WEB 3.0

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Abstract: This study has been undertaken to investigate the next generation of internet services of websites and web application. It not only allows the users read and write the data but allows to receive information from the internet. It aims to change the current internet into more advanced and user-friendly resource.

I. INTRODUCTION

Web 3.0 is the internet version that will take over the globe by great amount of security on privacy of users in a decentralized manner.

Web3.0 creates an electronic version of the individual that works day and night for person which indeed gives control over their data through blockchain technology in a very secured decentralized network. This internet version works usually with the new web browser called 'BRAVE'. This technology creates user control monetization with cryptocurrencies like 'bitcoin'. Web 3.0 also has a technology called metaverse that is a combination virtual reality and augmented reality.

1.1 Web 3.0 Technologies

Web 3.0 is the third generation of internet services for websites and applications that will focus on using a machine-based understanding of data to provide a data-driven and Semantic Web. The ultimate goal of Web 3.0 is to create more intelligent, connected and open websites.

Web 3.0 has not yet been implemented, so there is no solid definition. It took over ten years to transition from the original web, Web 1.0, to Web 2.0, and it is expected to take just as long, if not longer, to fully implement and reshape the web with Web 3.0. However, the technologies that some people believe are going to make up and ultimately define Web 3.0 are currently being developed. If the trend of change is traced from Web 1.0, a static information provider where people read websites but rarely interacted with them, to Web 2.0, an interactive and social web enabling collaboration between users, then it can be assumed that Web 3.0 will change both how websites are made and how people interact with them.

1.2 Web 3.0 and Web 2.0

Web 2.0 refers to websites and applications that utilize user-generated content for end users. Web 2.0 is used in many websites today, chiefly focusing on user interactivity and collaboration. Web 2.0 also focused on providing more universal network connectivity and communication channels. The difference between Web 2.0 and 3.0 is that Web 3.0 is more focused on the use of technologies like machine learning and AI to provide relevant content for each user instead of just the content other end users have provided. Web 2.0 essentially allows users to contribute and sometimes collaborate on site content, while Web 3.0 will most likely turn these jobs over to the semantic web and AI technologies.

II. TYPES OF TECHNOLOGIES

There are 4 layers that makeup web 3.0 architecture:

Ethereum Blockchain: These are globally available machines which is maintained by a group of networks. Anyone in the globe can sit at any part and access this machine. We can write into it and update existing data. It is not owned by any single or group in any network.

Smart contracts: These are small piece of programs that run the Ethereum blockchain. These are executed by the developers in machine or high-level language.

Ethereum virtual machine (EVM): This machine executes the logic written in the previous state, smart contracts.

Front end: This front end manages the user interface of the program. Even though it manages the user interface and front end of the program, it also connects the smart contracts.
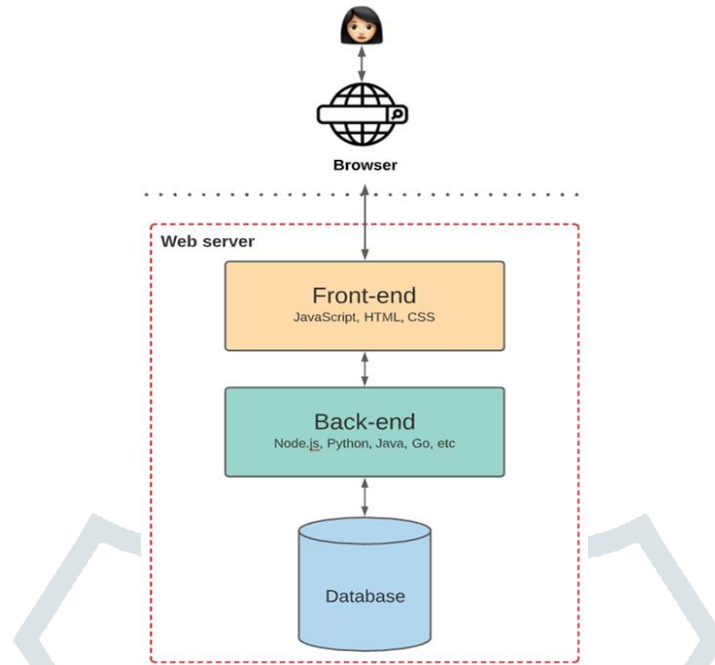

Figure 1: First, there must be a place to store essential data, such as users, posts, tags, comments and so on which is constantly updated database
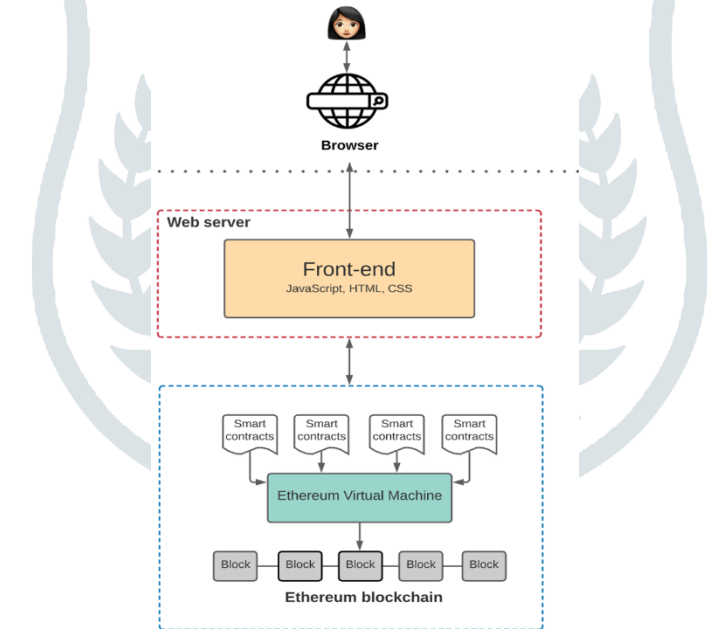

Figure 2: Second, the backend code written defines the business logic, this ensures authentication mechanism.
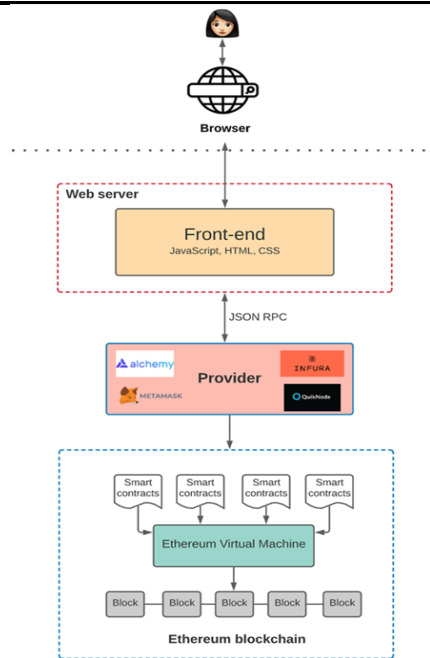
Figure 3: Third, the frontend code defines the user interface. All the code is hosted and sent to users through internet browsers.
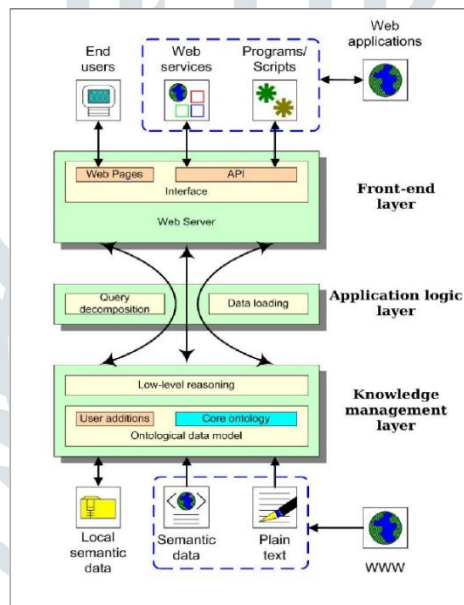

Figure 1: The proposed 3-tier architecture

Figure 4 : Proposed 3-tier Architecture

III. WORKING OF WEB 3.0

As our life is completely based on searching and finding new things, the websites will get to know us more. The more we search the websites will know about our likes and dislikes and what we need. Hence websites will provide information before the user even search for it. This is called "suggestion", this will show results based on our interests and likes.

These suggestions include:

- Restaurants we prefer
- Books we like
- Products we like (food, machineries, toys)
- Places we like to visit

When you use a Web search engine, the engine can't really understand your search. It looks for Web pages that contain the keyword found in your search terms. The search engine can't tell if the Web page is relevant for your search. It can only tell that the keyword appears on the Web page. For example, if you searched for the term "Saturn" you'd end up with results for Web pages about the planet and others about the car manufacturer.

IV. TYPES OF TECHNOLOGIES

4.1 Blockchain

Like the name indicates, a block chain is a chain of blocks that contain information. It is a distributed ledger that is open to anyone. One of their interesting properties is that once any data is recorded inside a blockchain, it becomes very difficult to change it. Blockchain is important because business runs on information. The faster it's received and the more accurate it is. Blockchain is ideal for delivering that information because it provides immediate, shared and completely transparent information stored on an immutable ledger that can be accessed only by permissioned network members. A blockchain network can track orders, payments, accounts, production and much more.

The internet is undoubtedly one of the most vital aspects in the life of almost every individual on this planet. As a matter of fact, it is quite difficult to imagine life without the internet at your disposal. Moreover, a global pandemic has further established how significant the internet can be in times of crisis.

However, the internet we know today is quite murky when it comes to data safety. The web has grown manifold in the years since its inception. Many new forms of the internet have developed before ultimately leading to the introduction of blockchain in web 3.0. The following discussion would offer you a detailed impression of how blockchain can drive the growth of web 3.0.

4.2 Cryptocurrency

A cryptocurrency is a digital currency designed to work as a medium of exchange through a computer network that is not reliant on any central authority, such as a government or bank, to uphold or maintain it. A cryptocurrency wallet stores the public and private keys which can be used to receive or spend the cryptocurrency. With the public key, it is possible for others to send currency to the wallet. Blockchain is the technology that enables the existence of cryptocurrency. Bitcoin is the best-known cryptocurrency, the one for which blockchain technology was invented.

4.3 NFT

NFT also known as non-fungible token, non-interchangeable unit of data stored on a blockchain, which is a form of a digital ledger which can be thought as a digital certificate of authenticity. NFT can be considered as a modern-day collectible digitally and are being served secured via blockchain. They are bought and sold or traded online.

4.4 Metaverse

Metaverse is a virtual reality space where users can experience gaming, interact, experience virtually as in the real world. It is same as real word, but it's made in in virtual world. It uses augmented reality and virtual reality technology simultaneously. It allows users to enter the matter was and experience virtual versions of people, objects sceneries and lot more. It allows the users to virtually interact meet talk feel virtually and socialize in so called 3D spaces.

The metaverse is a concept of a persistent, online, 3D universe that combines multiple different virtual spaces. You can think of it as a future iteration of the internet. The metaverse will allow users to work, meet, game, and socialize together in these 3D spaces. The metaverse isn't fully in existence, but some platforms contain metaverse-like elements. Video games currently provide the closest metaverse experience on offer. Developers have pushed the boundaries of what a game is through hosting in-game events and creating virtual economies. Although not required, cryptocurrencies can be a great fit for a metaverse. They allow for creating a digital economy with different types of utility tokens and virtual collectibles (NFTs). The metaverse would also benefit from the use of crypto wallets, such as Trust Wallet and Meta Mask. Also, blockchain technology can provide transparent and reliable governance systems. Blockchain, metaverse-like applications already exist and provide people with livable incomes. Acts as infinity is one play-to-earn game that many users play to support their income. Second Live and Decentral and are other examples of successfully mixing the blockchain world and virtual reality apps.

When we look to the future, big tech giants are trying to lead the way. However, the decentralized aspects of the blockchain industry are letting smaller players participate in the metaverse's development as well.

V. AIM OF WEB 3.0

As most of the currently used technologies and applications are decentralized, web 3.0 will provide a decentralized network build using blockchain technologies which provides advanced interaction for the user. Major advantage is that it allows graphics and 3D, which is one of the future of applications and network.in this virtual world it is very easy for users to shop online and plenty other online activities. So, graphics and 3D will attract more users and makes it easier to use. All the data are secured as it is not controlled by multinational companies. Data privacy and good user interface is key feature of any website or technology.

VI. RESEARCH METHODOLOGY

This research is done using the methodology of be future ready with the new technologies using various sources like videos from YouTube, some published papers from google scholar, and sites related to web 3.0.

VII. ACKNOWLEDGMENT

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VIII. REFERENCES

[1] https://www.groupdiscussionideas.com/web-3-0/