SECURE KYC USING BLOCKCHAIN TECHNOLOGY

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***Abstract*- The know your customer or know your client (KYC) is a guideline for the banking system to validate a customer using identity, appropriateness, risk assessment in establishing a banking relationship. With the growing concern of security, the KYC process is complex and involves a high cost for completing for a single customer. In this work, we propose an economical, swift, secure, and transparent platform for KYC document verification for the Banking system through InterPlanetary File System (IPFS) and blockchain technology. The proposed system allows a customer to open an account at one Bank, complete the KYC process there, and generate a hash value using the IPFS network and share it using the blockchain technique. Upon receiving the private key, any Bank/financial organization can retrieve, store customer data (i.e., KYC) securely using IPFS network if the customer wishes to open another account in that Bank/financial organization. The proposed system can save time, money, and repetitive work during the KYC process when someone tries to open an account at multiple Banks.**

***Key Words*: KYC, IPFS, DLT**

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INTRODUCTION

A bank generally serves to a large client base in both retail and corporate sector. The 'Know Your Customer' process, also known as KYC, which helps the institution to verify identity of client. KYC is a Regulatory and legal requirement that must be fulfilled by the companies or financial institutions for both new and existing clients. The major challenge faced by banking sector is increased regulatory

cost of KYC process that has negative impact on business. The aim of this paper is to propose a new approach to the KYC verification process. We introduce a system, based on DLT that proposes a solution to the increased costs of the KYC process and the lack of customer satisfaction. The key reason for using DLT is that it allows us to observe the KYC cost structure at an aggregate level for all the financial institutions operating in a jurisdiction and to tackle the inefficiencies that emerge from the duplicated conduct of similar tasks by all participating institutions (i.e., DLT allows us to render the execution of duplicated tasks completely unnecessary, and this delivers far greater cost savings than would any effort to merely make these duplicated tasks more cost efficient)

Aims to be accomplished in our project are as follows: "we are intended to do this. We propose a solution based on Blockchain technology, which reduce the traditional KYC verification process cost. The Major addition to it is that the whole verification process is conducted only once for each customer, irrespective of the number of institutionsthey register and thereby increasing the transparency by securely sharing the results through DLT. This approach involves proof of concept (POC) with ethereum. This process reduces cost overhead, improved customer experience and increases transparency. The 'Know Your Customer' process, also known as KYC, which helps the institution to verify identity of client. KYC is a Regulatory and legal requirement that must be fulfilled by the companies or financial institutions for both new and existing clients.

1. PURPOSE

Know your client (KYC) is a guideline for the banking system to validate a customer using identity, appropriateness, risk assessment in establishing a banking relationship. With the growing concern of security, the KYC process is complex and involves a high cost for completing for a single customer.

1. To Secure and faster for sharing sensitive information.
2. To allow customer and business institute to verify record customer record.
3. To allow third party verification.
4. More Secure due to block chain**.**

Pervasive Decentralization of Digital Infrastructures: A Framework for Blockchain Enabled System and Use Case Analysis.

Blockchain technology recently draws the attention of the public, as a dispute that leads to the foundation that the trust - free economical transaction is possible with its distinctive method.

A lightweight multi-tier s-mqtt framework to secure communication between low-end iot nodes

OBJECTIVE OF SYSTEM

- Banks find the whole process extremely cost effective.
- The process is much smoother for customers as
- They need to upload their details only once.
- The scope of popular KYC methods like eKYC is
- Limited to India but this solution can be applied
- Globally without any restrictions.

LITERATURE SURVEY:

This segment discusses how many researchers have worked on various MLalgorithms for disease diagnostic. It has been acknowledged by researchers that machine-learning algorithms perform well for the diagnosis of various diseases. Diseases identified by MLT in this survey paper are heart and diabetes. 3.1. Heart Disease Otoom

[2] introduced a framework for research and tracking purposes. This proposed device detects and tracks coronary artery disease. UCI is extracted from the Cleveland heart data collection. This data set is made up of 304 cases and 77 features/attributes. Out of 76 features, 14 characteristics are used. For detection purposes, two experiments are performed with three algorithms: Bayes-Net, SVM, and FT. For identification, the WEKA tools is used. 88.3 percent accuracy is reached by using the SVM techniques after practicing with the Holdout test. The precision of 83.8 percent is given by both SVM and Bayes-Net in the Cross Validation test. After using FT, 81.5 percent accuracy is achieved. Using the Best First selected algorithm, FT.7 best characteristics are collected by and Cross-validation Checks are used for evaluation. Bayes Net achieved 84.5 percent accuracies by apply the test to 7 best selected feature, SVM offers 85.1 percent accuracies and FT properly classifies 84.6 percent. Vembandasamy

[3] proposed a research was conducted using the Naïve-Bayes algorithm to identify heart diseases. In Naïve-Bayes, Baye's theorem is included. Therefore, the Naïve-Bayes have a strong presumption of freedom. The data collection used was collected from one of Chennai's leading diabetics research institutes. 500 patients are part of the data collection. By using 70 per cent of Percentage Split, Weka is used as a method and executes classifying. Naive Bayes provides 86.419% precision. Tan

[4] proposed in which two ML algorithms called Genetics Algorithm (GA) and SVM are effectively joins by using the wrapper method, the proposed hybrid strategy. In this study, LIBSVM and the WEKA data mine tool are used. For this analysis, two data sets (Diabetes disease, Heart disease) will be obtained from the UC Irvine ML repository. An 84.07 percent precisions for heart disease is achieved after using the GA and SVM hybrid strategy. 78.26 percent accuracies are reached for a diabetes data collection. And some of the benefits are that it is a binary classifier to create right classifier and less over-fitting, resilient to noise and the drawbacks are. It may use pair wise identification for the classification of multi-classes. The cost of computation is high, so it works slowly. 3.2. Diabetes Disease Iyer

[5] is using decisions trees and Naïve-Bayes, they conducted a job to predict diabetes disease. Diseases arise when there is inadequate insulin production or there is excessive use of insulin. The Pima India diabetes data set is the data set used in this work. Various experiments were carried out using the data mining tool WEKA. The percentage division (71:31) predicts better than cross-verification in this data collection. By using Cross-verification and Percent Splitting Respectively, J48 indicates 74.8698 percent and 76.9565 percent precision. By using PS, Naïve-Bayes provides 79.5653 percent precisions. By using percent split checks, algorithms demonstrate the highest precision.

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PROPOSED SYSTEM

- Know your client (KYC) is a guideline for the banking system to validate a customer using identity, appropriateness, risk assessment in establishing a banking relationship. With the growing concern of security, the KYC process is complex and involves a high cost for completing for a single customer.

SYSTEM ARCHITECTURE

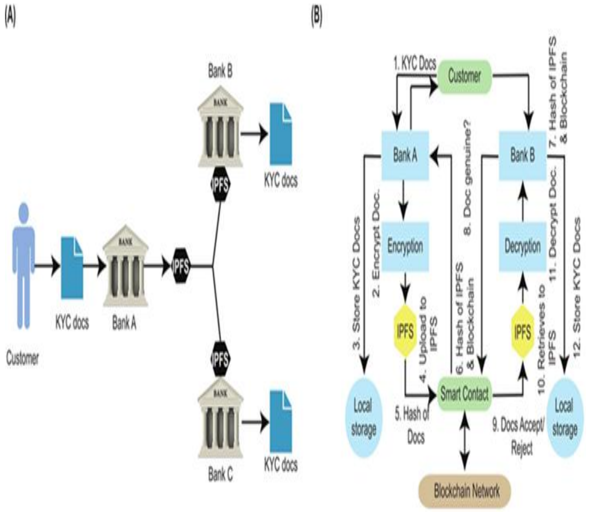

Fig -1: System Architecture Diagram

The aim of this paper is to propose a new approach to the KYC verification process. We introduce a system, based on DLT, that proposes a solution to the increased costs of the KYC process and the lack of customer satisfaction. The key reason for using DLT is that it allows us to observe the KYC cost structure at an aggregate level for all the financial institutions operating in a jurisdiction and to tackle the inefficiencies that emerge from the duplicated conduct of similar tasks by all participating institutions (i.e., DLT allows us to render the execution of duplicated tasks completely unnecessary, and this delivers far greater cost savings than would any effort to merely make these duplicated tasks more cost efficient). Specifically, DLT enables the creation of

a chronological, decentralized, interbank ledger in which Financial institutions that need to conduct the same. partitioned according to the BTC cube. The frequent itemset mining algorithm is run for all BTC cube data Data integration: currently, several third-party data providers and external validation agencies offer data and interfaces to extract the required customer information. However, banks struggle to integrate this data to obtain a consolidated view of the customers. This has led to increasing instances of banks' failure to comply with regulatory requirements, resulting in huge penalties and reputational damage

Expensive technology:

post due diligence, banksneed to digitize data in the documents to feed it into the repositories. This is an expensive exercise, as it uses advanced technology platforms. Evolving regulation: the KYC landscape is constantly facing new regulation across different jurisdictions. Therefore, KYC utilities need to keep updating their guidelines. This increases the need for banks to improve their data collection mechanisms for effective risk management and timely compliance.Fragmented approach: banks do not have a single, unified KYC system for its various lines of business like wealth management, asset management, and brokerage. Maintaining these multiple systems and integrating different interfaces puts banks under immense pressure and adds costs. Blockchains are a digital technology that combines cryptographic, data management, networking, and incentive mechanisms to support the checking, execution, and recording of transactions between parties. Blockchain technology ensures the elimination of the double-spend problem, with the help of public-key cryptography, whereby each agent is assigned a private key (kept secret like a password) and a public key shared with all other agents. The validity of the information stored on a blockchain's ledgers is ensured by the network's nodes with the help of a secure hash algorithm (SHA). Blockchain technology uses an SHA to translate the contents of a block into a cryptographic fingerprint referred to as a 'hash'. An SHA can also be used to generate from a digital document a unique 'fingerprint' of that document, such that this fingerprint cannot be replicated unless it is generated from the exact same document. This ensures that all of a blockchain's participants can easily verify the authenticity of any document previously hashed simply by hashing it again and comparing the hash they generate to the hash that was previously generated using the authentic document. Further, the hash does not reveal any information about the contents of a document, just as analyzing a human fingerprint can help one to prove the identity of an individual but fails to reveal

ADVANTAGES

- Easy to used system
- Avoid the internet

SYSTEM REQUIREMENTS

- **Software Used:**

1. Operating System: Windows XP and later versions   Front End: HTML,CSS
2. Programming Language: Jsp and Servlet
3. Tool: Netbeans IDE
4. Domain: Secure Computing
5. Algorithm: Blockchain

- **Hardware Used:**

1. Processor – i3 or above
2. Hard Disk – 150 GB
3. Memory – 4GB RAM

ALGORITHMS

Timestamp x`: Current time as seconds in universal time.
◦ **nBits:** It is a target threshold of a valid block hash.
◦ **Nonce:** It is a 4-byte field, which starts with 0 and increases for every hash calculation.
◦ **Parent Block Hash**: 256-bit hash value that point to previous block.

CONCLUSION

Blockchains represent the future of transactions and are beginning to transform entire industries. Consequently, there is considerable interest in exploring blockchains for various industry use cases. They are particularly useful in supporting multi-party business transactions where the entities need not trust each other. The immutable, cryptographically secured, and replicated, ledger, consensus to validate transactions, and permissioned access are all attractive salient attributes for enterprises to consider blockchains as the future transaction network..

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