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Survey Paper on Anti Money Laundering System using Blockchain

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Abstract: *An Anti-Money Laundering (AML) system using blockchain technology provides a decentralized and transparent platform for tracking and verifying financial transactions. The traditional AML systems rely on manual processes, which are inefficient and prone to errors. The use of blockchain technology, smart contracts, and Know Your Customer (KYC) procedures can help to prevent financial crimes by enforcing AML regulations in a secure and efficient manner. The proposed AML system using blockchain can address the problems associated with the lack of transparency, limited accessibility, time-consuming KYC procedures, inefficiencies in transaction monitoring, lack of interoperability, limited data privacy, and limited ability to track cross-border transactions. By leveraging blockchain technology, financial institutions can comply with regulatory requirements and prevent financial crimes, ultimately contributing to the stability and integrity of the financial system.*

Keywords: Blockchain, Anti-money laundering (AML), Smart Contract, Fraud Detection

I. INTRODUCTION

MONEY LAUNDERING is the method where by cash gotten through unlawful the exercise is managed to create it to show that it comes from an official source. There are packages on how to do this. Perhaps the only way to record this illegal activity as deals made by real traders? Given that the payoff is within the reasonable level of desire, such tests are very difficult to detect without making a thorough review. It is for this reason that this is the MONEY LAUNDERING location is so troublesome. Generally speaking, cash is washed at whatever point a individual or trade bargains in any way with another person's advantage from wrongdoing. That can happen in a endless number of assorted ways. Customarily MONEY LAUNDERING has been depicted as a Prepare which takes put in three particular stages. II. Motivation and Challenging Stages to Launder Money Placement, the arrangement at which criminally inferred reserves is presented within the money related framework. Layering, it is the basic methodology and way of organizing the property to be washed, and its proprietorship and source is camouflaged. Integration, ultimately the laundered, property is reintroduced in organized manner into the true legal economy which is a fully regulated process where the 'washed' property is re-introduced into the true legal economy. This three-pronged definition of Money laundry is extremely simplified. The fact is that the so-called categories often cover and in a few cases, in order to be illustrated in cases of financial violations, there is no need for the continuation of evil to be 'set'[7].

The globalization of the world economy, as well as the advancement of information and telecommunication technologies, have resulted in both positive and negative changes. One of them is money laundering, which poses a significant threat to the state's financial and economic stability and has an impact on the level of socioeconomic development. It includes suspicious or secretive behaviour by an individual regarding money matters, making large cash transactions, owning a company that appears to serve no real purpose, conducting overly complex transactions, or making several transactions just below the reporting threshold. Our blockchain-based anti-money launderingsystem aids in the security of suspicious transactions and all associated information. Here, our system helps in monitoring all of the customer's transaction patterns and determining whether any suspicious activity is taking place.

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II. LITERATURE REVIEW

A block chain is basically a list (series) of digital records (blocks), in which each record stores transaction details. A large block chain network is still distributed and operated online. Each record is verified by a network in accordance with a specific protocol, published on distributed ledgers (shared and synchronized digital data).verifies the authenticity of the transaction ("power-enabled trust system"). The financial transition procedure can change drastically basic structure of economy [1].

A blockchain is not just one concept, but a combination of many concepts such as cryptography, mathematics, networking, distributed synchronization technology, algorithms etc. [2]. It attempts to resolve problems by synchronizing database delivery in a distributed manner. The characteristics of Block chain a) There is transparency b) Distributed c) It is autonomous d) It is immutable e) anonymous f) Open source WORKING OF BLOCKCHAIN Here are the important concepts of working of block chain: 1. The record: It can be any information or a deal 2. The Block: It is a list of bundle of records 3. The chain: When all the blocks are connected together, they form a series of chain. The process steps: 1 Ina trade, record is created; Mr A sells Mr B his three coins for 2000 Rs. This record lists details including a digital signature for each participating group. 2. This record will be checked online. Nodes - computers on a network, which will look at record or commercial information, to ensure the authenticity of the trade. All blocks will contain a different code called a hash. Contains the hash of the previous chain block. 3. At this stage, the block is now added to the blockchain. The hash code will connect the blocks in the correct order. In this process, the hash code will keep the record safe. No matter the size of the record, the hash code will have the same size for each record. Any changes to the original record will produce a new hash. And to ensure data security, one needs to change the hash of previous records as well. Eventually this will change the entire set of hash. Therefore, the hash will specify whether the data has been changed or not. In this way, it will ensure the safety of the records. In the October 2018, The Financial Action Task Force (FATF), the non-governmental organization responsible for money laundering (AML) and counter-terrorism finance laws, announced on June 1 that it would issue guidelines on clear assets. [3] if an asset has no legal status elsewhere can be sold , trasnffered are used for payment or investment anywhere.[4]

Blockchain technology is one of the basic technologies that allows clear assets to operate as exchange using blockchain technology. However, this initiative poses some risk of criminal abuse, especially in the case of money laundering, which hides the source of profits through illegal exercise. The essence of the current AML regulations is that provinces must have money laundering, monitor suspicious transactions and cooperate with other provinces, especially in the exchange of information. Internationally, these responsibilities will be determined at the United Nations Conference on Combining Drug Trafficking and Attitudes. [5] and the Conference on the Elimination of All Forms of Crime. As a result of the 9/11 attacks in accordance with Adoption 3 of UN Security Council Resolution 13, AML's provisions were also included in the Terrorist Economic Pressure Agreement [pressure] and Terrorist Financing Acts. [6] In its forty recommendations and guidelines, the FATF sets the standard for compliance with these rules. They are not legally binding, but are in line with the provinces because standards are imposed on the world economy and noncompliance affects financial markets. According to the FATF's recommendations, financial institutions must verify customer identities and report suspicious transactions to their National Financial Intelligence Unit (FIU, National Center for Identification and Analysis of Money Laundering and other financial matters). These rules are called your customer / suspicious activity reporting or KYC / STR responsibilities. If found in violation, financial institutions may commit a criminal offense under applicable domestic law. Generally, restrictions apply when an offender implements a blockchain system to conceal the arrival of illicit profits.

III. ANALYSIS OF PROBLEM

The following are some of the problem statements that an anti-money laundering (AML) system using blockchain can address:

Lack of transparency: The traditional financial system lacks transparency, making it difficult to track the flow of funds and identify potential money laundering activities.

Limited accessibility: The current AML systems are centralized, making it difficult for smaller financial institutions to comply with AML regulations due to high costs and resource constraints.

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Time-consuming KYC procedures: The Know Your Customer (KYC) procedures in the traditional financial system can be time-consuming and may result in delays in transaction processing.
Inefficiencies in transaction monitoring: The current AML systems rely on manual processes, which are inefficient and prone to errors. This can result in false positives or false negatives, leading to missed or incorrectly flagged suspicious transactions.
Lack of interoperability: The current AML systems operate on different platforms, making it difficult to share information and collaborate effectively between financial institutions and regulatory bodies.
Limited data privacy: The centralized AML systems store sensitive customer information in a central database, which is vulnerable to data breaches and hacking attacks.
Limited ability to track cross-border transactions: The traditional financial system makes it difficult to track cross-border transactions, making it easier for criminals to move funds across borders undetected.
By leveraging blockchain technology, an AML system can address these problems by providing a transparent, decentralized, and secure platform for tracking and verifying financial transactions. The use of smart contracts, KYC procedures, and transaction monitoring algorithms can also improve efficiency and reduce costs while ensuring compliance with regulatory requirements.

IV. METHODOLOGY

- Gathering Requirements: We will gather and record the requirements for the anti-money laundering system at this phase. We shall determine the requirements and objectives of the banks, officers, and users of the system. To collect the required data, this will entail holding meetings, surveys, and interviews.
- After gathering the requirements, we will do a system analysis to establish the features the system should have. In addition, we will choose the frameworks, databases, and programming languages that will be used to develop the system.
- Design: We will develop a thorough design for the anti-money laundering system at this phase. This will entail developing the database structure, creating diagrams and prototypes of the user interface, and system architecture.
- Development: We'll start constructing the system as soon as the design is finished. Code creation, database configuration, and infrastructure setup will all be required for this.
- Testing: During this stage, we'll test the system to make sure it complies with the specifications and runs well. Unit testing, integration testing, and system testing are just a few of the testing techniques we'll use.
- When the system is ready to be used and has undergone extensive testing, we will deploy it to the production environment. To guarantee that users can utilise the system properly, we will also offer training and assistance.
- Maintenance: After the system has been put into place, we will continue to offer maintenance and support to make sure it keeps working properly.

V. PROPOSED WORK

An anti-money laundering (AML) system using blockchain technology can help prevent financial crimes by providing a secure and transparent platform for tracking and verifying financial transactions. Here's a proposed work for an AML system using blockchain:

- Identify the requirements: The first step in designing an AML system using blockchain is to identify the regulatory requirements for AML compliance. These may include Know Your Customer (KYC) regulations, monitoring and reporting of suspicious transactions, and maintaining transaction records.
- Select a blockchain platform: Choose a blockchain platform that is suitable for your AML system based on its features, scalability, and security. Ethereum, Hyperledger Fabric, and Corda are some of the popular blockchain platforms for developing AML systems.
- Design smart contracts: Develop smart contracts to enforce AML regulations on the blockchain. These contracts will facilitate transactions and automatically trigger AML checks and alerts when necessary.

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- Implement KYC procedures: Use the blockchain to create an immutable and decentralized KYC database that stores information about the customer's identity, such as name, address, and identification documents.
- Monitor transactions: Monitor transactions in real-time and flag suspicious transactions based on predefined rules. This can be done using machine learning algorithms that can detect patterns and anomalies in transaction data.
- Generate reports: Generate AML reports that can be used to identify patterns and trends in financial transactions. These reports can be used to identify potential money laundering activities and help financial institutions comply with regulatory requirements.
- Maintain compliance: Continuously monitor and improve the AML system to ensure that it remains compliant with regulatory requirements. This may involve periodic audits, updates to AML policies, and training for staff.

Overall, an AML system using blockchain technology can provide a secure and transparent platform for tracking and verifying financial transactions. By implementing smart contracts and KYC procedures, monitoring transactions, and generating reports, financial institutions can better comply with regulatory requirements and prevent financial crimes.

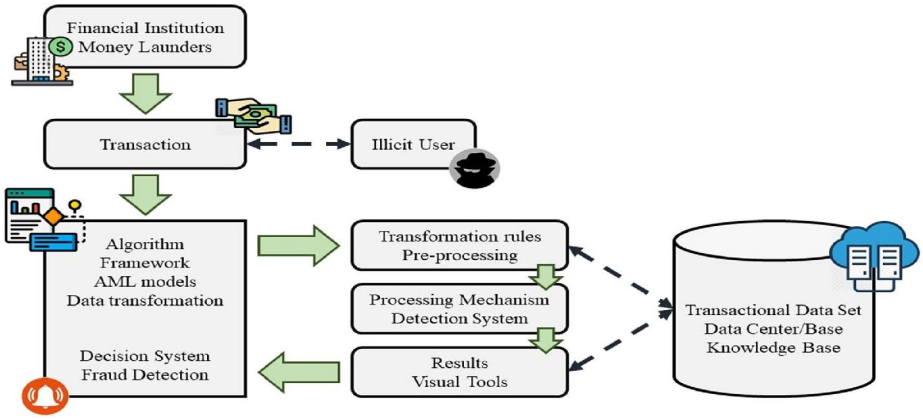

Fig.1 The general concept of the money laundering and fraud detection model

VI. CONCLUSION

In conclusion, our blockchain-based anti-money laundering system is an innovative solution to prevent financial crimes and illegal activities. With the globalization of the economy and advancements in technology, the threat of money laundering has become more prevalent, and it is crucial to implement effective measures to combat it. We hope that our system will contribute to enhancing financial stability and promoting socio-economic development.

In this paper we have discussed that block chain can play a very significant role in preventing money laundering by enhancing the transparency of transactions. Money laundering is one of the primary problems faced by the banking institutions and other fintech companies. On completing the KYC process on block chain, financial organizations can rest assured as the information entered on the ledgers cannot be edited but only updated. By using this technology, companies can rest assured that their KYC processes are completing as soon as possible and their AML regulations remain up to the mark. After knowing about why block chain should be used in KYC and anti-money laundering, companies and authorities should now try to know about how they can leverage the same in their organizations and prevent money laundering and fastening their KYC process. Our narrative is that in future block chain which is distributed ledger can be implemented with its level of maturity in transactions and internet of things. Block chain has a great potential to yield major outcomes in near future[7].

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