SYNOPSIS

Report on

<<TWITTER CLONE>>

by

<<OORJA RAJORIA>> <<36>>
Session:2023-2024 (III Semester)

Under the supervision of

Prof. (Dr.) / Dr. / Mr. AMIT KUMAR
KIET Group of Institutions, Delhi-NCR, Ghaziabad

DEPARTMENT OF COMPUTER APPLICATIONS
KIET GROUP OF INSTITUTIONS, DELHI- NCR,
GHAZIABAD-201206
(2022- 2024)

ABSTRACT

The block chain is an innovative technology which opened doors to new applications for solving numerous problems in distributed environments. In this work, we design a blockchain based data storage and access framework Twitter application to remove its total dependence on a centralized repository. We use the public block chain and tools like Metamask, Solidity, Hardhat, and Ethereum IDE for deploying the contracts. In the proposed work, metadata of the files are stored on the block chain and we use the networks like Ropsten and Rinkebey for occurring the Transactions using a peer -to-peer networks. This will provide decentralized storage, distributed processing, and efficient lookup capabilities.

 Key Terms—Public block chain, Distributed ledger Technology, Decentralized system.

TABLE OF CONTENTS

Page Number

Introduction

The block chain is a peer-to-peer distributed ledger in which records called blocks are linked and secured using a cryptographic hash. By design, block chains are decentralized, secure, immutable and extremely fault tolerance making them suitable for record management activities i.e., financial transactions, identity management, provenance and authentication. Block chain can be deployed as permissionless (e.g., Bitcoin or Ethereum) or permissioned blockchain e.g., Hyperledger Project by The Linux Foundation. In permissionless or public block chain the actors in the system are not known. Anyone can join or leave the block chain network at any time, which may raise security risks in the network. However, in permissioned or private blockchain only known and identifiable set of participants are explicitly admitted to the blockchain network. This reduces the presence of malicious actors within the network. As a result, only authenticated and authorized actors can participate in the network which increases the security of the system as required by the enterprise applications. The interesting non-financial areas that leverage the opportunities of permissioned blockchains include health, government services, supply chain management, Internet of Things, peer-to-peer cloud storage and many more. The P2P cloud storage is an interesting application of blockchain as it provides a decentralized data storage facility without involving any trusted third party or a client-server architecture. The decentralized data storage will help to eliminate the most traditional data failures and outages by increasing the security, privacy, and control of the data.

Literature Review

Blockchain may well be viewed as a public ledger and each submitted dealings is place during a list of blocks. This chain develops as new blocks are mounted to that incessantly. With an awfully designed data storage structure, transactions in Bitcoin system might occur with no any third party and therefore the core innovation to construct Bitcoin is blockchain, that was initial planned in 2008 and dead in 2009. These days digital cash has become a stylish expression in each trade and profound world. In concert of the foremost eminent digital cash, Bitcoin has delighted an enormous success with its capital market achieving ten billion greenbacks in 2016. Asymmetric cryptography and distributed accord calculation are dead for consumer security and record consistency. The blockchain technology has key qualities of decentralization, persistence, anonymity and auditability. With these attributes, blockchain will considerably spare the price and enhance the productivity. As a matter of 1st importance blockchain is permanent. Dealings cannot be altered once it's stuffed into the blockchain. Organizations that need high responsibility and honesty will utilize blockchain to draw in purchasers. Moreover, blockchain is distributed and may avoid the only purpose of disappointment circumstance. Blockchain are often utilised in several money services as an example, advanced resources, settlement and on-line payment. Additionally, it may be applied into alternative fields as well as sensible contracts, public services, web of Things (IoT), name systems and security services. Those fields favour blockchain in multiple ways in which. It's been proved that miners might come through larger revenue than their justifiable share through inconsiderate mining strategy. Moreover, it's been shown that privacy escape might additionally happen in blockchain even users solely create transactions with their public key and personal key Tschorsch et al. created a technical survey regarding suburbanized digital currencies as well as Bitcoin. Nomura analysis Institute created a technical report regarding blockchain.

Project / Research Objective

My objective is to create a decentralized Twitter dapp which is an application where the users can create accounts on twitter and able to add the tweets, delete the tweets and able to send the messages from one account to another. As Block chain is decentralized technology and occur all the transactions with the help of ethers, we use networks like Metamask and Hardhat with ethers for occurring each and every transactions.

Research Methodology

In this project, I deployed the smart contract using Windows operating system. The tool named as Hardhat is used for deploying the smart contract in the OS. The project we proposed is more secured compared to normal twitter app. Decentralised application which provides more security and integrity. Only the authorized users can create accounts in Twitter and can able to send messages from one account to another account and also able to add and delete tweets. Ethers are main tokens used to perform each and every transactions in the Block Chain. Gas is the computational unit used in Ethereum for occurring the transactions. Compilation and migrations of smart contracts is the first step for deploying the contracts.

Project / Research Outcome

This twitter blockchain app will protect user's account from being compromised or hacked. Through this platform, our main vision is to provide security to the user's personal data in all possible ways. Using Metamask authentication which is a cryptocurrency wallet used to interact with the Ethereum blockchain ensures security. As this is totally based on blockchain undoubtfully it is more secure and safe. Although it have some procs and cons and have a long way to go but still a new step towards a more safe and secure advancing technology which is improving. Although it is difficult to understand and implement both for user and the developer but with time it will be more user friendly.

Proposed Time Duration

The proposed time duration for this project is 6 weeks.

REFERENCES

- F. Tschorsch and B. Scheuermann, "Bitcoin and beyond: A technical survey on decentralized digital currencies," IEEE Communications Surveys Tutorials, vol. 18, no. 3, pp. 2084–2123, thirdquarter 2016.

- Metamask – https://docs.metamask.io/guide/

- Solidity Documentation – https://docs.soliditylang.org/en/v0.8.12/

- Vercel – https://vercel.com/docs

- Blockchain – https://www.investopedia.com/terms/b/blockchain.asp

- Twitter Blochchain Documentation – https://twitter.com/hashtag/blockchain

- Ethereum Blockchain – https://aws.amazon.com/blockchain/what-is-ethereum/

- MetaMask Extension Provider – https://docs.metamask.io/guide/metamask-extension-provider.html

REFERENCES

<Sample Format>

1. Seonggeun Ryu, Kyung-Joon Park, and Ji-Woong Choi, "Enhanced fast handover for network mobility in intelligent transportation systems", IEEE Transactions on Vehicular Technology, Vol. 63, No. 1, pp. 357-371, January 2014, DoI: 10.1109/TVT.2013.2272059.
2. S. Kong, W. Lee, Y. H. Han, M. K. Shin, H. You, "Mobility management for all-IP mobile networks: Mobile IPv6 vs. Proxy Mobile IPv6, IEEE Wireless Communications Vol. 15, Issue 2, pp. 36–45, April 2008, DoI: 10.1109/MWC.2008.4492976