Social Media Platform Based on Blockchain

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Abstract: *Everything going on internet is all about data. Data is incredibly significant and is referred to as the "New Gold". It is very important to secure data. It is very risky to handover data to anyone. Here, blockchain technology can assist in solving this issue. Blockchain is used by Bitcoin and other well-known cryptocurrencies to provide a trustworthy and secure ecosystem. Blockchain allows to switch from centralized system to decentralized system. In this article we'll examine decentralized Social Media platform.*

Keywords: Blockchain, Web 3.0, Mining, Internet, Social media, Decentralized media, Solidity

I. INTRODUCTION

The foundational technology of the digital currency Bitcoin is blockchain [1]. The blockchain is a decentralized database that contains copies of all executed transactions and other digital events that were shared among participants [2]. Every transaction is confirmed by the vast majority of system users. It includes every single transaction record [3]. The most well-known cryptocurrency and an application of the blockchain is Bitcoin. When "Satoshi Nakamoto" person or a group of individuals with that name issued a white paper in 2008 titled "Bitcoin: A Peer to Peer Electronic Cash System," the world first learned about blockchain technology. Blockchain technology records transactions in an unchallengeable digital ledger that is spread across the network. Your data is accessed by the Facebook server every time you request data from it, and it stores it all in one place on its servers [5]. With IoT now in play, more and more of our appliances, such as refrigerators and watches, are connected to the internet, allowing third parties to access an increasing amount of personal data, which is plainly untrustworthy [4]. The majority of the modern Internet was developed using standalone computers. On servers belonging to reputable organisations, data is centrally controlled and saved. System administrators are required to administer these servers and their firewalls, which protect the data on them [6]. It is comparable to trying to break into a house when security is provided by a fence and an alarm system to try to modify data on a server [3].

In contrast to Web2, which changed the front end by making it more interactive and user-friendly, Web3 focuses more on the back end and its data architecture, which determines how data is kept there. Web3 is still in its infancy, making it challenging to understand. Since its launch in 2015, the major Web3 Blockchain network, Ethereum, has played a significant role in influencing the direction of Web3 development and decentralisation [4]. Web3's consensus mechanism is built in such a way that it is virtually hard to hack a node and gain access to data, in contrast to the frequent data breaches in Web2. Users can control data privacy and ownership via Web3 rather than an intermediary third party. In essence, Web3 technologies serve as the building blocks for P2P (peer-to-peer) marketplaces, services, and payments [3].
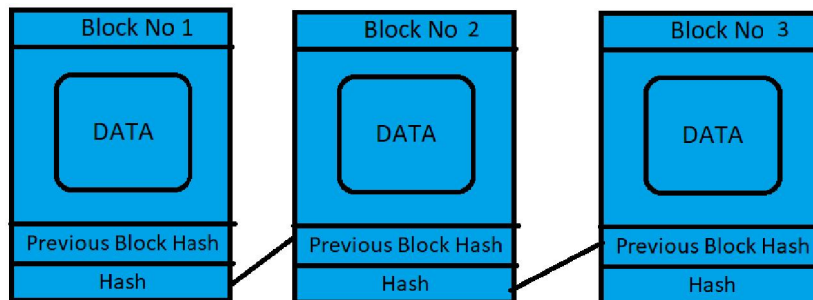
1.1 What is Blockchain:

Fig 1: Blockchain

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Blockchain is nothing but the shared, unchangeable ledger which stores data in blocks by encrypting it and that block is connected to previous block using hash key. Each block contains data, its on hash and hash of previous block. In this way chain of blocks get generated.

1.2 Solana:
Solana is a famous blockchain we are going to upload our data on this blockchain. SOL is a native cryptocurrency for Ethereum.

1.3 Smart Contract
In a smart contract, the conditions of the agreement between the buyer and seller are directly encoded into lines of code, making it a self-executing contract. The agreements and underlying code are spread throughout a decentralized blockchain network. Transactions are traceable and irreversible, and the code regulates their execution. Without the need for a centralized authority, a legal system, or an external enforcement mechanism, smart contracts enable trusted transactions and agreements to be made between dispersed, anonymous parties.

1.4 Solidity
Solidity is one of the famous programming languages used for creating smart contracts on blockchain.

II. LITERATURE SURVEY

In traditional social media platforms it is easy to manipulate data, hack accounts and change data, also downtime of servers may lead to inefficient service to customers [2]. All data on these platforms get stored on single server so if that server get crashed there is high risk of data loss. Also fake news get spread very fast through traditional social media, its algorithm is not that efficient to stop spreading of fake things. Due to this we already faced conflict in Shri-Lanka due to Facebook algorithm [6]. Privacy is one of the most important factor on internet, but due to traditional social media platforms we are not sure that our personal data is safe and secure. Server owner of that particular server can do anything with our data.

Here blockchain provides us a solution. In blockchain we store data on multiple servers, it is impossible to hack blockchain. As data is completely stored on decentralized server here no one is owner of that data. Here each node acts as a server on blockchain [3]. It will be more beneficial for content creator as here no third party involved in running ads on his/her post. No one can access our data or change it. We can see transactions between to nodes but can't see the data in that transaction [2]. It will be more transparent if we use blockchain for social media platforms. Only 51% attack is the way to hack blockchain and which is almost impossible [4]. Blockchain can provide perfect and healthy environment for interacting on social media platform.

2.1 Proposed System
The architecture has been designed to support social media use in a real-world setting while taking into account stated objectives such as security, qualification, comfort, receipt freedom, and irrefutable character. The suggested system aims to ensure decentralized social media without sacrificing its ease. Platform is planned in such a way that people can add posts, comments and can chat over the decentralized network. It will be more secure as it is very difficult (almost impossible) to hack.

III. SYSTEM ARCHITECTURE

On this platform users will be able to register themselves using crypto wallets. Once they get registered they will be able to add posts, comments on it. Also they will be able to chat on this platform.

To add post on platform user have to write his/ her post. After deploying post that post will get added in blockchain. As blockchain is immutable ledger it is not possible to edit or delete that post from blockchain everyone on blockchain will able to see that particular transaction with reference id which is encrypted. By using private key user will be able to add,

manage his transactions on blockchain. As part of our strategy, we have implemented an architecture that isolates the information inside the blockchain and uses an encryption method based on public and private keys.

When used for decision-making, decentralized frameworks should be accurate, beneficial, real, and safe. Nevertheless, potential problems with traditional social media platform structures may limit reception. Blockchain technology was developed to overcome these problems and provides decentralized hubs for distributed social media. It is used to give decentralized social media frameworks mostly due to the advantages of start to end checks. With diffused, non-renouncement, and security insurance properties, this innovation is a lovely replacement for traditional social media setups. In light of blockchain innovation, the accompanying article provides a summary of decentralized social media systems. The main goal of this analysis was to examine the ebb and flow state of blockchain-based social media research and internet social media framework, as well as any associated difficulties, in order to predict future twists of events.

The characteristics of a cryptographic hash function are as follows:

1. Deterministic: This indicates that we will always get the same outcome no matter how many times we submit the same input.
2. Quick Computation: This refers to the generation of results quickly, which improves system effectiveness.
3. Pre-Image resistance: Let's say we are rolling a die (1-6) and receive the hash value rather than a particular number. We now compute each number's hash value and contrast it with the outcome. Additionally, breaking pre-Image resistance through a brute force approach is conceivable for bigger data sets, but the time required makes this strategy useless.
4. Small changes in the input have a big impact on the entire output: A small change in the input has a big impact on the entire output.
5. Every input will have a distinct hash value, which brings us to point number five.
6. Good for crossword puzzles: The hash value of a new variable is obtained by combining two values.

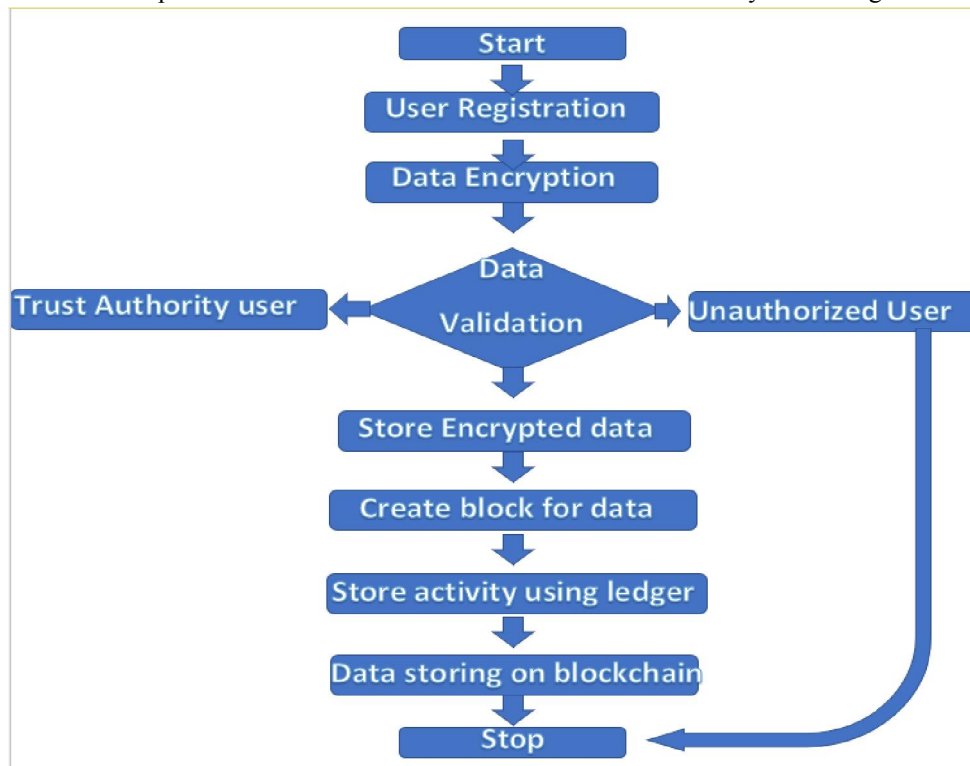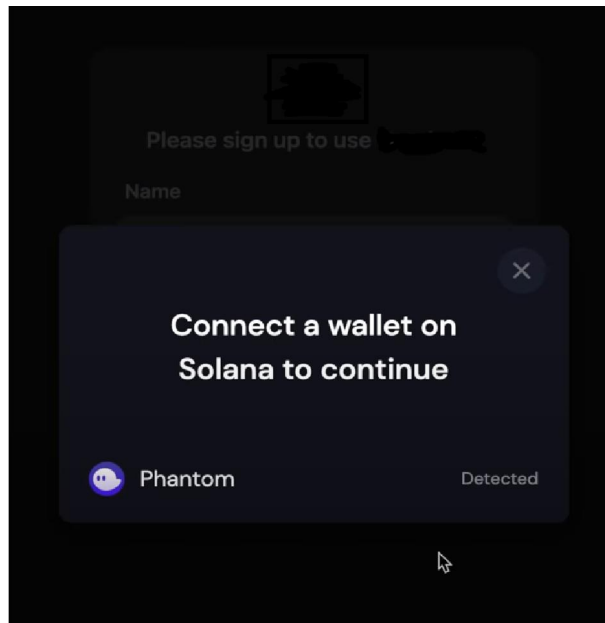**Fig 2:** Data flow diagram

IV. RESULT ANALYSIS

Fig: Signing in using Phantom Wallet

Logging in to the platform using phantom wallet which is linked with Solana blockchain to record transactions on platform.
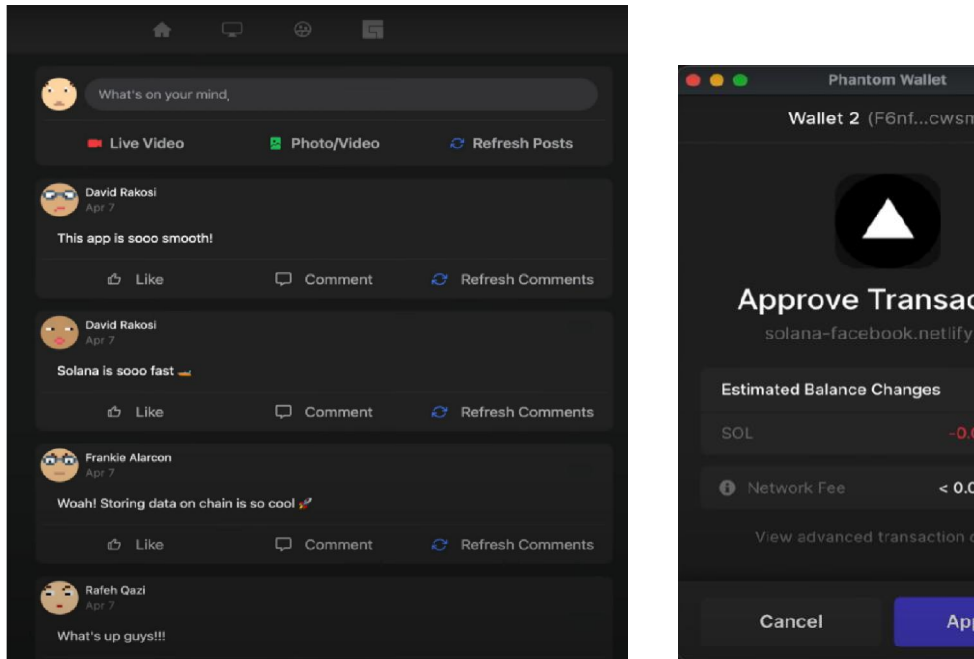

Fig: Output with transaction

It displays the final result where left side image is about application interface and right side image shows transaction to add new block in Solana blockchain using SOL.

V. CONCLUSION

Decentralized social media platforms still have a ways to go before they can rival industry heavyweights like Facebook, Twitter, or Instagram. Despite this, people are learning about and opening up to the concept of decentralized social networks and the promise of Blockchain - particularly because of the freedom and security offered. Being a part of a

decentralized, rewards-based social network appeals to many in particular because of the simple income opportunities and schemes it offers. They will undoubtedly have a big impact on social media in the future.

VI. FUTURE SCOPE

The following improvements can be made to the system,

- Making the system more secure.
- Enhancing the Graphical User Interface (GUI) of the application.
- Local languages can be included which will play a vital role for people living in rural areas as well as uneducated people.
- Adding suggestion system.
- A complaint system can be included, that allows the people to file complaint.

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