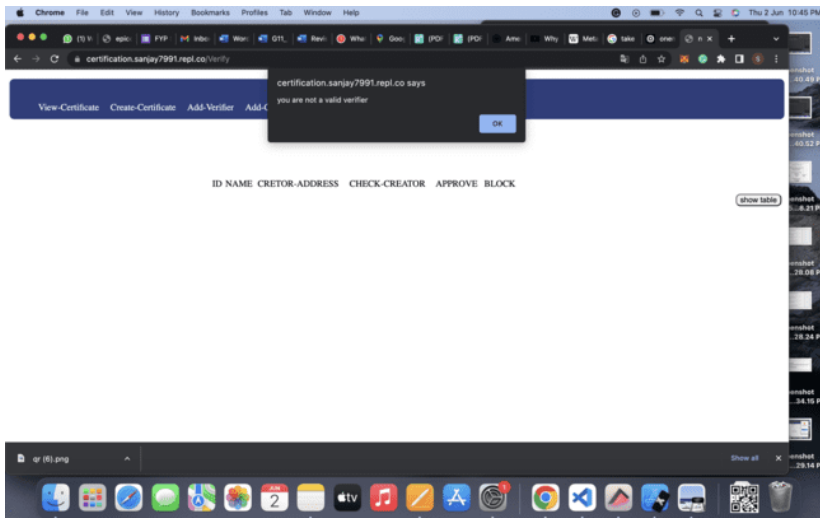


Fig 9: No Person Detection

When the verifier gets the page open to get the table shown then if the verifier is not a valid address it will show the pop up that you are not a valid verifier.

CONCLUSION

As we have analyzed, the existing system and the system that we have proposed are different approaches the centralized approach can harm the user privacy and data integrity and for making those flows removed we have the system blockchain-powered certificate generation. Now we have little need for changes for this system to get implemented and for the certificate to see and generate we need the meta mask extension to make that system work properly. We need to make people more aware of the security of data they must be concerned about and take some action against them as well. In this paper [6] we can see that web 3.0 is the future and to make the system security needs to be implemented as soon as possible for this web where data security is getting harder, and the system needed to be changed to the new Web3.0. In this system where not much authentication is needed, and you can only open the website with the help of a meta mask extension or you are a mobile user then you can download the meta mask application that has the inbuilt browser, and it will open the website same way you can do with browser on the window or mac. These kinds of systems need to be implemented for more systems available on the internet.

REFERENCES

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