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BLOCKCHAIN FOR FINANCIAL APPLICATION
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ABSTRACT:

The Blockchain is an encrypted database that stores information statistics, or in different words, it is a virtual ledger of any transactions, contracts - that needs to be independently recorded. One of the key capabilities of Blockchain is that this virtual ledger is out there throughout several masses and heaps of computer and isn't always sure to be stored in a single place. Blockchain chain has already commenced disrupting the financial offerings area, and it's far this technology which underpins the virtual currency-bitcoin transaction. The aim of the paper is to conduct research on the effect of blockchain technology on the financial sector. There is no doubt that the world is curious to see how this promising technology will influence or shape the future of banking. Blockchain enhances safety in data storage and transmutation, avails a decentralized and transparent network infrastructure and significantly reduces the costs in operations. These remarkable attributes make blockchain a very promising and in-demand solution even in an industry as restricted as the banking sector.

Keywords: *Block chain, bitcoin, virtual ledger.*

1. INTRODUCTION:

A blockchain is a distributed digital ledger where transactions can be recorded and checked electronically over a network of computers in the absence of a central ledger. Cryptography is used to protect the data from deception or hackers[1]. Blockchain is being called “the new internet”, and is expected to transform businesses across various sectors. It was invented by “Satoshi Nakamoto” in 2008. A blockchain helps to record all the transactions made so that no alterations can be made later on so as to maintain the security of the data. Today, entities maintain records in their own traditional ledgers for transactions between them. This sometimes leads to transfer or exchange of a considerable amount of data between entities, resulting in an increase in time and cost for them. It also makes the process of any asset

transfers inefficient, costly and vulnerable. The duplicated shared ledger concept in blockchain technology can help remove these weaknesses[2]. The use of smart contracts, an application of blockchain technology, can enhance efficiency through event-triggered mechanisms. Most credit and budgetary organizations can't do their work without various go-between, while their interest makes the administrations of these establishments substantially more costly. The execution of blockchain will empower pointless arbiters to be relinquished and give clients and banks less expensive administrations. The fundamental zones in which banks and other budgetary organizations will probably actualize blockchain innovation: Payment, Client Identification framework, Loans, and Credits protection[4].

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2. LITERATURE SURVEY

EXISTING SYSTEM:

Water Blockchain not only changes how we transfer value but could dramatically shift our systems of trade identity and governance and one of the aspects that's most interesting is, how it can make these systems more transparent. There this record book shows every transaction that has ever happened in chronological order and we each hold an exact copy of it because of the way the pages are bound together trying to go back and change past trades would be practically impossible and because we each hold a copy of it we would know if something went wrong, this shared record book is essentially a blockchain[6]

A blockchain is a distributed, immutable ledger or record of transactions. Distributed means that it's shared and stored in multiple locations removing a single point of failure and providing perceptibility across massive participants. Immutable means that it's nearly impossible to go back and change the past records once they have been agreed by and attach using cryptography.

Even as a logo-new transaction or an edit to a current transaction is available into a blockchain, usually a majority of the nodes inside a blockchain implementation should execute algorithms to assess and verify the information of the man or woman blockchain block this is proposed[8]. If a majority of the nodes come to consent that the facts and signature are valid, the brand-new block is common and is introduced to the chain of transactions. If a majority does not approve to the addition or modification of the ledger, then it isn't always delivered to the chain. The distributed consent version is what lets in blockchain to run as an allotted ledger without the need for a few important, unifying authority announcing which transactions are legitimate and which ones aren't legitimate.

PROPOSED SYSTEM:

Blockchain is an era that strengthens an awesome manner to have huge-undertaking implications so that it will now not genuinely transform financial offerings, but many other commercial enterprise and industries. Billions of humans and groups are served and trillions of bucks are moved around the previous worldwide financial device every and every day. Nevertheless closely reliant and dependent on paper, despite the fact that dressed up with a virtual appearance, there are various problems with this era. Motive brought price and delays as well as make it much less complicated for

crime and fraud to cripple it. In spite of the monetary employer's resistance to trade, blockchain and its anticipated benefits make it worthwhile. Blockchain, not like traditional structures, is dynamic enough to come to be a pacesetter in implementation in a chargeable market situation. In a blockchain, the best advantage it guarantees is that every celebration has a report that is maintained in a ledger to be had to everyone. It is a ledger extensively surpassed between special users thereby developing a shared database that is replicated to those users and who can get right of entry to it simplest when they have the get admission to to the right for it

Things blockchain can do for the financial sector

a). On-chain settlement :

Blockchain is a pioneering technology based on a distributed ledger. It has a capability to lower the fraud rates in the international bank system and it is also capable of providing On-chain settlement. Blockchain can be used in the financial sector specifically in banking sector providing a platform for banks to reduces fraud as well as On-chain settlement to the users that also helps in reducing the processing time. DLT is capable of providing a platform on Ethereum blockchain. The user will don't have to rely on the centralized system for the confirmation of the transaction.

b.) Low transfer fees :

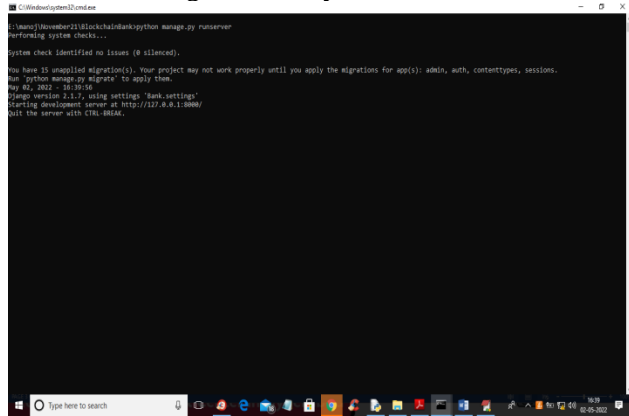
The user will have a transparent cost model for sending a certain amount of money for overseas transactions. The traditional system has a number of intermediates which results in the high transfer fees. The banks have to rely on the centralized system for verifying the transactions. The process is complicated and takes a lot of time to verify the transactions. The platform proposed will have a transparent cost model for sending the money cross border that will provide ease to the user and they have to pay only the negligible cost for sending money.

c). 24*7 Availability:

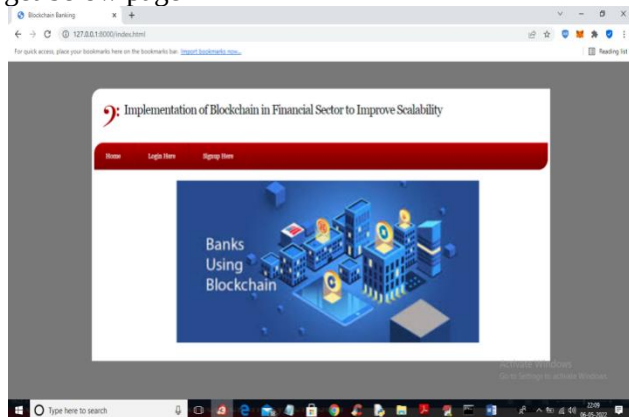
The platform is accessible anytime from anywhere from the world. The nodes in the distributed network will verify the transaction and if more than 75% verifies the transactions, the process will be completed and the user on the side will receive the funds. The nodes will have certain amount of price to verify and block creation.

d). Transparency :

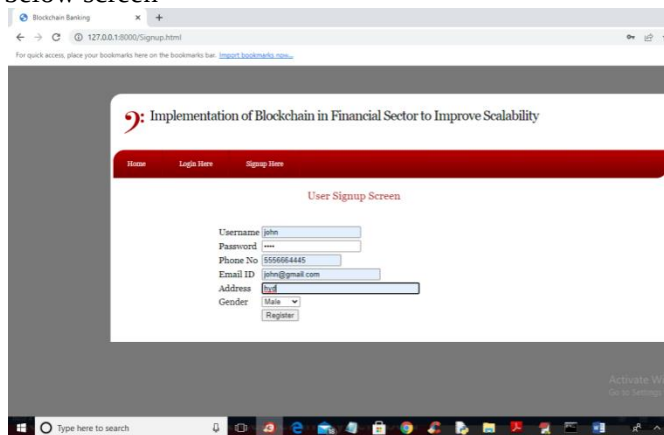
The bank system presently changes the conversion rate without informing the users which results in high transaction cost. The platform proposed will have a transparent conversion rate that will be visible to the user for sending the money overseas with ease. This



In above screen DJANGO server started and now open browser and enter URL as <http://127.0.0.1:8000/index.html> and press enter key to get below page



In above screen click on 'Signup Here' link to get below screen

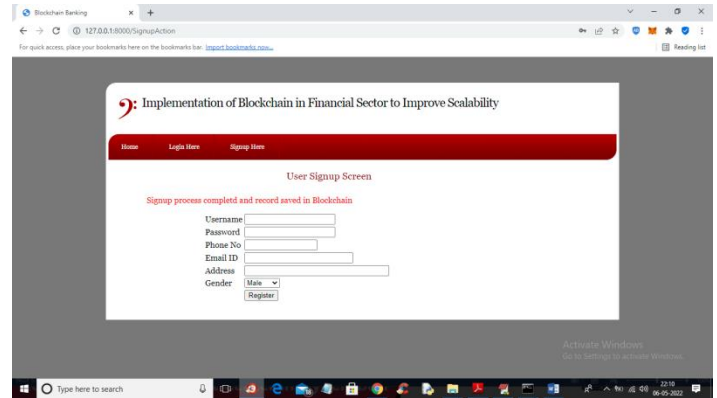


In above screen user is entering signup details and then press button to get below output

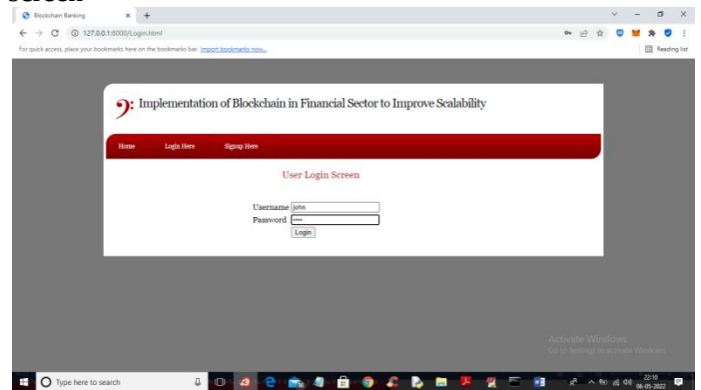
will also allow the user to seek in his ledger and see the transaction history and conversion rate.

3. METHODOLOGY

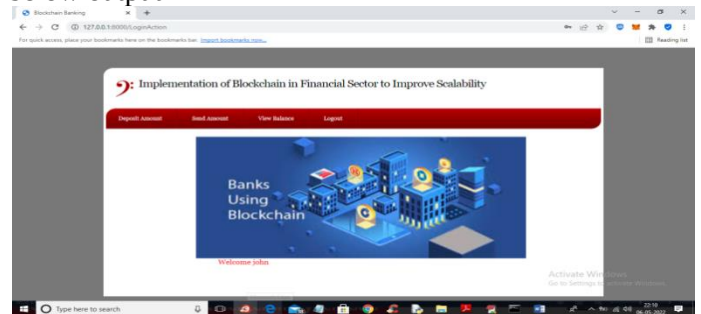
Double click on 'run.bat' file to start 'DJANGO' web server like below screen



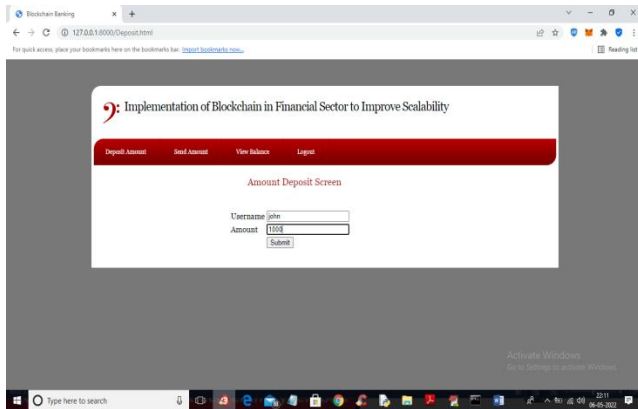
In above screen user signup details saved in Blockchain and now click on 'Login Here' link to get below login screen



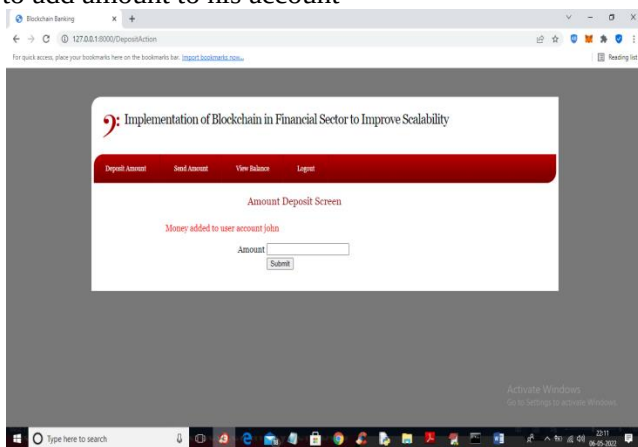
In above screen user is login and after login will get below output



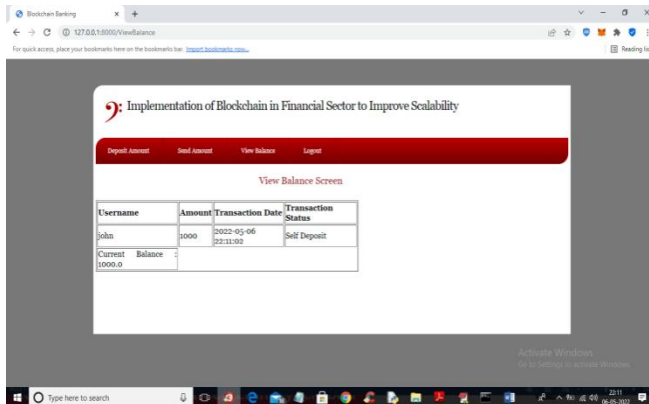
In above screen user can click on 'Deposit Amount' link to add amount to his account



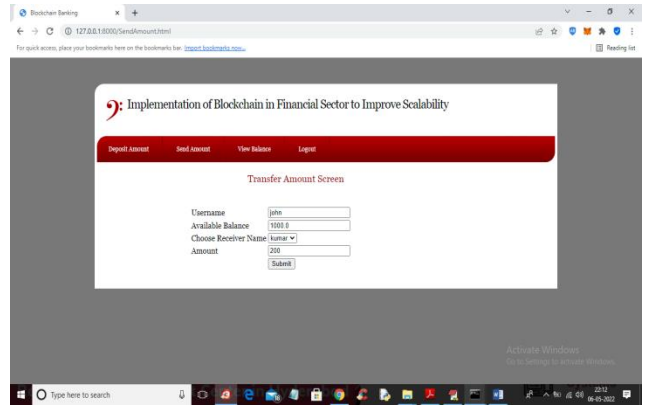
In above screen user will enter amount and press button to add amount to his account



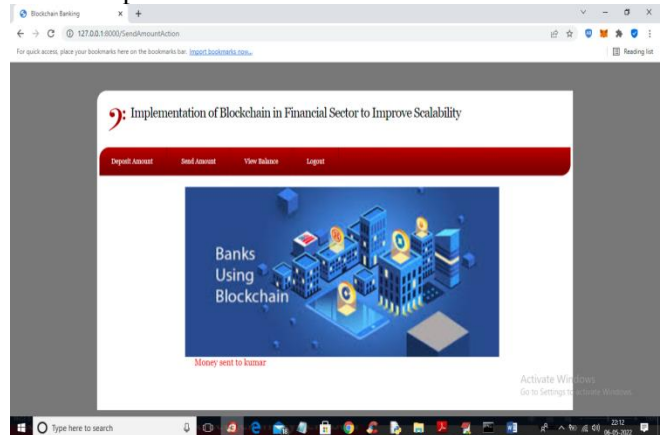
In above screen money added to user account and now click on 'View Balance' link to view his balance



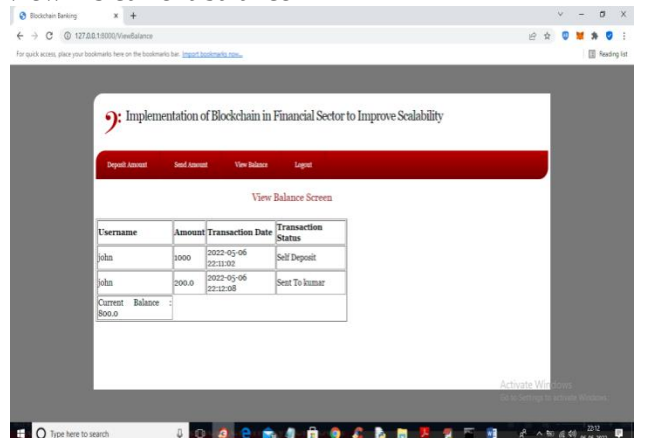
In above screen user has current balance 1000 and now click on 'Send Amount' link to get below screen



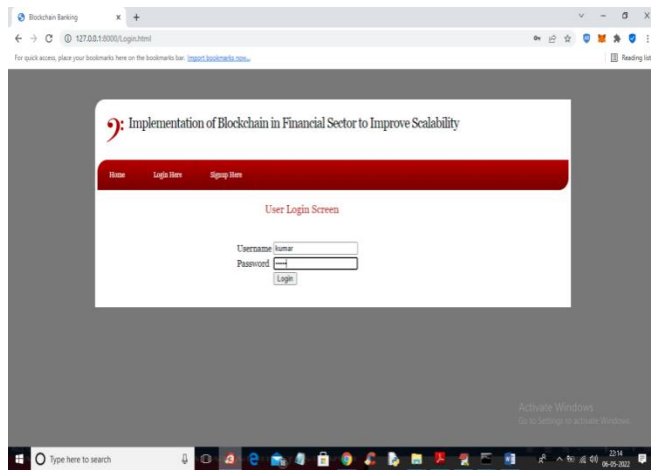
In above screen user 'John' selecting receiver name 'kumar' to send amount 200 and his current balance is 1000 and now press button to send amount and get below output



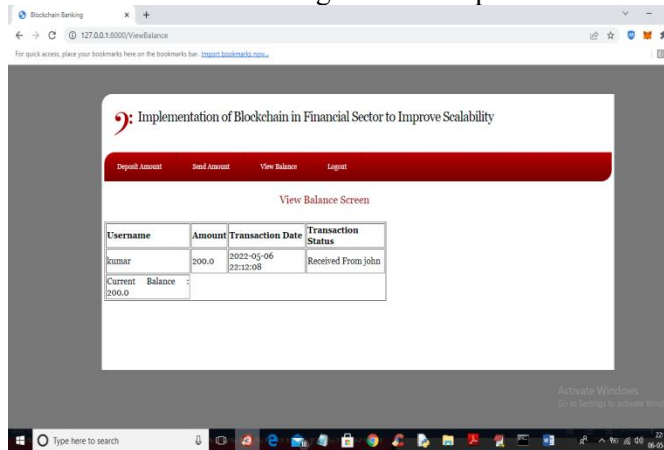
In above screen in red colour text we can see money sent and now click on 'View Balance' link again to view his current balance



In above screen user balance reduced to 800 after sending 200 to kumar and similarly you can create any number of accounts and make transaction using Blockchain Bank accounts. In below user kumar screen we can see 200 credited from user John



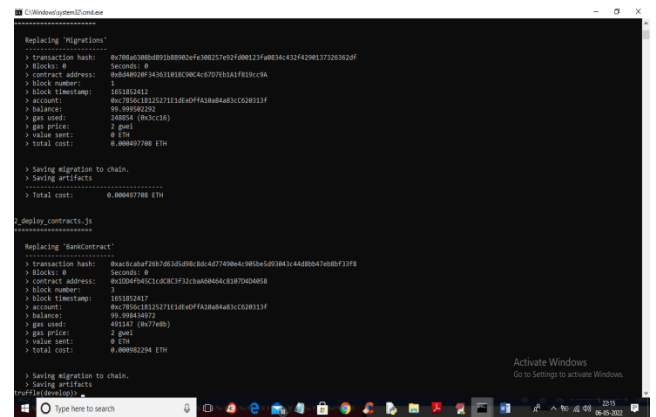
In above screen kumar user is login and after login click on 'View Balance' link to get below output



In above screen we can see user kumar received 200 from user John. Similarly you can create N users and send money which running code TRUFFLE ETHEREUM tool and DJANGO SERVER must be running and this server I am showing below screen

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CONCLUSION

Although the potential of blockchain is widely claimed to be at par with early commercial interest, banking firms need to understand the key features of the technology and how it can solve the current business issues as on one hand, internet enabled the exchange of data while on other, the blockchain can involve the exchange of value. Banks need to identify opportunities, determine feasibility and impact and test proof of concepts. However, the questions around emulations will have to be resolved through focused discussions with competent regulatory authorities and incorporation of their thought-process.

Further we will research how we can provide off-chain settlement for the banks which are not listed on the platform, one of the alternate to do it is to access its database with the permission, due to which further transaction can be taken place (between listed and non-listed banks) so that both can have equal ledger maintained.

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