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BLOCK CHAIN NFT MARKETPLACE FOR CONTENT CREATORS

[1]Dr. Gayatri Vijayendra Bachhav, [2]Dr. Alam N. Shaikh, [3]Mr. Aryan Shaikh and [4]Ms. Ahana Shaikh
[1]Associate Professor VPPCOE and VA, University of Mumbai, [2]Principal VPPCOE and VA, University of Mumbai
[3]MS (Computer Science and Engg)., Santa Clara University CA,USA
[4]AIMLDepartment, RAIT, D.Y. Patil University
[1]dr.gayatribachhav@pvppcoe.ac.in, [2]dralamshaikh99@gmail.com, [3]aryan.aryahsworld@gmail.com and [4]ahanashaikh9191@gmail.com

ABSTRACT

A blockchain is a type of distributed ledger or database that is accessible to all nodes in a computer network. Its use cases extend beyond cryptocurrency, but it is best known for its central role in securing and decentralizing transactions within cryptocurrency systems. Any sector can leverage blockchain technology to ensure the immutability of data. This document offers a comprehensive examination of blockchain technology, beginning with an overview of its architecture and key characteristics. Additionally, it briefly outlines recent applications.

In today's world, social media has become an integral part of our day-to-day lives. It is not just a way of spending leisure time; it has also become a source of income for many people. The main drawback of such centralized systems is that we can never be sure about the privacy of the user data. Many big companies sell user data to other companies for advertising and analytics. The risk of a single point of failure always lies in such systems. Moreover, such a setup reduces the revenue of content creators due to the commissions involved. As a result, the monetization is heavily skewed in favor of the central authority. This project aims to create a decentralized social networking system that is free from the clutches of any organization. It will utilize the Blockchain network for higher security and transparency. It promotes user autonomy where users can self-manage the platform in a democratic way. Even the media content will be stored in a decentralized way on the Interplanetary File System (IPFS). Creators can also earn royalties on their work by minting it as NFT, which other users can bid on in a marketplace. An average case product feasibility analysis based on historical data reveals that such a system can generate higher revenues for creators at no to low costs. We can say that this platform combines the best of three domains, i.e., social media, NFTs, and finance. and trading outcomes.

Keywords—Blockchain, block, cryptocurrency, features.

I. INTRODUCTION

A blockchain is essentially a database that stores and stores data. The main differences between a blockchain and a traditional database or spreadsheet are the data's structure and accessibility. In both corporate and academic areas, the word "cryptocurrency" is increasingly often used. One of the most well-known cryptocurrencies, Bitcoin, has grown astronomically; in 2016, its capital market was valued at

$10 billion [1].

With a well-designed data structure, transactions can take place on the Bitcoin network without the need for a third party to act as a middleman. The core technology underlying Bitcoin is the blockchain, which was initially created in 2008 and implemented in 2009[2].

A blockchain is similar to a public ledger in that each committed transaction is recorded in a sequence of blocks. The chain gets longer as more blocks are added to it. To ensure ledger integrity and user security, asymmetric cryptography is used along with distributed consensus techniques. Persistence, auditability, anonymity, and decentralization are among the primary characteristics of blockchain technology [3]. Thanks to these properties, blockchain can save a substantial amount of money while increasing efficiency. Due to its ability to facilitate payments without the use of a bank or other middleman, blockchain can be applied to a variety of financial

services, such as digital assets, remittance, and online payments [4]. Additionally, it can be applied to various fields such as the Internet of Things (IoT), smart contracts, and public services. Blockchain technology brings several benefits to these areas. Blockchain technology brings several advantages to these fields [5]. On the other hand, blockchain technology is immutable. Once a transaction is added to the blockchain, it cannot be modified. Businesses that need to conduct business with the highest integrity and trust can use blockchain to attract customers.

Blockchain is decentralized, which avoids single-point-of-failure situations. Miners may automatically execute a smart contract's instructions after it is put on the blockchain [6]. Blockchain technology is now facing a

number of technological challenges, despite its huge potential for developing future Internet applications. Scalability is the main concern, above all else. A Bitcoin block can only be one megabyte in size at the moment, and they are mined around every ten minutes [7]. Therefore, high-frequency transactions are not supported as the Bitcoin network can only process 7 transactions per second.. On the other hand, larger blocks take up more storage space and move over the network more slowly [8].

Section II outlines the architecture of the blockchain. The functionality of blockchain is discussed in Section III. This paper presents new applications, which are summarized in Section IV.

II. Blockchain Architecture Functions Typically Performed in Databases, Such As

entering, retrieving, and storing data, are performed by programs called scripts that make up the blockchain. To be deemed valid, a distributed blockchain needs many copies to be stored on multiple machines and must coincide.

Blockchains collect transaction data and store it in blocks similar to cells in a spreadsheet. Once the data is entered, it is encrypted and a hexadecimal hash is created [1].

The hash is then added to the next block header and encrypted along with the rest of the block content. This creates a chain of connected blocks.

A specific block can be identified using the blockchain's header component. Monitor all blocks on the blockchain. Miners often hash block headers by changing the nonce value as part of standard mining operations.

Additionally, there are three types of block metadata in the block header: The ith block is linked to the i+1th block using the previous block address/hash.

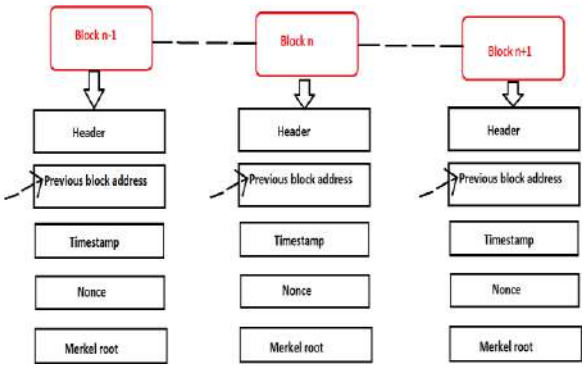

Fig. 1. Blockchain Architecture

This basically refers to the hash of the previous (parent) block in the chain.Timestamps are a mechanism for validating information within blocks of digital documents and providing the date and time of creation [2].

An integer that is used only once is called a nonce. This is an essential element in the block's proof of work. The current target value is compared to see if it is less than or equal to this. People mine, evaluate, and delete multiple nonces every second until they conclude that the valuable nonce is genuine.

The various data blocks form the Merkel root of the data structure framework. All transactions are digitally recorded by the Merkle Tree, which stores all transactions together inblocks.

Core Components of Blockchain Architecture:

A node is a network node that acts as a hub for communication for different network activities and keeps an eye on the distributed ledger. Digital ledgers are used to record transactions, including asset transfers and contracts.

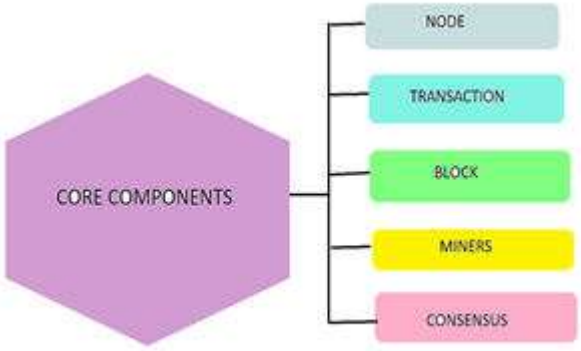

Fig. 2. Core components of Blockchain architecture

Blocks are used to monitor transactions and, like chains, they contain encrypted transaction data. In the global blockchain architecture, chains link blocks. With bitcoins, miners manage cryptocurrencies and verify each step of a transaction. Consensus is a fault-tolerant method for maintaining records and reaching agreement on a single network state that is utilized in blockchain and computer systems.

I FEATURES

Decentralization in blockchain technology eliminates cost and performance bottlenecks by eliminating third-party verification by a central trusted authority. Blockchain consensus mechanisms preserve data consistency. Once a transaction is in the network, it cannot be deleted or reversed and is not erroneous. Blockchain allows people to connect without revealing their true identities by providing anonymity through a generated address. Transparency and cryptocurrency are comparable in that each transaction is traced using the address, and the identity of the user is concealed both before and after the transaction.

Blockchain's primary concept is cryptography, which uses cyphers and cypher languages to secure data. However, because blockchain is irreversible, it cannot provide complete privacy protection.

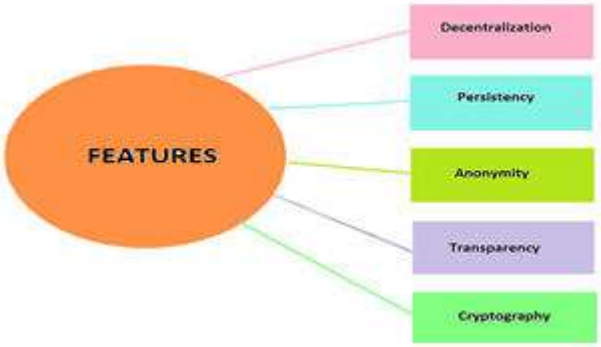

Fig. 3. Features of Blockchain Technology

NFT

A non-fungible token is a financial security consisting of digital data stored in a blockchain, a form of distributed ledger. The ownership of an NFT is recorded in the blockchain, and can be transferred by the owner, allowing NFTs to be sold and traded. To create a marketplace & a social media for content creators where they can showcase and minttheir content as NFTs for royalty and license.

NFTs have carved out their path into finance, travel, music, art and social media. There are many NFT based platforms in the market today that focus majorly on the social media industry. With the social media NFT marketplace, influencers and social media account holders get an opportunity to transform their content into blockchain-powered digital NFTs. NFT for social networking monetizes the social media platform eliminating the middlemen cost, providing a platform to trade videos, reels, pictures, gifs and other social media content.

Marketplace for social network also provides auction listing, governance mechanisms and regulates attractive rewards for the bidders, buyers and artists' fans, increasing the market value of social media NFTs. Hence, NFT for social networking revolutionizes the social media industry by monetizing it in a decentralized and secure manner.

Social Media NFT Marketplace is a platform that eliminates the middlemen cost between celebrities and their audience, helping them directly showcase their pieces of art and videos in a non-fungible token to the bidder, offering the highest quote on the social media NFT marketplace. Following sports and music, social media will witness the inflow into the NFT market. Social media influencers have agreater reach and effect on their audience today. In addition to being a fusion of all other industries, social media attracts celebrities and influencers from all segments of society, whether they are musicians, athletes, artists, or anyone else. The marketplace combines the best of three domains, i.e., social media, NFTs, and finance.

A piece of unique art or music, or any other material created by an influencer, maybe made into an NFT and sold to their fans. Influencers can turn any of their images, life moments, or other content into an NFT. In the same way, influencers may monetize their content, followers and users can also develop a portfolio of NFTs that they can resell for profit. Users can also stake tokens to acquire access to unique content and earn money through staking. As a result, not only will influencers make money on the platform, fans will also have an equal chance to do so

IV LITERATURE REVIEW

NFTs are non-fungible tokens. They are unique items that you can't replace with something else. For example, a one-of-a-kind trading card is an NFT – you can't just replace it with any other card. If you trade your card for some other card, you have something different. These differ from fungible items, which are often the same as each other. If you trade one bitcoin for another, you end up in the same position as where you started, for instance.

On the other hand, if you swap a near-worthless mass-produced late 80s baseball card for a 1909 American Tobacco Company T206 Honus Wagner card (valued at over $1 million), you've done very well for yourself. Nowadays, most NFTs tend to be digital. This makes it particularly easy for creators to give their supporters something rare and unique.

Some NFTs, for example, are digital artworks, and people are now collecting these digital artworks, just like collectors have collected physical paintings for years. Some of these NFTs have gone for extraordinary prices. One NFT artwork by a digital artist calledBeeple sold for $69 million at Christie's. Nowadays, most NFTs tend to be digital. This makes it particularly easy for creators to give theirsupporters something rare and unique. Beeple sold for $69 million at Christie's.

Rarity, or uniqueness, is a core quality of NFTs. Some NFTs are created by renowned artists. Others represent tokenized, real-world assets. All NFTs are one-of-a-kind, and their ownership and authenticitycan be verified by

anyone, but never altered (the ownership can change hands if the NFT is bought, sold,gifted or traded). Generally, in-demand NFTs have greater value.

Community is a decisive factor for NFTs, since it impacts how many potential users and buyers it has onthe open market. The larger the community, the more word-of-mouth an NFT attracts.

V DESIGN AND IMPLEMENTATION

We aim at building a platform that eliminates the middlemen cost between content creators and their audience, helping them directly showcase their pieces of art and videos in a non-fungible token to the bidder, offering the highest quote on the marketplace.

Following sports and music, social media will witness the inflow into the NFT market. Social media influencers have a greater reach and effect on their audience today. In addition to being a fusion of all other industries, social media attracts celebrities and influencers from all segments of society, whether they are musicians, athletes, artists, or anyone else. The marketplace combines the best of three domains,i.e., social media, NFTs, and finance.

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Smart contract:

Smart contract will be maintained to mint and store NFTs of users. It will also maintain a ledger of all the transactions done over the NFTs.A computer programme called a "smart contract" can be introduced to the blockchain in order to facilitate contractual agreements. Users consent to a set of rules that control the operation of smart contracts.Upon fulfillment of such conditions, the agreement's terms take effect right away [3]. By paying a security deposit and receiving the unit's door code from the landlord, a renter can rent an apartment through a smart contract. If a tenant fails to pay rent or specific conditions are fulfilled, the code may be altered.

Web3 Authentication:

Web3Auth, a non-custodial key infrastructure solution for web3 apps and wallets, wants to solve these problems by leveraging social accounts and devices that mainstream users already own to enable users tomanage their keys intuitively. Web3 Auth will be used in our application for a seamless and secure authentication process.

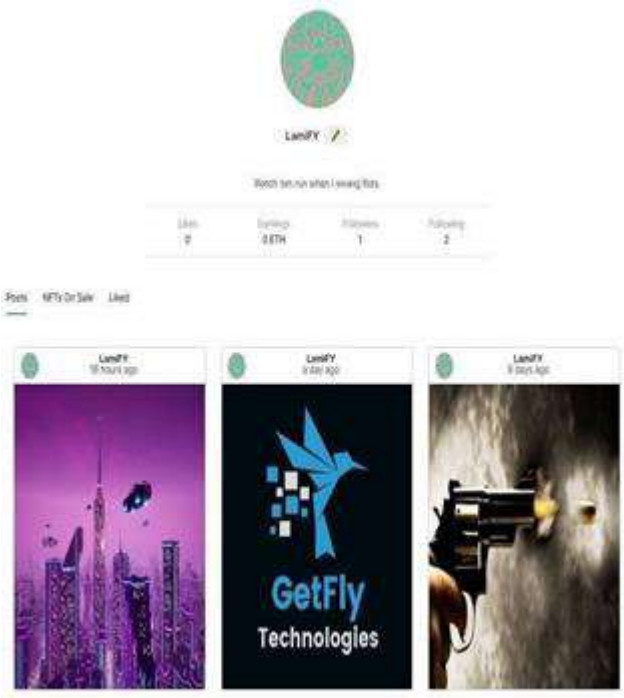

Fig: Web3 Authentication Using Metamask

CONCLUSION

We presented the ChainSpace, which is a platform designed with registration, tracking, protection, and provenance for content enabled by blockchain technology. We also discussed how to design, implement and deploy the blockchain platform in operation as a working product in practice. The proposed blockchain implementation and experimental results showed that our system towards artworks can provide a complete blockchain-based solution with the property of irreversibility, authentication, traceability and transparency. In future, we plan to work on anti-counterfeiting for the original works of art by integrating with the smart modules of IoT, and activating relevant smart hardware and other functionality (e.g. positioning/location tracking) as required by artists or collectors

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