



“Advance Authentication System Using Block chain Network”

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ABSTRACT:

We propose to develop an authentication system that combines a client-server model with block chain technology. Companies will register on the block chain and deposit an initial asset, which will serve as an incentive for their active users. In this system, companies will register their users using their wallet address and password instead of traditional methods such as email or username.

The companies will perform a session with the user's details, authenticate them, and track their regular session. They will keep the login data of the users updated every day. If their users are active for consecutive days, they will be rewarded with incentives through a smart contract. If a company fails to update their users' login data, they will be deemed untrustworthy.

Keywords: Block chain ,incentives, smart contract, wallet

I. INTRODUCTION

Proposed System by using block chain technology to create a Registration and login of User. User have to first Register to the system by filling the required fields then user can proceed further and login to the system. Both the registration and login is secured and authenticate by the Block chain Network, which stores the all user data in the form of hash values on the blocks of the block chain network. block chain-based authentication systems provides enhanced security, privacy, user control, efficiency, and cost savings for businesses. With its decentralized structure, cryptographic algorithms, and anonymity, it eliminates the risks of data breaches and gives users more control over their online identities. This can be a significant advantage in today's digital age, making it an attractive option for businesses looking to upgrade their authentication systems which also provides incentives.

1.1 INTRODUCTION TO BLOCK CHAIN

Block chain is decentralized and distributed technology. Block chain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat the system. Any transaction or activity done through block chain technology cannot be hacked.

II.RELATED WORKS

Imam Riadi , Aulyah Zakilah Ifani , Ridho Surya Kusuma [5] describes "Optimization and Evaluation of Authentication System using Blockchain Technology" In this paper, Author Said that User data security innovation is a particular concern in protecting one's privacy rights, which is one of the serious violations when an attacker can bypass the user authentication so that it looks like something legitimate and becomes legal. Based on these issues, the research aims at optimizing and evaluating the blockchain-based authentication systems to minimize data leakage, manipulate the data, and modify the data. Blockchain is one of the innovations that can solve this problem. Data or transactions in the blockchain are saved in hash form to make it difficult for hackers to break into them.

Yuki Ezawa, Makoto Takita, Yoshiaki shiraishi [8] describes , "Designing authentication and authorization system using block chain technology" In this paper, author said that a system that uses blockchain as a database for storing credentials and authority information and allows users and services to perform authentication and authorization based on that information.Data is accumulated daily in a society where the Internet has infiltrated. In order to further develop the industry, it is effective to establish a framework that can share and use data resources widely.

Raman Singh , Shahid Awan, Zeeshan Pervez and Keshav Dahal [6] describes "Blockchain-Based Secure Authentication" In This Paper, author said that secure authentication mechanism with improved performance. Neo blockchain is a platform that has properties that can provide improved security and faster execution. The research utilizes the intrinsic properties of Neo blockchain to develop a secure authentication mechanism. The proposed authentication mechanism is compared with the existing algorithms and shows that the proposed mechanism is 20 to 90 per cent faster in execution time and has over 30 to 70 per cent decrease in registration and authentication when compared to existing methods.

Shibasis Patel, Anisha saho, Bhabendu Kumar Mohanta [11] describes “DAuth - A decentralized Web authentication system using ethereum based blockchain” In this paper author said that blockchain and its use cases are studied and an alternative way of authentication service has been proposed based on Ethereum Blockchain called DAuth. Furthermore, a prototype has been developed which enables user authentication on the site. DAuth proposes to enhance transparency and user control in transactions which involves identity management. Over the past decade, a lot of evolution has happened in the field of security specifically authentication system. The most commonly used authentication service we use now is OAuth 2.0 based authentication. In this method, we are dependent on a 3rd party authentication service provider to which we need to trust.

Amitkumar, Sanni, & Apriliasari, [2] describes “Blockchain Technology Application: Authentication System in Digital Education” In this Paper Author said that blockchain technology for an authentication system that will protect data rights and interests and be safe from interference to store information in the form of confidential text, especially in the application of technology in education. From this writing, there are 2 benefits, the first is that all data stored in the education system is guaranteed and there will be increased trust from both parents, teachers and other parties due to the decentralized nature of blockchain. The application of technology in various aspects of life has made it easy for many people. However, there are also shortcomings in the use of technology, one of which is security issues, both transactions and data.

Soumyashree S. Panda, Priti Das [7] describes “A blockchain-based distributed authentication system for healthcare” In this paper Author said that system ensures privacy of patients, provides secure information exchange and authentication of entities. An implementation of the proposed system is provided using Ethereum Blockchain. The security and performance analysis of the system shows its potential to satisfy Healthcare security requirements and its efficiency respectively.

Beini Zhou, Hui Li, Li Xu describes [3] “An Authentication scheme using identity based encryption and blockchain” In this paper author said that identity based encryption a new authentication scheme is proposed and block chain is used. Key management issue can be simplified by identity-based encryption, still it suffers from some drawbacks.

Ammar Ayman, Mohammad moussa madine [1] describes” Block chain based multi party authorization for accessing IPFS encrypted data”. In this paper, author said that a distributed authentication

scheme for the energy Internet is proposed based on the blockchain technology, which is decentralized and undeniable. A PBFT consensus mechanism is implemented with the Shamir threshold secret sharing mechanism. Experiments show that the scheme can effectively improve the concurrent access efficiency of Energy Internet terminals. Energy Internet provides important support to power transmission and substation distribution links, security is particularly significant. However, access authentication centralized to the certification center has brought great pressure on computing and communications.

III. PROPOSED SYSTEM

The proposed system is called "Advance Authentication System Using Blockchain Network" and is designed to provide secure authentication through the use of blockchain technology. The system is divided into three main parts: the Client, the Company Server, and the Blockchain Network. To use the system, a company must first register on the blockchain network through a smart contract and deposit some crypto assets as security. After the company has made the required deposit, they can register their users in the system by providing their wallet address and password. When a user wants to log in to the system, they can send a login request to the Company Server by calling its API.

The Company Server then updates the user's status in the smart contract, indicating whether they are logged in or not, as well as how many times they have logged in. Users can also check their status and verify that the company is updating their status correctly by contacting the blockchain network. One key advantage of the system is that users who log in for seven consecutive days will receive incentives, which can motivate them to use the system more frequently. This incentive program can also benefit the respective company by encouraging users to use the system and generate revenue. Overall, the Advance Authentication System Using Blockchain Network provides increased security, trust, and transparency in the authentication process, making it a useful system for both companies and users.

3.1 SYSTEM ARCHITECTURE

3.2 ADVANTAGES

- Provides higher security.
- Prevent from malicious attacks.
- Users gets rewards of Incentives.
- Company will get maximum screen time.
- No Fear of losing personal details and sensitive data.
- Users can figure out which company is trustworthy.

3.3 APPLICATIONS

In Websites such as where we do not required to provide username and password i.e PDF to word converter etc.

In Cyber Warfare it helps in precautions for data bring breached in other countries.

Helps to grow the economy of the company.

Lead to greater screen time it will valuable for the company.

IV.CONCLUSION

In this study, we have proposed a Advance authentication System for validating the user more securely based on the block chain technology. ,Our System can completely reduce the security risks associated with validation and authentication. Blockchain Technology plays important role in our system because By implementing blockchain technology, data can be stored in more secure manner. Blockchain has the ability to check if the connection is tampered. The data will be more secure and unhackable than the existing system.

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