Banking System using Blockchain Technology

Under the supervision

of

Ms. AKANSHA DHAMIJA
ASSISTANT PROFESSOR, CSE

by

Rajat Kumar: 94
Navneet Lohchab: 97
Avnish Singh: 104
Pushan Verma: 114

Department of Computer Science & Engineering

Bhagawan Parshuram Institute of Technology

PSP-4, Sec-17, Rohini, Delhi-89

Table of Content

Introduction

Since 2008, Blockchain has gained immense interest due to exclusion of third-party organization participation in monitoring of the transactions.

A Blockchain is the "current" part of a Blockchain which records some or all of the recent transactions, and once completed, goes into the blockchain as a permanent database. Each time a new block is generated based on the completion of each block. Blocks are linked together in a linear fashion where each block contains a hash value of the previous block.

Current banking systems are based on central server mechanisms where all the personal information of account holders, his/her bank balance, and all other necessary information related to the bank are stored. All other branches are connected to the central server where every branch retrieves personal information, bank balance and history from the server. Failure in the central server causes all other branches to fall down which results in great damage to its users.

Ethereum is considered to be a state-transaction system. The objects in the Ethereum system are known as accounts. There are two main types of accounts: "externally owned accounts" and "contracts accounts".

Ethereum is a protocol which is based on Blockchain technology and has several benefits over other crypto-currency based system and is best suited for creating a secure lending system.

Thus, it provides a relationship on past transactions that happened and also, generates values belonged to a particular address. Some developers have begun looking at the creation of other different Blockchain that allows for trade-offs and improved scalability using alternative, completely independent. Blockchain, thus, allowing for more innovation. It secures the transactions in a way that any record of the transaction that occurred in the past, cannot be modified as the modification changes the hash of several blocks

REFERENCES

1. V. Buterin, "Ethereum: A Next Generation Smart Contract and
   Decentralized Platform," Github, Nov 2013.
   Available : https://gthub.com/ethereum/wiki/wiki/Ethereum-
   introduction.

2. D. Vujicic, D. Jagodic, and S. Randic, "Blockchain technology, bitcoin,
   and Ethereum: A brief overview," IEEE Xplore, Apr. 2018.

3. G. Fenu, L. Marchesi, M. Marchesi, and R. Tonelli, "The ICO
   phenomenon and its relationships with ethereum smart contract
   environment," IEEE Xplore, Mar. 2018.

4. S. Singh and N. Singh, "Blockchain: Future of financial and cyber
   security," IEEE Xplore, May 2017.

5. D. Vorick and L. Champine, "Sia: Simple Decentralized Storage,"
   Nebulous Inc, Nov. 2014.

6. S. Kulechov, R. Morano, and Q. Fang, "ETHLend.io White Paper -
   Democratizing Lending," Github, 25-Feb-2018. [Online]. Available:
   https://github.com/ETHLend/Documentation/blob/master/ETHLend
   WhitePaper.md.

7. E. Heilman, L. AlShenibr, and F. Baldimtsi, "TumbleBit: An Untrusted
   Bitcoin-Compatible Anonymous Payment Hub," Eprint Publication, Jun. 2016

Literature Survey

In paper[1] In 2013, V. Buterin published the paper "Ethereum: A Next-Generation Smart Contract and Decentralized Platform" where the author described an alternative to the Bitcoin system, which (Ethereum) provides turning complete smart contracts that run on the EVM

In paper[2] In 2018, D. Vujicic, D. Jagodic, and S. Randiz published "Blockchain technology, bitcoin, and Ethereum: A brief overview," where the authors explained to the fundamental overview of Ethereum.

In paper[3] In 2017, S. Singh and N. Singh focused on "Blockchain: Future of financial and cybersecurity" which published in IEEE Xplore.

In paper[4] In 2018, G. Fenu, L. Marchesi, M. Marchesi, and R. Tonelli published "The ICO phenomenon and its relationships with Ethereum smart contract environment" where the researchers interpreted the relationship among Ethereum smart contract and ICO phenomenon.

In the paper[5] D. Vorick and L. Champine researched on "Sia: Simple Decentralized Storage" which published in November 2014 where the author explained about Siacoin transaction.

In paper[6] S. Kulechov, R. Morano, and Q. Fang researched "ETHLend.io White Paper - Democratizing Lending" which is published in February 2018

In paper[7] In 2016, E. Heilman, L. AlShenibr, and F. Baldimtsi published the paper "TumbleBit: An Untrusted Bitcoin-Compatible Anonymous Payment Hub" where the author described TumbleBit

Problem Statement

The project aims to develop a banking system built with blockchain technology. A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger. The decentralised database managed by multiple participants is known as Distributed Ledger Technology (DLT).

A banking system will developed which will have a comfortable user friendly GUI build with react.js which will power the frontend that will help user to interact with the system , whereas using ethereum as our blockchain tech . The system built , will provide many functionalities to user i.e.

- ➢ **Registration/Login :** New users can register themselves and Old users can login.
- ➢ **Money Transfer:** After user will enter into his/her account . They can transfer money between different bank accounts
- ➢ **Bank Statements:** A person can view their Bank statement by requesting.
- ➢ **Change Password:** If a user forgets password , they can set a new password .
- ➢ **View Banking Details:** A user can view their Banking details , like account no. , Name of Bank , Bank code etc.

SOFTWARE REQUIREMENTS

1. NODE.JS

2. REACT.JS

3. JSON

4. API

5. JAVASCRIPT

6. SOLIDITY

7. TRUFFLE

8. WEB3 JS

9. VS CODE

10. GANACHE

Workload Matrix

Task	September				October				November				December			
	Department of Computer Science															
	Bhagwan Parshuram Institute of Technology															
	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4	W 1	W 2	W 3	W 4
Project Topic Selection	🟩	🟩	🟩													
Literature Survey			🟩	🟩	🟩	🟩										
First Defense							🟩									
Coding								🟩	🟩	🟩	🟩					
Report Writing												🟩	🟩			

Student Name	Responsibility	Time taken to achieve task assigned
Rajat Kumar	Blockchain and Coding	
Navneet Lohchab	Front End and Resource Collection & Management	
Avnish Singh	Blockchain and Coding	
Pushan Verma	Front End and Resource Collection & Management	