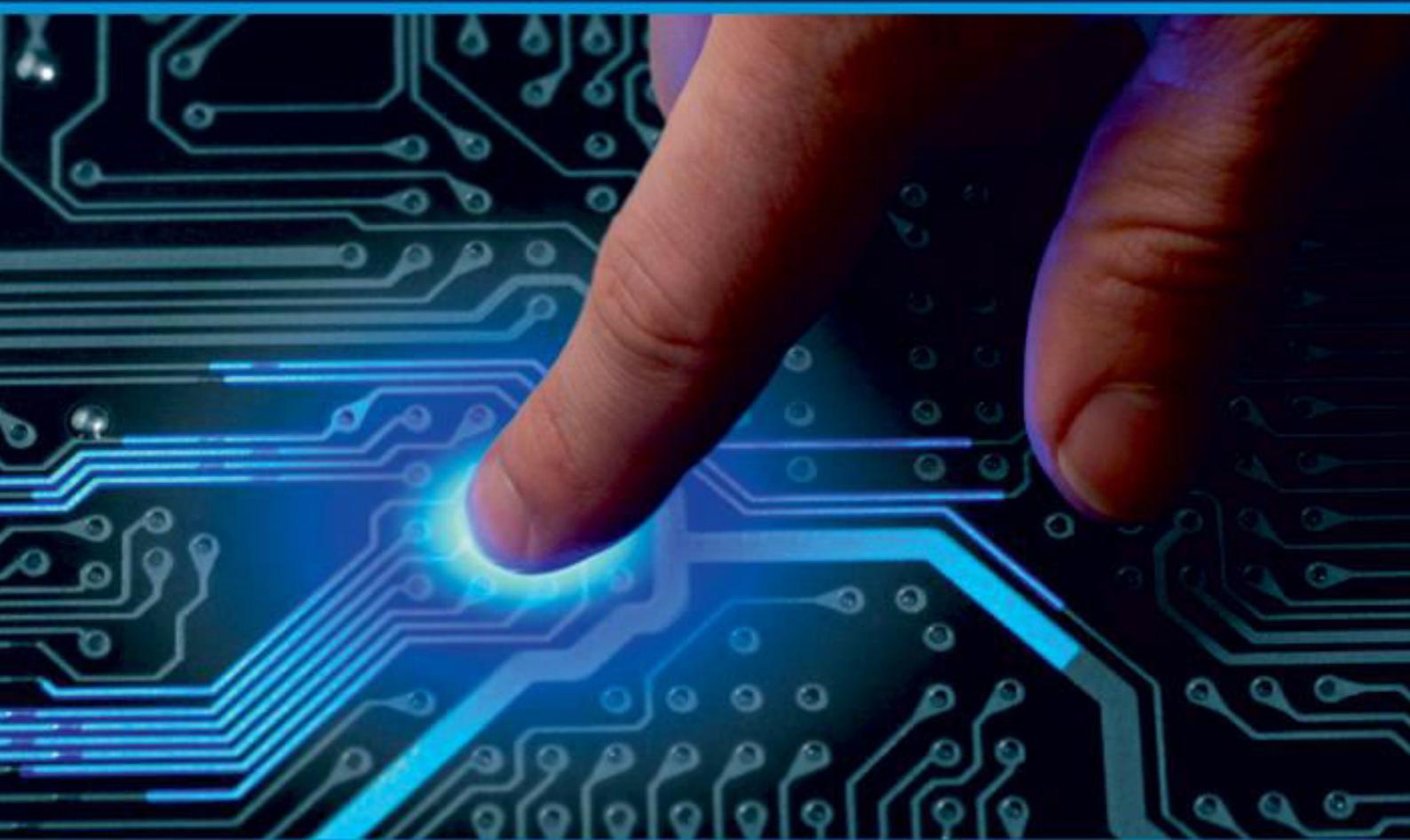




IJIRCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 10, Issue 5, May 2022

ISSN
INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.165

Gen-Z Online Loan System Using Blockchain

Vidhyamini Rouhtu¹, Aatira Gulfishan Shaik², Sanjana Devi Vadlamudi³,

Nagababu Pachhala⁴

B. Tech Students, Department of IT, Vasireddy Venkatadri Institute of Technology, Guntur, Andhra Pradesh, India^{1,2,3}

Asst. Professor, Department of IT, Vasireddy Venkatadri Institute of Technology, Guntur, Andhra Pradesh, India⁴

ABSTRACT: The concept makes use of digital ownership management and provides a peer-to-peer lending system backed by digital mortgages. Built on Ethereum, GENZ LOAN SYSTEM is an online platform that links lenders and borrowers. A person in need of money can apply for a loan by putting a mortgage on one of his possessions. Lenders can view existing loan requests, verify the mortgage, and suggest a loan amount and interest rate depending on his own risk assessment. The borrower can pick and choose from the many proposals received, selecting a subset that best meets his needs. The borrower has the option of repaying the loan and clearing his mortgage once the money demand has been met.

KEYWORDS: Smart Contracts, Ethereum, Web3.js, Truffle-framework.

I. INTRODUCTION

The ordinary person is more familiar with the shares and stock markets, the debt markets are much larger. Thanks to the expansion of Asian markets, it's a trillion-dollar industry that's growing even faster than before. However, due to interoperability barriers between areas and markets, it is plagued by inefficiencies, posing a liquidity risk. Blockchain-based lending, which is based on a peer-to-peer model, can make the entire process smoother and safer by removing the need for traditional banking institutions and third parties. Because of the decentralized nature of blockchain technology, a borrower from anywhere in the globe can access the loan market, and lenders can bid to deliver it. Blockchain technology, according to Santander research, may save banks \$20 billion per year in infrastructure costs by 2022. Overall, blockchain technology brings transparency, trust, and reliability to this complicated loan process, cutting risk and minimizing settlement delays for all parties involved.

Our idea is to create a peer-to-peer lending system that is backed by digital mortgages and uses digital ownership management. The Gen Z Loan system is a web-based platform that connects borrowers and lenders. It's based on Ethereum's Smart Chain technology. A person in financial difficulty may apply for a loan by putting one of his assets as collateral. Lenders can review current loan requests, confirm the mortgage, and offer a loan size and interest rate depending on his own risk assessment. The borrower can pick and choose from the several proposals that have been received, opting on a subset that best meets his needs. The borrower has the option of repaying the loan and clearing his mortgage once the money demand is met. Loans and repayments were handled on a peer-to-peer basis prior to the rise of banks, with transactions completed exclusively on the basis of trust. Then there was collateral, which required people to keep their belongings as collateral in order to secure a loan. Third parties and middlemen, on the other hand, rose in favor as trust faded and globalization took root, as they provided an extra layer of security that was sorely needed. However, due to these third parties' centralized structure, the system grew increasingly complex over time as a result of extra layers of rules and time-consuming manual operations, resulting in large consumer costs.

Individual borrowers can apply for loans through the Gen-z Loan System, an innovative and inventive method to peer-to-peer lending finance. A financial, cultural, or societal incentive may encourage the borrower. It comprises the use of online social media platforms to connect investors with entrepreneurs in exchange for a fee in order to collect funding for various types of loans. New platforms have evolved, such as the internet and social media. To raise funds, entrepreneurs and other non-profit groups use social media and the internet. The paper will begin by discussing the role of technology in the peer-to-peer lending system, then go on to the many platforms that have recently appeared. Blockchain is a one-of-a-kind, self-contained, and transparent technology that ensures the transparency of transactions between parties. The Gen-z loan system is built on a foundation of mutual trust between investors and borrowers.

Individuals have a lot of potential when it comes to new technologies. Peer to peer lending services that use blockchain technology boost the credibility of various initiatives, attracting large sums of money from investors.

II. RELATED WORK

In the existing system lending system is mainly about lending money to friends, family and closed ones. This is where a factor of trust began to show importance as the lending bandwidth grew in terms of people.

In India, the lending is primarily regulated by Central Bank. The RBI typically grants licenses to the market players to operate under GenZ loan system.

Banks serve as a go-between for borrowers and lenders in today's lending system. Traditionally, the lending process needs intermediaries such as banks or lending organizations to establish trust and trustworthiness, which results in higher fees and a longer time to complete a loan. Furthermore, interest rates vary greatly from country to country, making international lending challenging.

Disadvantages:

- likelihood of lender fraud.
- Interest is levied at a high rate.
- Banks that are centralised.

III. PROPOSED SYSTEM

The suggested system has the potential to be used in financial operations such as government cash management, transaction processing, financial asset clearing and settlement, bank ledgers, and so on.

Blockchain offers solution to problems like:

- Delay in transaction
- Security
- Effectiveness

The system possibly eliminates the need of a third-party credit rating system. This is because blockchain system is robust to keep track and would also be able to maintain the credit score of borrowers.

Smart contracts based on blockchain technology can aid in the creation of flexible loan markets where borrowers and lenders can negotiate interest rates and other loan terms. Algorithms can determine interest rates based on a borrower's credit score, income, and other information, allowing genuine borrowers to benefit from cheap interest rates. On the other hand, it gives lenders the flexibility to choose the terms of their investment.

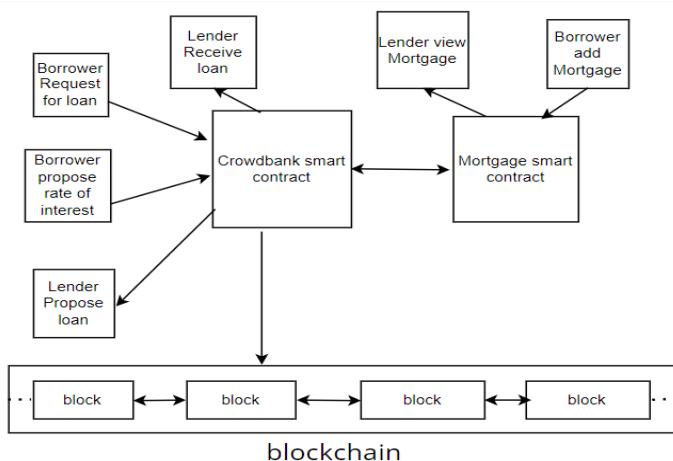


Fig.1.Blockdiagramofproposed system

The following are some of the primary benefits of employing a decentralised approach:

- There are no limitations on how many transactions you can complete.
- There are no broker fees.
- By including restrictions in smart contracts, blockchain might speed up the entire process.

IV. PSEUDO CODE

Step 1: Lender creates a profile

Step 2: Lender waits for the loan request

Step 3: Borrower creates an account

Step 4: Borrower sends the request for the Loan

Step 5: Lender can verify mortgage and propose the loan with specified rate of interest

Step 6: Calculate the total amount to be repaid with interest

Step 7: the borrower locks the profitable proposal of his choice

Step 8:if the borrower repays the amount before the due date

 Then transfer the mortgage he kept as surety back to borrower

else

 transfer the ownership of the mortgage to the lender.

Step 9: end.

V. SIMULATION RESULTS

Different test accounts were used provided by Ganache. When the project is launched on the main net of Ethereum then accounts can be created and accessed. In GenZ loan system we used Ganache test net. Initially the sample amount in the ganache has 100 ethers. When any transaction is done, gas fee will be reduced.

Unit testing is performed to identify the key features like verifying if there is sufficient money for any transaction to take place, allowing people to take loan and lend it, allowing borrower to accept proposal from lender, and allowing lender to lend.

1. The lender establishes a profile of the borrower.

A lender may develop a profile that included the following information: Personal Information (Name, Address, and ID number) Bank Account Information Criteria for various types of borrowers, i.e., calculating interest rates based on a borrower's creditworthiness.

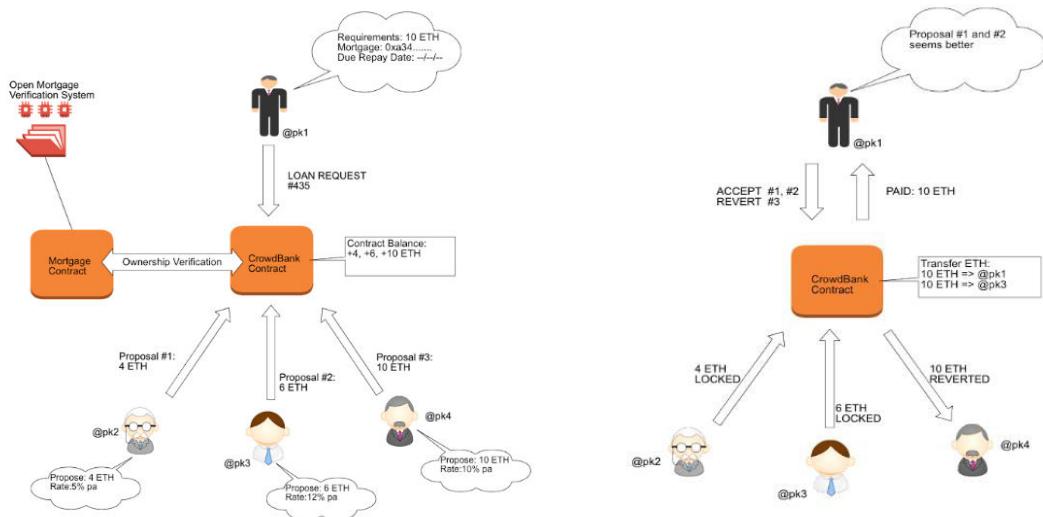
The profile is then posted on a marketplace where lenders and borrowers can meet.

2. The lender awaits loan requests.

After the account has been successfully formed, the lender awaits the borrower's loan requests. The lender verifies the mortgage provided by the borrower as soon as the request is received.

GANACHE					
ACCOUNTS	BLOCKS	TRANSACTIONS	CONTRACTS	EVENTS	LOGS
CURRENT BLOCK 0	GAS PRICE 20000000000	GAS LIMIT 6721975	HARDFORK MURGLACIER	NETWORK ID 5777	RPC SERVER HTTP://127.0.0.1:7545
MNEMONIC	idea zone deer empty worth apple arrow patient wreck profit rhythm office				HD PATH m/44'/60'/0'/0/account_index
ADDRESS 0x92b744aeba27BE7C7e9194B34E3566a4e2795108	BALANCE 100.00 ETH			TX COUNT 0	INDEX 0
ADDRESS 0x90b8824408C15f0dA6314203d099Fd2495F96412	BALANCE 100.00 ETH			TX COUNT 0	INDEX 1
ADDRESS 0x775A4dF2615647e4B04f1f5DA444C43CE5677658	BALANCE 100.00 ETH			TX COUNT 0	INDEX 2
ADDRESS 0x5033c5F3310Ef7a1a60e5C0c007E87d125BE11C8	BALANCE 100.00 ETH			TX COUNT 0	INDEX 3
ADDRESS 0x4816dc64Ba1f68E539C77A93768c5e3652B15ce3	BALANCE 100.00 ETH			TX COUNT 0	INDEX 4
ADDRESS	BALANCE			TX COUNT	INDEX

FIG:1 Ganache sample accounts



VI. CONCLUSION AND FUTURE WORK

The availability of financial services on digital platforms has boosted the lending business significantly, yet banks have become a roadblock to speedier lending. The lending sector will expand if it takes advantage of the possibility for increased digitalization and internet availability for Indian customers. Lending on the blockchain allows us to conduct business in Indian marketplaces in a more efficient and secure manner. This provides a far better user experience while also addressing the banks' middleman issues.

The concept of blockchain-based lending could usher in a new era in the lending industry, as automating loan agreements can drastically simplify the process. However, blockchain technology is still in its infancy, with many new updates being released every day.

The expense of establishing a blockchain network is high, and it necessitates a high level of technical skill. Furthermore, the volatile nature of cryptocurrencies could be a barrier to entry for new peer-to-peer lending start-ups. In many countries, there are several legal issues around cryptocurrencies, which is also a deterrent. Automating the examination of clients and determining their credit ratings necessitates the use of sophisticated oracle systems, which are currently in development.

According to a report titled "Peer-to-Peer Lending by End-User Types and Business Model Type," the peer-to-peer lending industry is expected to increase at a CAGR of 51.5 percent from 2016 to 2022, reaching \$460,312 million. Blockchain technology has a big potential for expansion.

REFERENCES

1. Lee D K C, Lim C. Blockchain use cases for inclusive FinTech: Scalability, privacy, and distribution. 2019, <https://ssrn.com/abstract=3629135> [Search in Google Scholar](#)
2. Glaser F. Pervasive decentralization of digital infrastructures: A framework for blockchain enabled system and use case analysis. 50th Hawaii international conference on system sciences (HICSS 2017), Waikoloa, 2017. [10.24251/HICSS.2017.186](https://doi.org/10.24251/HICSS.2017.186) [Search in Google Scholar](#)
3. Cuellar Benavides J P. Blockchain: Decentralization as the future of microfinance and financial inclusion. HEC Paris, 2019. [Search in Google Scholar](#)
4. ConsenSys. Blockchain in Financial Services. <https://consensys.net/blockchain-use-cases/finance/> [Search in Google Scholar](#)
5. Alesina, La Ferrara, E - Who trusts others? Journal of Public Economics, volume 85, p. 207 – 234 [Crossref](#)

6. J Duarte, S Siegel, Young, L. Trust and credit: The role of appearance in peer-to-peer lending. *The Review of Financial Studies*, volume 25, issue 8, p. 2455 – 2484.

[Crossref](#)

7. S Freedman, Jin, G ZThe Information Value of Online Social Networks: Lessons from Peer-to-Peer Lending *International Journal of Industrial Organization*, volume 51, p. 185 - 222

Posted: 2017

[Crossref](#)

BIOGRAPHY

Nagababu Pachhala is an Assistant Professor in department of Information Technology, Vasireddy Venkatadri Institute of Technology. He received BTech degree from JNTU, Hyderabad, India in 2006. He received Master in Technology degree from JNTU, Kakinada, India in 2012. He is currently pursuing the Ph.D. degree in the department of Information Technology, Annamalai University, Tamil Nadu, India. His research interests include Machine Learning, Cloud Computing, Internet of Things, Cyber Security.



INNO SPACE



SJIF Scientific Journal Impact Factor

Impact Factor: 8.165



ISSN
INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

9940 572 462 6381 907 438 ijircce@gmail.com

www.ijircce.com



Scan to save the contact details