SERVERLESS SOCIAL MEDIA USINGETHEREUM NETWORK

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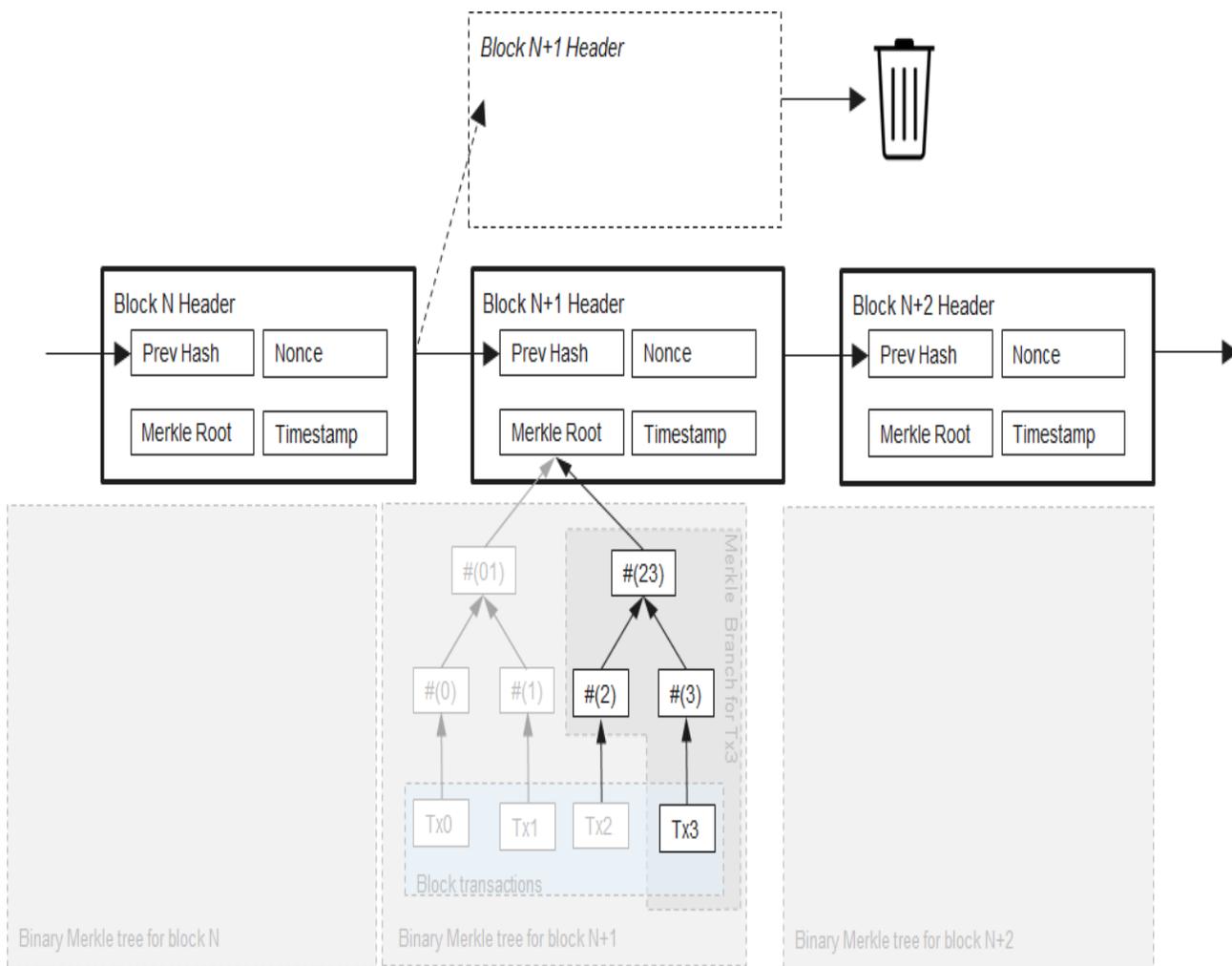[*] Assistant Professor, Department of Information Technology, SNS College of Engineering, Tamil Nadu, India

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Abstract- Blockchain technology is currently disrupting various industries, and social media is one that is likely to experience the unwelcome consequence of an action or event of this disruption. Businesses using social media to establish their brands, such as Twitter and Facebook, are soon to realize that all of the investment may have been for nothing. According to our vision we have planned to build up a social network on blockchain with ethereum network, the technical support for this project is the usage of react and redux technology with the combination of Ethereum (truffle framework) and the metamask as the compiler client. Actually we cannot run the truffle framework at a time for three pages, because it may not connected with each other, so in that case we need any external JS client like Vue, Angular and ReactJS as a frontend and the web pack as server to our concern we are planned to use the ReactJS as the agent to compile at a time for more than two pages. The Data which is been posted will create a token and asks the confirmation to the user and after confirming the token it will get published in the Ethereum network, after the confirmed status from the metamask the data will be posted in the web page.

Index Terms- Blockchain, Ethereum, Redux, Truffle, Metamask, Vue, Angular, ReactJS, webpack

I.   INTRODUCTION

This Social media is a evergreen trending application that is been by millions of people in the world where it is suitable to all the people from young to old, many are been addicted to it. After the introduction of the social media Digital Marketing plays a vital role in it, where people finds the easier way to market their product without any huge investment. When there is a chance to create a social media in blockchain where there will be no Backend server and it will be stored in decentralized or in Distributed manner then there will be more information security. When there is a lot of security to the users who use it, then automatically the number of social media users will get increased and people will have faith in social media regarding data theft and privacy of their details. Blockchain is an emerging technology in our society where it is been boomed after the statistical growth of bitcoin which is been created by satoshinakomoto in the year 2008 to serve as the public transaction ledger, then the people recognizes it and increases its value from 0.004 dollars to 3850 dollars(may change regularly). It is a continuously growing distributed database that protects the data from tempering and the revision of data. Blockchain is also not get limited to financial service only, it may also used as a great platform for the products that needs more trust from the network for their data privacy. IBM and Samsung has recently revealed that Blockchain is the Backbone to the Internet of Things.
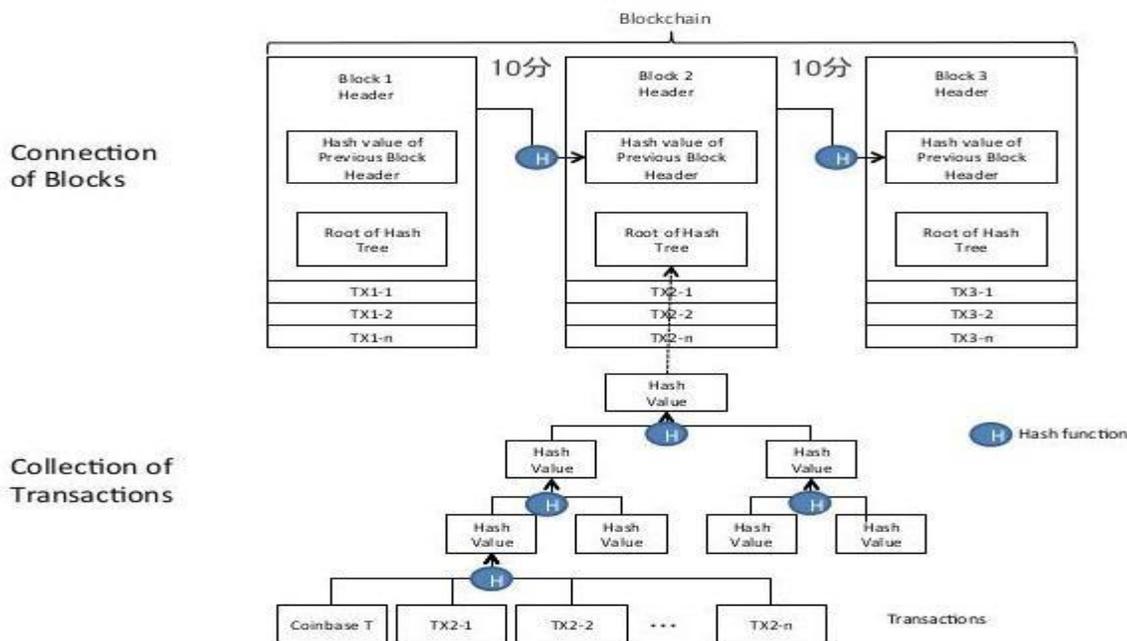
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Fig 1 Structure of Block chain

A. Introduction to Ethereum

Ethereum is a Decentralized platform that runs the program without any possibility of third-party interference and censorship. It may runs on custom blockchain, which is an enormously powered global infrastructure that can move around the represent the property of the ownership. It extends the blockchain concepts from Bitcoin which validates, stores, and replicates transaction data on many computers around the world which is also known as 'distributed ledger'. Ethereum takes this one step further, and also runs computer code equivalently on many computers around the world. Ethereum has a blockchain, which contains blocks of data which is called as transactions and smart contracts. The blocks are created or mined by some participants and distributed to other participants who validate them.

II. ETHEREUM – A PUBLIC AND PERMISSION LESS TRANSMISSION

The main Ethereum network is a public, permission less network – ie anyone can download or write some software to connect to the network and start creating transactions and smart contracts, Validating them, and mining blocks without needing to log in or sign up with any other organization

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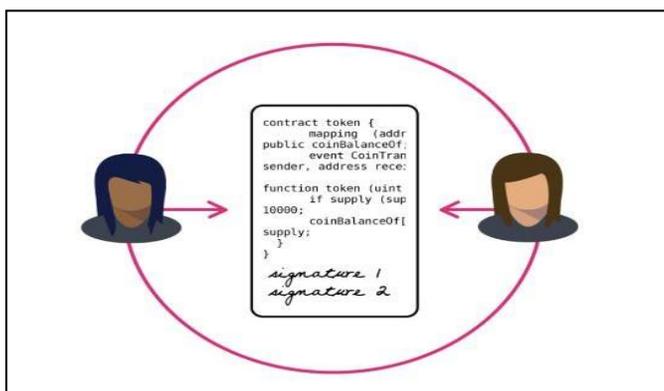*Volume- 5, Special Issue- March, 2019*

Fig 2 Structure of Ethereum

main public permission less instance (version) of the network However, like Bitcoin, you can take Ethereum software, modify it slightly and create private networks that aren't connected to the main public network. The private tokens and smart contracts won't be compatible with the public tokens though, for now. For more on the difference between public permission less and private permission networks. In this, anyone can set up a node that replicates the necessary data for all nodes to reach an agreement and be compensated by users and app developers. This allows user data to remain private and apps to be decentralized like the Internet was supposed to work.

III. DECENTRALIZED APPLICATIONS

Decentralized applications are digital programs that exist and run on P2P network of computers instead of a single computer, and are outside the purview and control of a single authority. Decentralized application can run on both a P2P network as well as a blockchain network. For example, BitTorrent, Tor, and Popcorn Time are examples of applications that run on various computers that are part of a P2P network where there are multiple participants on all sides' some are consuming the content, some are feeding or seeding the content, while others are simultaneously performing both functions. The dApps exist and run on blockchain network in a publ decentralized environment and are free from control and interference from any single authority.
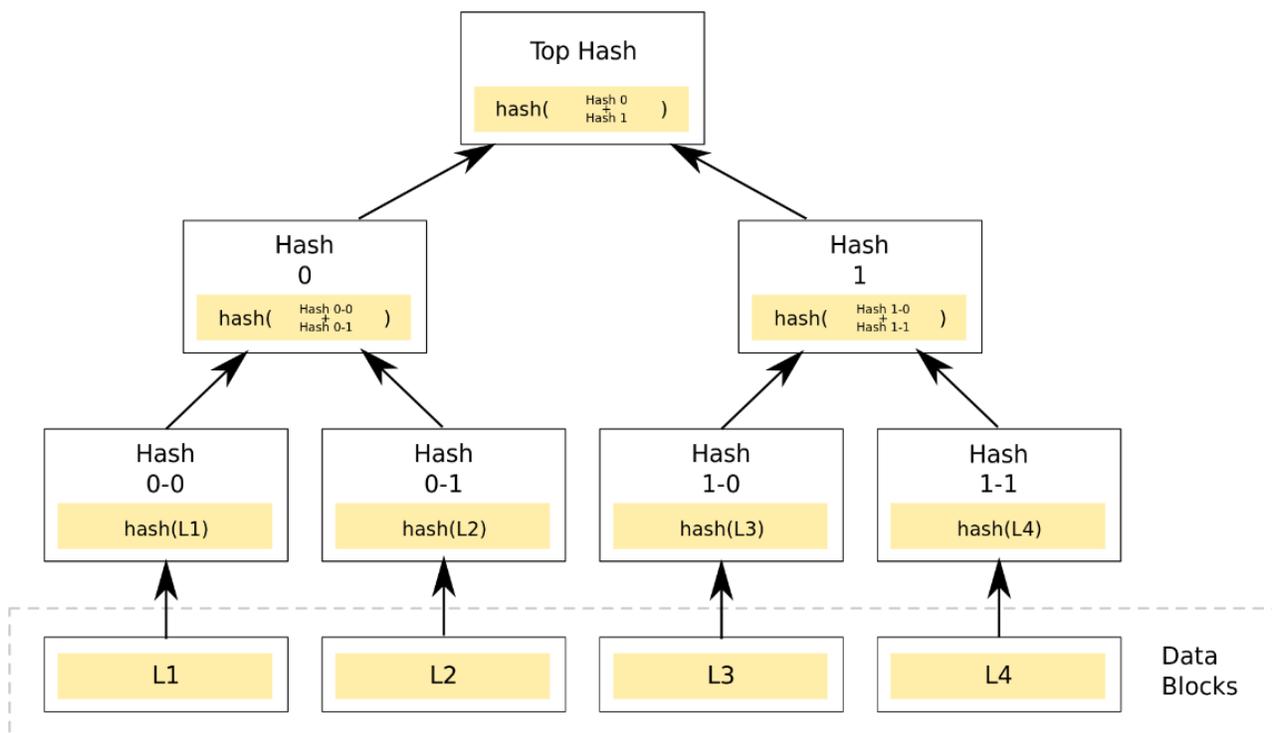

Fig3 Smart Contract Commands

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IV.   SMART CONTRACTS

One of the benefits of Ethereum blockchain is that there are no Third parties to pay, as it is a decentralized systembetween all approved parties. A lawyer and cryptologist, recognized that decentralized directories could be used for smart contracts, also referred to as self-executing contracts, blockchain contracts or digital contracts. In this format, contracts can be converted to computer code, stored and reproduced on the system, and monitored by the network of computers executing the blockchain. This also includes feedback from the directory, such as money transfer and receipt of the product or service. Smart contracts help you to trade money, property, stocks or anything of value in a transparent, conflict-free manner while avoiding the services of an intermediary. Smart Contracts not only define the rules and penalties for an agreement in the same way as a traditional contract, but also enforce it automatically

MERKLE TREE ALGORITHM.

A Merkle tree is a hash-based data structure. It is   a tree structure in which each leaf node is a hash of a block of data, and each non-leaf node is a hash of its data. Typically, Merkle trees have a branching factor of 2, meaning that each node has up to 2 data.Merkle trees are used in distributed systems for efficient data verification. They are efficient because they use hashes instead of full files. Hashes are ways of encoding the files that are much smaller than the actual file. Currently, their main uses are in peer-to-peer networks such as Tor, Blockchain and Git.Merkle trees are typically implemented as binary trees, as shown in the following image. However, a Merkle tree can be created as an n-nary tree, with n children per node.

Fig 4 Block diagram of Git.Merkle trees

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V.   TECHNICAL DETAILS:

In this method the best way of Technology and the techniques for creating a serverless social media using Ethereum Network, we are using the truffle framework to develop the application and also as the compiling agent to show the front end of the application. Not only truffle framework we are also using the ReactJS which is a front client to run the Blockchain Application in more than one terminal, because pure truffle doesn't migrate at a time more than one page, to Migrate about two to three pages we need external client such as React, Vue or AngularJS etc. React may give best test cases than any others so ReactJS is more preferable than any other JS client.

VI.   CONCLUSION AND FUTURE WORK:

Ethereum network is only on the basic development of the Serverless social media, where there will be more future work to make it as a full successful social media like Facebook, new to this society so there will be more development and new algorithms to be created. This scheme works only under the principle of data tokens where a user can post his news feed only will be saved as tokens here this project cannot make any image or video to be stored as token, it is not still proven that tokenizing of image or any multimedia file. If it may exist or invented by own it may get added.

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