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Security Management for Transaction and KYC using Block Chain Technology

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ABSTRACT: Blockchain technology is expected to become extremely popular and influential in computing applications used in the financial sector. The digital economy is quickly becoming a need in today's world. Therefore, there are more opportunities for the security level to decline as the use of the digital world grows. Therefore, as digitalization is used more, there are more frauds and less security.

Leaks of personal information in some instances have reemphasized the security concerns with the various identity-sharing platforms. Customers are required to provide their identities so that various agencies can verify them. Therefore, the KYC procedure involves identifying the user. and hence offers the necessary protection.

The KYC methods used by banks are entirely dependent on sluggish encryption, which increases the risk of consumer information being lost to third-party financial organisations. Blockchain technology, which has the potential to automate many manual operations and is impervious to hackers of any kind, can make this system efficient. The distributed ledger and immutable blockchain block are the ideal addition to the KYC procedure. Fraud detection can be automated with the addition of smart contracts.

We can use any type of KYC to store identity information. Therefore, banks can create a shared private blockchain within the bank's walls and use it to validate papers. This makes it easy for banks to access the documents they need for compliance while simultaneously giving users control over their sensitive documents.

KEYWORDS–Blockchain, KYC verification, Security, Privacy

I. INTRODUCTION

A. Overview

A Blockchain-based security management system is used to implement the KYC procedure in a more straightforward and secure manner while also securing bank transactions. Blockchain technology is a novel innovation that relies on economic, mathematical, and cryptographic concepts to maintain databases between multiple participants without the involvement of a third party or central authority. It is a secure distributed database that is tamper-evident, allowing parties to a transaction to confirm the legitimacy of the transaction.

Banks' Know Your Customer (KYC) procedures are pointless, difficult to administer, and expensive. As a result, a system is suggested to automate simple activities and enable the sharing of KYC-related data. With its distributed database and time-stamped ledgers concept, blockchain technology can significantly improve the KYC process for banks.

One of the key responsibilities of the bank is to secure the security of customer data, confidentiality, and account status in order to ensure their safety and integrity during the interchange and processing of information. Therefore, information security can be achieved by utilising the capabilities of cutting-edge information technology, specifically the Blockchain technology.

B. Motivation

KYC procedures are typically laborious, repetitive, incompatible, and duplicative, which increases administrative costs and overhead. With its immutable ledger, simplicity of integration, and significantly cheaper operating and infrastructure expenses, a blockchain-based solution is unquestionably a superior choice than the current KYC procedures.

Each bank must organize the security of the data it holds, such as the status of its customers' accounts, their transaction history, etc., because banking information has always attracted the attention of intruders. Blockchain is a distributed shared ledger that records transactions to an unbreakable, permanent chain that can be viewed by the parties to a transaction. This technology can address the weaknesses in transactional cyber-attacks.

II. RELATED WORK

R.Alvaro-Hermana, J. Fraile-Ardanuy, P. J. Zufiria, L. Knapen, and D. Janssens offer the idea of two electric car configurations that significantly reduce the impact of the charging process on the power grid during business hours. All users involved in the trading process will benefit financially from this trading strategy. Predicting the daily schedule and travels of a synthetic population for Flanders uses an activity-based technique (Belgium) [1].

Y. Xiao, D. Niyato, P. Wang, and Z. Han Analyze the potential flow and functional elements that communication networks can use to enable DET. Different design concerns regarding how to apply DET in practise are highlighted. A perfect method is developed for delay-tolerant remote control communication systems, in which every remote powered device can plan its information-transmission and energy-exchanging operations according to the availability of current and future energy sources [2].

J. Kang, R. Yu, X. Huang, S. Maharjan, Y. Zhang, and E. Hossain describes a project that aims to respond to requests by incentivizing PHEVs to change local power demands in their own self-interests. However, given the real difficulties with exchange security and security insurance, they look at a prospective consortia block-chain innovation to increase exchange security without relying on a trusted outsider. To depict the specific activities of limited P2P power trading, a framework for restricted P2P electricity trading with a consortium block-chain (PETCON) technique is provided[3].

N. Z. Aitzhan and D. Svetinovic provides a piece of work that deals with the problem of transaction security in decentralised smart grid energy trading without relying on reliable third parties. We have created a proof-of-concept for a decentralised energy trading system employing blockchain technology, multiple signatures, and anonymous encrypted messaging flows. This system allows peers to securely conduct trade transactions while maintaining their anonymity when negotiating energy prices [4].

M. Mihaylov, S. Jurado, N. Avellana, K. Van Moffaert, I. M. de Abril, and A. Now showcases NRG-coin, a piece of work that illustrates decentralised electronic money. NRG-coins, whose value is imprinted on an open cash trade market, are used by consumers in the smart grid system to exchange privately generated sustainable energy sources. Similar to bitcoins, this currency offers a number of advantages over fiat money, but unlike bitcoins, it is created by injecting energy into the matrix rather than by distributing energy based on computing impact. They also create a revolutionary method of swapping worldviews when buying and selling environmentally friendly energy in the smart grid network[5].

S. Barber et al gives a piece that claims Bit-coin is a solitary form of electronic cash that has drawn in a sizable following. They do a thorough investigation to understand what made Bitcoin so successful, despite years of study on cryptographic e-money failing to result in a widespread appropriation. Additionally, they inquire as to how Bitcoin might be a respectable candidate for seemingly endless stable currency[6].

I. Alqassem et al shows how various Bit-coin libraries, APIs, and optional uses are being developed, and how Bit-coin is continually upgraded via an open source network. All things considered, since the distribution of the authority whitepaper, there hasn't been a forthcoming convention comparison or design description. The project shows an in-depth examination of the Bit-coin framework's convention detail and architecture. We view this research as the first step in establishing the standard design for cryptographic currency [7].

K. Croman et al presents a work that the expanding fame of block-chain-based digital forms of money has made versatility an essential and earnest obligation. The work ponders how essential and incidental bottlenecks in Bit-coin restrict the ability of its present distributed overlay system to Higher throughputs and shorter latencies are greatly appreciated. These findings suggest that re-parameterization of square size and interruption should only be viewed as a

first step in achieving future people. Real advancements would also necessitate a fundamental reevaluation of technical approaches[8].

G. W. Peters and E. Panayi shows a work that provides a diagram of the concept of block-chain innovation and how it might disrupt the world of account management by promoting global cash settlement, cunning contracts, automated record-keeping for money, and cutting-edge tools. In this way, they first provide a brief summary of the key components of this innovation as well as the second-generation contract-based improvements [9].

L. Luu et al introduces ELASTICO, a work that offers a different widely used understanding standard for authorization-less block chains. The number of exchange squares selected per unit of time increases as the computation control in the system increases in ELASTICO, which scales exchange rates directly with accessible estimation for mining. When it comes to system communications, ELASTICO is effective, allowing sophisticated enemies to use up to one-fourth of the total computational power [10].

III. PROPOSED SYSTEM

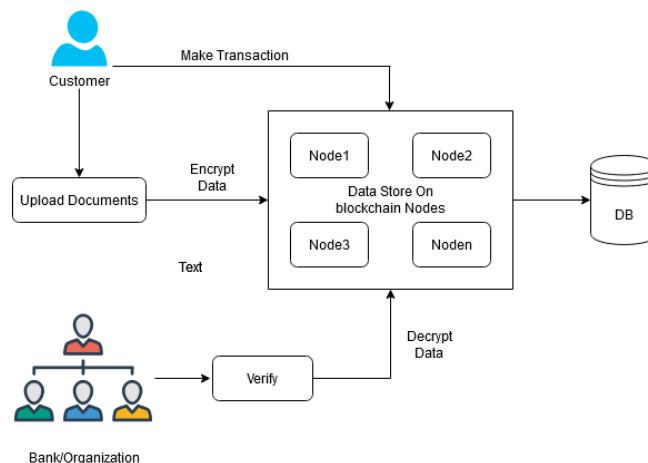


Fig. System Architecture

- In the proposed system, a block chain-based KYC method is used, in which each customer uploads data files and encrypts them using a unique key.
- We suggest a successful search strategy that can be used to achieve both security preservation and pertinent searches.
- In this framework, the server is allowed to successfully integrate numerous encrypted records and conduct the investigation without revealing any sensitive user information, information documents, or questions.

IV. CONCLUSION

Today's Blockchain is similar to the Internet in its early 20s in many aspects. Every day, the advancement of information technology and internet commerce has a greater and greater impact on all aspects of contemporary life. Blockchain technology aims to challenge the conventional understanding of how users communicate with one another online. The primary benefits of Blockchain technology, regardless of mining and tokens, are the total synchronisation of operations, integrity, and uniqueness of all processed information. In terms of data storage, synchronisation, loss, and integrity, distributed databases can be improved with the use of blockchain technology.

Although it is still early, business leaders are funding a wide range of blockchain use cases that are supported by business associations. We believe the promise is evident, but the blue sky is too far away, and businesses need to demonstrate use cases and business/technical feasibility before deploying blockchain. We have seen the potential of this technology and the limitations.



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