

Money Vault using Blockchain

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Abstract

Cashless transactions like e-wallets have various benefits like reduction in black money, reduction in crime rates, help in improving the economic growth of the country, help in fighting against terrorism, and attract more foreign investors. For secure and reliable transactions we are using a package called KRYPT that can perform various operations on a blockchain, such as sending transactions, querying data from smart contracts, and managing digital assets. The proposed system also provides employees with greater information and salary details, as the information is stored on a secured and decentralized ledger. Additionally, the use of blockchain technology enables real-time tracking and reporting of transactions, providing managers with greater visibility and control over their finances.

Keywords: *Cashless Transaction, Krypt, Digital Asset, BlockChain, Black Money.*

I. INTRODUCTION

Aspect – I consist of the creation and of the creation and maintaining the details of the user where the creation of account in Blockchain medium where the medium can be accessed from the browsers Extension. At this point of time we create a separate account a user in Ethereum. After the successful creation of the account we reduce the work of the user by making a separate API Key for the user. When the user has an API key he is completely authorized for a transaction using the medium we provide. The completion he can be used methods like crypto transaction and Card transaction The Aspect - I make the user for the Authorization of the user and the assurance of the data privacy.

The Completion of Aspect – I unleash the power a common user to transfer his/her cash transaction with the available method. The Aspect – II provides a proper UI where user can be dealt with the transaction process. This provides the complete backend support such as making a transaction with the assured data privacy and amount security. The transaction can be done with the proper addition of the medium details or the existing details if the user is a regular user. This phase uses the API key which is stored a key for the user in the database to identify and make the initiation of the transaction. The Keys are analyzed in both backend and the database so that the incurable interface is provided. The completion of this phase makes the user to initialize the transaction as provided by the UX of the user.

This phase is initialized when the aspect – II is completed. Aspect – III comprises of the collective processing of the data provided and the process of transacting and storing the transaction details in Ethereum space called block. The process contains the verification of the both users and the storage access towards the blockchain space. The server handles the maintenance and the initialization of the database. The server returns the status of the transaction when the transaction process is completed. The transaction

status determines the status of the process since it determines the endpoint. The user is notified on the status of the transaction so that the user is always updated whenever a transaction is generated.

II. LITERATURE REVIEW

Abhishek Gupta.; Stuti Gupta.; Blockchain Technology: Application In Indian Banking Sector.; Delhi Business Review.;Vol.19,No. 2(July-December2018).;

They give an overview of blockchain technology, highlighting its advantages and uses in the Indian banking industry. The article provides an understanding of the numerous issues and a worldwide perspective of blockchain technology in the financial sector. Blockchain technology is one disruptive innovation that is transforming the banking industry internationally (BCT). According to the study's findings, blockchain will eventually operate as a disruptive force to change the Indian banking industry by enhancing the speed, security, transparency, and efficiency of financial transactions. For this study, the authors used secondary data. In the future, an empirical study might be conducted to compare the development of Bitcoin technology in India to that in other developing nations.

Ye GUO and Chen Liang.; Blockchain application and outlook in the banking industry.; Financial Innovation(2016)2:24,Springer Open.;

They conclude that, as credit intermediates, blockchain technology has an edge over banks, but it is yet too early for this technology to destroy the current financial system entirely. Thus, it is likely that a "multi-center, weakly intermediated" situation will manifest. Here is where banks create a consortium, strengthen their positions, and employ blockchain technology to better their payment-clearing processes and get over some information communication roadblocks. The use of new technologies has caused changes in the Chinese banking and fintech industries. Chinese Blockchain Application Development and Technology, 2016. Also, "multi-center, weakly intermediate" situations are encouraged by blockchain applications, which will improve the efficiency of the financial sector. The idea of regulation is diluted by blockchain's decentralization and self-governance, which has a significant negative influence on the current system.

Dan Barnes.; Blockchain maneuvers: applying Bitcoin's technology to banking.; The Banker.; May-2015.;

He affirms that financial institutions like UBS, ING, and NASDAQ, which are researching the technology's potential, will be able to overcome the remaining difficulties, not the least of which are security and regulatory concerns. Bitcoin's underlying technology has the potential to be transformative. It has the potential to revolutionize practically every area of commerce and render conventional online transactions obsolete. We have considered the blockchain as the memory of money. We would want to explore that more, but that will have to wait for now. Can we utilize this to replace current technology, whether it be for payments, transfers, or security? Banks are deciding to switch to a real-time, round-the-clock payment system that allows for instant payments as well as instant commerce. The debate over the best technology to utilize presents an intriguing conundrum: should you choose a brand-new, unproven, yet brilliant blockchain technology with everything within, or an established system with databases? To examine the adoption of new technology thoroughly, TAM must be used.

Sven Magnus Degene.; How Blockchain affects Business Models in International Banking.; 11th IBA Bachelor Thesis Conference,Enschede, The Netherlands.;July 10th,2018

To eliminate consequences to the business model of conventional banks incorporating blockchain technology to process international payments, he analyses the Rabobank and fintech start-up, Ripple. Traditional banks may easily connect to RippleNet, a "blockchain-as-a-service" solution, as part of their value proposition. A "blockchain-

as-a-service" solution is offered by Ripple as a value proposition. the present state of cross-border payment systems as they are applied to the Rabobank case and Fiducia GAD's perspective on information technology.

Ripple's role as an example of a blockchain-based cross-border payment system solution is further clarified. According to the results, traditional banks are less likely to deploy blockchain technology effectively. Instead, it appears more practical for banks to work with fintech companies like Ripple to gain more access to the benefits of blockchain technology. For this investigation, it is assumed that the acquired data are understandable, accurate, and somewhat comprehensive. Finding a qualified expert to conduct an interview with about the complete spectrum of the business model is challenging because the targeted data's target audience is thought to be fairly diverse.

Hassani, Hossein, Huang, Xu, Silva, Emmanuel.; Banking with blockchain-ed big data.; Journal of Management Analytics, Vol. 5 Issue 4, p256-275.; December-2018.;

From an academic standpoint, there is a research and development gap in blockchain-ed big data in banking, and this gap is anticipated to have a large detrimental effect on the acceptance and development of blockchain technology for banking. analysis of the prospects and the effect of blockchain in banking thus far.

Ittay Eyal.; Blockchain Technology: Transforming Libertarian Cryptocurrency Dreams to Finance and Banking Realities.;THE IEEE COMPUTER SOCIETY:COVER.;2017.;

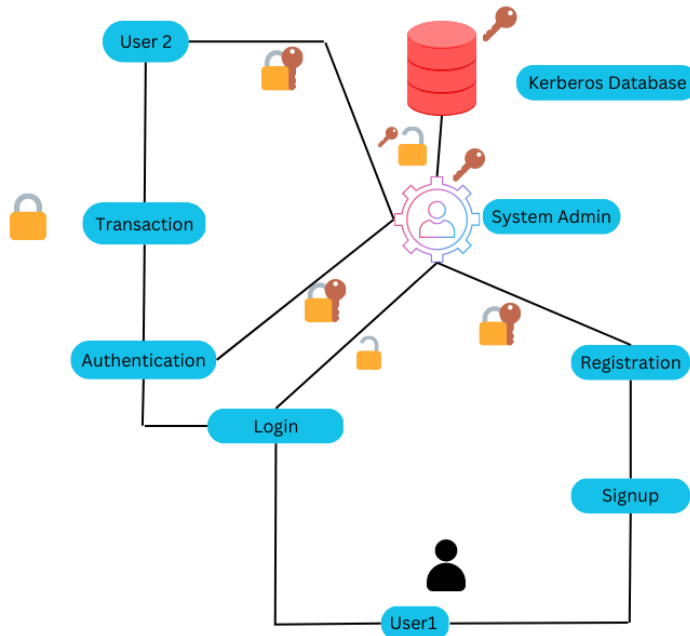
He claims that bitcoin blockchain protocols, also known as distributed-ledger technology, have a significant amount of potential value for the financial technology (FinTech) industry (DLT). Blockchains' criteria and assurances for cryptocurrencies, however, do not line up with those of FinTech in terms of transaction throughput, security basics, and privacy. The writer investigates how blockchain study further Bitcoin is bridging these gaps and overcoming some of the remaining difficulties. In general, four levels may be found in blockchain systems. At the top, the system customers can view an abstract representation of the status of the system, such as a balance sheet that shows how much money is in each account. A virtual machine layer that takes transactions and converts them into state changes enables this abstraction. As DLT adoption grows in the FinTech sector, new opportunities and challenges will continue to present themselves. Only through direct and efficient collaboration between the FinTech sector and the blockchain scientific and engineering community will the full potential of blockchain technologies be realized. The integrity of the blockchain must be publicly verifiable for security. Each node keeps track of all blocks and transactions, allowing it to confirm both the blocks' proper formation and the transactions' legality. Money is neither created nor replaced by nodes.

David Bates and Paul Migliore.; Innovate or stagnate Digitization in investment management.; Journal of Securities Operations & Custody Vol. 10.;Jun-18.;

The authors examine the transformative technologies that will power digital insertion initiatives in the future, how asset managers will need to stand out in the new digital landscape, and doable steps for organizations that are still being held back by legacy technology, processes, and behaviors to embrace the digital frontier. Information and procedures have been digitalized by investment managers, but we have just lately entered a new era when businesses are reengineering every aspect of their operations on a digital foundation. Options for future state designs should be developed by open communication with vendors regarding their present and prospective product lines. Asset managers can reduce risk by using technology that has already been tried and evaluated by a portion of their peer group and using the scale and resources of an external supplier. As the competitive field evolves to

automation, the processing of complicated data, and powerful AI toolsets, these considerations will become more and more significant components of an examination of future state choices. This essay examines all cutting-edge technological advancements and provides arguments for both innovation and stagnation.

III. SYSTEM ARCHITECTURE



IV. METHODOLOGY

Real-time database creation with KRYPT and Ethereum. The implementation is done in KRYPT, React, and Ethereum blockchain which is a constant database that has its information in JSON group and the information is shown, synchronized over the entirety of its customers, web customers, or versatile customers. The user of this app has to sign in and register their details like name, mobile number, and password. The login aspect needs the user to log in with the details of the mobile number and PIN and login into the web application.

The blocks of each user, the number of users, and the transactions of the user are put away in the Ethereum blockchain database has details of the group of users who wants to do their transactions in this Web-chain with the other registered users. Ethereum has user details like his name, his phone number, and PIN. The user details are validated and entered or else the users are asked to enter proper values. The Digital signature is used for secure transactions in which every client has a couple of keys, the private key, and the open key. The sender node signs the transaction and broadcasts it to other users. The receiver node will sign with his private key to get the transaction details and also broadcast it to other users. A proof of work consensus mechanism is used which requires all the nodes to participate in the block generation and verification process. The Web Wallet application contains five modules the Signup module, Login module, charge a Card, Use an Existing Card, and Add a new card.

The square of every client with the hash evaluation of the square, Merkle root, the nonce, hash estimation of the past square, and the time stamp appearing in a long number is illustrated. The Merkle route which has the hash of a considerable number of exchanges underneath will empower new clients to download the exchanges. If a new user downloads the Blockchain and if the transactions are broken during the download phase, the user can utilize

the Merkle tree for downloading the transactions. Proof of work consensus is reached here where a transaction is validated by more than 51% of users in this peer-to-peer network. By chronologically ordering the timestamps of the transactions, the double-spending attack is carefully avoided, and thus forking of the chain is also prevented. There is no such implementation of the Meta mask wallet in Web Applications, so we have devised this method. Meta mask which is used for validating transactions in permissionless blockchain (Ethereum) and decentralized applications has not been implemented in mobile applications.

V.Results And Discussion

Transaction

By including the recipient's information and their payment information, the sender starts the transfer. The amount of money that will be transmitted, the currency, and any other pertinent information can all be included in the payment details. The money is subsequently delivered to the receiver, who has the option to accept or reject it. The transaction in this app depends on one of the following three methods.

1. Pay with ID

Payment Id ETD829848 MAKE API CALL	Transaction status : Success Amount : Rs 18 Description : payment
	Transaction status : Failed Amount : Rs 18 Description : payment

2. Pay With an Existing Card

Pay with card Amount \$ 18 Card Number 4007 4000 0000 0007 CVV ... Expiry 02 / 2024 Description payment	Transaction Status : Transaction Succeeded Amount Debited : 18 Description : payment
	Transaction Status : Transaction Failed Amount : 18 Description : payment

3. Invalid Card

Card Number 4007400000000007 CVV 098 Expiry Month 02 Expiry Year 24 Full name User1	Card Number : 4007400000000007 Balance : Rs 1400 ! Invalid Card Number
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VI. Test Cases

Reg No	Test Case Title	Sample Input	Sample Output
1	Pay With Card	Amount Card Number CVV Description	Status: Transaction success Amount Debited:18 Description: Payment
			Status: Transaction Failed Description: Payment
2	Balance Checking	Card Number CVV Expiry Month Expiry Year Card Holder Name	Holder Name: ***** Card Number : 4007400001746436 Balance Amount: 18000\$
			Invalid Card !!
3	Payment Status	Payment ID	Status: Transaction success Amount Debited:18 Description: Payment
			Status: Transaction Failed Description: Payment

VII. Conclusion

In this modern society, everyone has a virtual identity where we are tracked with huge data about us. Thus, By this paper, we provide a private method of transaction for your money which is mandatory for our life. We have implemented some solutions for transaction privacy with some blockchain concepts

Future Work

As we are involved in protecting the data of the common man we may extend our project ideas with more transfers of cashless money like bills and Ticket booking etc. With this knowledge of securing private data, we may intrude on various privacy-required problems to solve them.

REFERENCES

1. Abhishek Gupta.; Stuti Gupta.; Blockchain Technology: Application In Indian Banking Sector.; Delhi Business Review.;Vol.19,No. 2(July-December2018).;
- 2.Ye GUO and Chen Liang.; Blockchain application and outlook in the banking industry.; Financial Innovation(2016)2:24,Springer Open.;
3. Dan Barnes.; Blockchain maneuvers: applying Bitcoin's technology to banking.; The Banker.; May-2015.;
- 4.Sven Magnus Degene.; How Blockchain affects Business Models in International Banking.; 11th IBA Bachelor Thesis Conference,Enschede, The Netherlands.;July 10th,2018

5.Hassani, Hossein, Huang, Xu, Silva, Emmanuel.; Banking with blockchain-ed big data.; Journal of Management Analytics, Vol. 5 Issue 4, p256-275.; December-2018.;

[6] Yang, M. (2016).

Cryptocurrency in China: Light-Touch Regulation in Demand. Available at SSRN 2792477.

[7] Dorbala, M. R., Gautam, O., Pullabhatla, M. S., & Babu, G. N. P. V.(2018).

The Orphaned Status of Crypto Currencies in India. ZENITH Int. J. Multidiscip. Res, 8(10), 364-374.

[8] Dey, S., Choudhury, P., & Guha, S.

A STUDY ON CRYPTOCURRENCY POTENTIAL IN INDIA.

