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SURVEY ON BLOCK CHAIN BASED BANKING SYSTEM

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ABSTRACT: ***Increasing digital technology has revolutionized the life of people. The banking system in today's world is open to threats of fraud and cyber-attacks. Since todays banking system is built on centralized databases, it is easy for an attacker to penetrate in any such database which will easily compromise all the information and data of the customers of the bank. This vulnerability of today's banking system can be reduced by re-building the banking systems on top of block chain technology, which will remove the centralized database architecture and decentralize the data over the block chain, thus reducing the threat of database being hacked. Since the transactions over the block chain technology is verified by each and every nodes of the chain, it will make the transactions more and more secure thus making the overall banking system faster and secure. [1]***

KEYWORDS: *Cyber security, Block chain, Banking system.*

I INTRODUCTION

One of the essential issues that the banking segment is confronting today is the expansion in misrepresentation and digital assaults. Presently, the greater part of managing an account frameworks are based on a centralised database, which makes them more defenceless to digital assaults as all data is put away locally in one place. Additionally, numerous banking frameworks are obsolete and are, in this manner, more helpless against new types of digital assaults. By building new managing account frameworks over block chain innovation, the possibility for extortion and information burglary can be decreased generously as the disseminated record innovation secures records; it stores, scrambles and checks each and every piece of information in an exchange. Accordingly, should any information rupture or false movement happen, it would be made promptly evident to all gatherings who have consent to get to the exchange information on the record. [1]

II RELATED WORK

Satoshi Nakamoto Bitcoin: A Peer-to-Peer Electronic Cash System.

The peer-to-peer version of electronic cash allows online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network time stamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work [2].

Blockchain: Future of Financial and Cyber Security.

Blockchain is a decentralized ledger used to securely exchange digital currency, perform deals and transactions. Each member of the network has access to the latest copy of encrypted ledger so that they can validate a new transaction. Blockchain ledger is a collection of all Bitcoin transactions executed in the past. Basically, it's a distributed database which maintains a continuously growing tamper proof data structure blocks which holds batches of individual transactions [3]

Blockchain Technology Innovations.

The Digital world has produced efficiencies, new innovative products, and close customer relationships globally by the effective use of mobile, IoT (Internet of Things), social media, analytics and cloud technology to generate models for better decisions. Block-chain is recently introduced and revolutionizing the digital world bringing a new perspective to security, resiliency and efficiency of systems [4].

Secure Digital Voting System based on Block-chain Technology.

This paper presents an effort to leverage benefits of block-chain such as cryptographic foundations and transparency to achieve an effective scheme for e-voting. The paper presents details of the proposed e-voting scheme along with its implementation using Multi-chain platform. [5]

Inter-Bank Payment System on Enterprise Block-chain Platform.

The Real-time gross settlement system (RTGS) is the cornerstone of inter-bank payment business. Financial institutions expect not only a simple migration from traditional RTGS to a block-chain platform, but a decentralized system with better confidentiality, instruction settlement finality, liquidity saving mechanism, and more efficient methods of gridlock resolution. In this paper, we

introduce an end-to-end IBPS prototype based on Hyper ledger Fabric enterprise block-chain platform. The prototype supports gross settlement, gridlock resolution, and reconciliation for inter-bank payment business. [6]

III PROPOSED SYSTEM

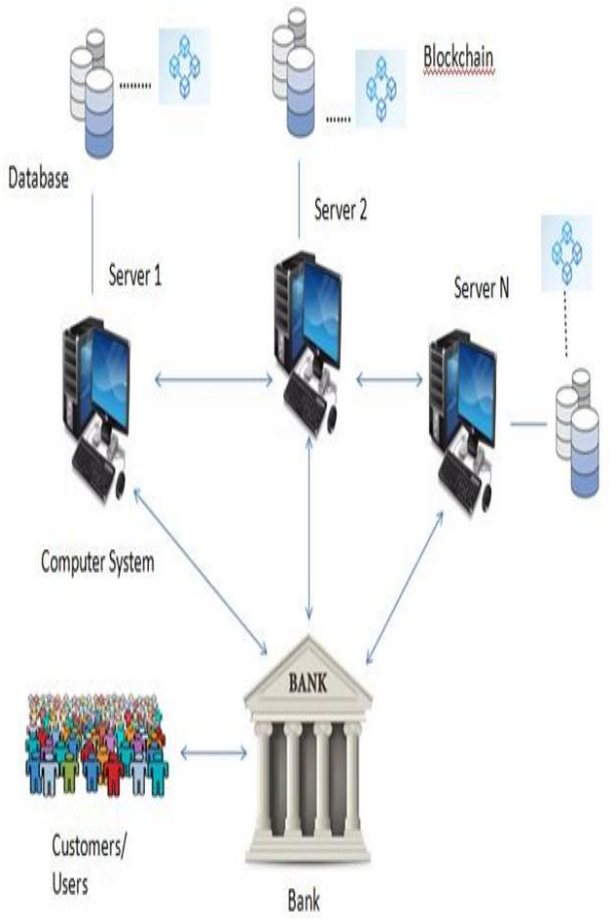

FIGURE 1: SYSTEM ARCHITECTURE

In the proposed system, the traditional architecture followed by banks which consists of a centralized database will be removed. The data will be largely distributed over the block chain which will make the banking systems decentralized. This will not only make the data more secure but also will remove the power centralization. The transactions over the block chain will be in form of encrypted tokens which will be verified by each nodes on the block chain. To make any transaction valid, the nodes of the block chain will have to give the proof of the processing it has done in order to verify the transaction. That proof will be taken in terms of the amount of processing done. The above mentioned transaction system has two benefits. Firstly it will make the transactions faster by removing the intermediate processes employed in the normal transactions and secondly it will become nearly impossible for an individual to hack the system as it will require a huge amount of processing power which no one has. [1]

IV MATHEMATICAL MODEL

Let S be the whole System,
Set S = {I, P, O} Where,
Input (I) represented as: I = {I0, I1, I2, I3, I4}

- I0 = User Registration Details
- I1 = User Login
- I2 = Transaction Id
- I3 = User transaction amount
- I4 = User transaction

Process (P) represented as: P = {P0, P1, P2, P3, P4}

- P0 = Login by user-side
- P1 = Approval of login
- P2 = visual cryptography
- P3 = block chain
- P4 = user transaction process

Output (O) represented as: O = {O0, O1, O2, O3}

- O0 = show user details
- O1 = receiver id
- O2 = user transaction successful
- O3 = view balance

V ALGORITHM

Input: a set N of users in the network
Input: a blockchain called B, bn is the last block on the blockchain
Input: T, the deadline of transaction

1. While CurrentTime() < T
2. Foreach n∈ N
3. ..umOfTransaction← Dotransaction();
4. Foreach numOfTransaction ∈ Transaction
5. $transaction_{max}$←compare(numOfTransaction);
6. m ← SelectMiner();
7. b_{n+1} ← GetTrans(α);
8. B' →AddBlock(m, B, b_b);
9. Foreach n ∈ N
10. Broadcast(n)

VI CONCLUSION AND FUTURE WORK

The proposed system designed to provide a secure data and a trustworthy banking system. Block chain itself has been used in the bitcoin system known as the decentralized Bank system. By adopting block chain in the distribution of databases on banking systems one can reduce the cheating sources of database manipulation.

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