SECURE E WALLET ARCHITECTURE USING BCT

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ABSTRACT

A cashless society is one in which financial transactions are conducted without the use of real money, such as banknotes or coins, but rather through the exchange of digital information (usually an electronic representation of money) between the parties involved. Since the birth of human civilization, cashless societies have existed, based on barter and other types of exchange, and cashless transactions are now possible with the usage of digital currencies like bitcoin. However, the term "cashless society" is used in this article to refer to a society in which cash is substituted by its digital equivalent—in otherwords, legal tender (money) exists, is recorded, and is only exchanged in electronic digital form and the consequences of sucha society Such a concept has gotten a lot of attention, especially because digital methods of recording, managing, and exchanging money are becoming increasingly popular in commerce, investment, and everyday life in many parts of the world,and transactions that would have been done with cash in the past are now frequently done electronically. Nonelectronic payment methods are now subject to transaction and transaction amount limits in some countries. We'll look at how block chain technology can be applied to the digital economy to help India become more digital in this post.

Keywords: *digital economy, cashless, SHA256, AES, digital India, java, jsp, servlet, etc*

INTRODUCTION

Money is no longer safe in the form of cash or in banks. Considerthe following scenario: You put Rs 10 lakh into a two-year fixeddeposit with a bank. You earned/received interest every quarter for seven quarters, but only a few months before the deposit wasset to mature, the bank failed to pay your hard-earned money onthe maturity date due to mounting financial difficulties (which eventually led to the banking regulator imposing certain limitations). There have been countless cases where investors have lost their hard-earned money in banks as a result of financialmismanagement, and the Reserve Bank of India (RBI) has takenPrompt Corrective Action (PCA) against them. The RBI's PCA now oversees UCO Bank, United Bank of India, Central Bank tomention a few: Bank of India, Indian Overseas Bank, and Punjab& Maharashtra Co-operative (PMC) Bank. Cooperative banks have had a terrible track record. According to RBI data, there were 1,926 urban cooperative banks (UCBs) in 2004, and the RBI has been forced to consolidate 129 smaller cooperatives withstronger banks during the last 16 years. Over the last 16 years, about 246 UCBs have failed. And the possibility of default is only growing; the threat is systemic, and things could swiftly spiral out of control if timely actions aren't implemented. The RBI's newest Financial Stability Report (FSR), the 21st edition, indicates many downside risks, despite the fact that India's financial system is stable. Global risk, financial market risk, and predicted macroeconomic risk are all in the 'high' to'very high' range. The Reserve Bank of India has warned all

stakeholders (including depositors) about the possibility for the sector's Gross Non-Performing Assets (GNPAs) to rise in the coming quarters. Because the ongoing epidemic is affecting people's lives as well as their livelihoods, it has had and will continue to have a negative impact on credit growth, bank asset quality, and capital adequacy. The epidemic substantially hampered the process of COVID-19 outbreak hit the country in March. And now that the banking and financial sectors are under enormous strain as a result of the coronavirus pandemic, discussions on establishing a corporate financial sheet deleveraging, which had been progressing steadily prior to COVID. Under the baseline scenario, the GNPA ratio of all SCBs might rise from 8.5 percent in March 2020 to 12.5 percent in March 2021, according to macro stress tests for credit risk. According to the RBI's Financial Stability Report, if the macroeconomic climate worsens further, the percentage might rise to 14.7 percent under extreme stress. According to the FSR, as of April 30, 2020, about 67 percent of clients of public sector banks (PSBs) and 49 percent of customers of private sector banks had taken advantage of the moratorium facility. Almost a third of private sector bank loan books and two-thirds of PSB loan books were on hold. And this is quite frightening. The government has repeatedly said that depositors' money in banks is safe; nonetheless, such promises should not be taken too seriously. Given that most banks' nonperforming assets (NPAs) are on the rise, your hard-earned money isn't always safe at a bank. The financial stress in the Indian banking system (and debt market) is unquestionably increasing, and this rise in the systemic level may cause investors' money to be lost for no fault of their own. In August 2017, the government submitted the Financial Resolution and Deposit Insurance (FRDI) Bill in the lower house of Parliament, but it was later withdrawn in August 2018. This is because the bill proposing the establishment of a resolution corporation included a very contentious bail-in clause, which effectively allowed the conversion of a bank's term deposit into equity in order to recapitalize the bank if it failed. The term "bail-in" is the polar opposite of "bail-out." When the government bails out a bank, it does it primarily with taxpayer funds. The bail-in clause, on the other hand, allows the bank to use depositor money to lessen its liabilities. Because of the outcry in the media, the government had no choice but to withdraw the idea. The government was considering proposing a modified version of the FRDI, renamed the Financial Sector Development and Regulation (FSDR) Bill, just before the resolution under the new FSDR system's legislative framework have begun to gain traction. The planned resolution authority will have jurisdiction over non-banking financial institutions (NBFCs), insurance companies, capital market players, co-operative societies, regional rural banks, and payment banks. "To deal with stressed assets, we need a structured process with legal backing," said RBI Governor Mr Shaktikanta Das. As a result, there is a need for a completely cashless system that is also secure, so we will use BCT to establish a digital economy for India.

LITERATURE SURVEY:

The usage of non-cash transactions and settlements in everyday life began in the 1990s, when electronic banking became widely available. By the 2010s, many countries have adopted digital payment methods, with intermediaries like PayPal, digital wallet systems like Apple Pay, contactless and NFC payments by electronic card or smartphone, and electronic bills and banking all being widely used. [3] Cash had become actively disfavored in some transactions that would have been extremely common to pay with physical tender in the past, and bigger cash sums were treated with suspicion in several instances due

to its adaptabilityand ease of use in money laundering and terrorism financing. Furthermore, some suppliers and retailers have made it illegal topay huge sums of money in cash, leading to the coining of the phrase "war on cash." [6] According to the 2016 United States User Consumer Survey Study, 75% of respondents chose to payusing a credit or debit card, while only 11% preferred to pay withcash. [7] Digital payments, such as Venmo and Square, have been available since the inception of both firms in 2009. Venmoallows people to make direct payments to other people without needing to carry cash. Square is a technology that allows small businesses to accept payments from their customers. By 2016, cash accounted for only around 2% of total transactionvalue in Sweden, and only approximately 20% of retail transactions. Only around half of the country's bank branches handled cash transactions. [2] Banks convincing employers to use direct deposit in the 1960s, banks charging for checks startingin the 1990s, banks launching the convenient Swish smartphone-to-phone payment system in 2012, and banks launching iZettle for small merchants to accept credit cards in 2011 are all creditedwith the shift away from cash. [2]

Fig: Proposed System

PROPOSED SYSTEM:

I. Every time a transaction occurs in the system, a record of the transaction is kept in the form of a hash value in a block. Eachsubsequent block will be linked to the previous block, forminga virtual block chain. The current block's hash value is calculated using the data from the current block and the preceding block's hash. As a result, if one of the blocks is tempered, the hash of all future blocks must be modified. Multiple copies of the data are kept on different servers, ensuring data security and confidentiality. Because everythingis done through an application interface, transaction transparency will be maintained.

The database is encrypted with AES. The encryption procedure employs a set of round keys, which are uniquely derived keys. These are applied on an array of data that contains exactly one block of data, the data to be encrypted, along with other processes. This array is referred to as the state array.

Steps:

- Derive the set of round keys from the cipher key.
- Initialize the state array with the block data (plaintext).
- Add the initial round key to the starting state array.
- Perform nine rounds of state manipulation.
- Perform the tenth and final round of state manipulation
- Copy the final state array out as the encrypted data(cipher text).

CONCLUSION:

As a result, using BCT will be really digital economy for digitalIndia. To implement BCT features, we'll employ JSP and servlettechnology. For database encryption, AES will be employed. Forhash generation, SHA 256 will be utilized.

REFERENCES:

1. THE COST OF CASH IN THE UNITED STATES" (PDF). The Fletcher School Tufts University. p. 9. Archived from theoriginal (PDF) on 1 December 2016. Retrieved 17 December 2016.
2. Henley, Jon (June 4, 2016). "Sweden leads the race to become cashless society" – via www.theguardian.com.
3. "Cashless-Society.org". Cashless-Society.org. Archived from the original on 2017-12-14. Retrieved 2017-01-27.
4. Tompor, Susan (4 September 2016). "A cashless society? Some retailers turn noses up at currency". USAToday. Retrieved 3 July 2020.
5. ""Negative" Interest Rates and the War on Cash".February 8, 2016.
6. "2016 User Consumer Study".
7. https://www.personalfn.com/dwl/are-you-assumingmoney- in-bank-deposits-as- safe-watch-out