

P2P Lending System on Blockchain

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ABSTRACT

Shared lending (P2P lending) have turned into a predominant elective supporting course for people and independent ventures with close to nothing or poor record of loan repayment. These financial technology items are strongly disrupting the way lending works and along these lines testing the strength of formal banking and monetary foundations. Blockchain 2.0, has a few fundamental elements for example, smart contracts, public and private layers and so forth that can improve P2P lending process by making the whole interaction more consistent, reducing handling time, lowering or in any event, wiping out middle monetary mediators and so forth. A Blockchain upheld framework is proposed in this paper by investigating the utilization of Blockchain 2.0 features in the P2P lending context , for example, in the job of data stream, advanced contracting, stage execution also, interface, risk the executives, systematization and guideline of P2P markets and so forth. While blockchain does not actually decrease credit risk, it can possibly further lower the time required to circle back in loan processing, lessen functional dangers in this way working on the proficiency of financing through decentralization, confided in records also, better estimating (of loan costs) for the moneylenders.

Keywords: BlockChain, Smart Contracts, P2P lending, Ethereum.

Article Info

Volume 8, Issue 3

Page Number : 120-125

Publication Issue :

May-June-2022

Article History

Accepted: 10 May 2022

Published: 22 May 2022

I. INTRODUCTION

Distributed lending (P2P lending) is a web-based insurance free lending framework for individual and organizations Borrowers with almost no

record of loan repayment from a matching at least one interested individual moneylenders. Being unsecured and collateral-free loans, the whole credit risk falls on loan specialists and thus p2p lending is less secure than customary

lending. Through internet-based platforms, P2P lending organizations work with putting of offers, credit profiling, offer coordinating, and transfer of loan amount and recuperation process. Since these administrations are offered on the web, the overheads, handling, support and working costs will be low contrasted with other customary types of lending. Consequently, these stages can offer credit at alluring interest rates and all the more rapidly. P2P lending has experienced quick development lately testing the predominance of banks and monetary organizations. Being computerized, P2P lending can cut topographies and can carry moneylenders and borrowers to the digital platform. Because it is collateral-free, P2P lending can acquire enormous unbanked and uncredited populace to Formal monetary framework and subsequently supports fast monetary incorporation. The idea shows up as a computerized adaptation of microfinancing, aggregates or cooperatives. The lending stages have evolved over the long run. While early day platforms are a greater amount of data scattering and went about as credit postings administrations, current stages incorporate highlights, for example, credit scoring and credit handling administrations by middle people. Also. Blockchain is a disruption innovation that has acquired interest in applications connected with banking and monetary administrations. This paper investigates the conceivable augmentation of blockchain innovation for the P2P lending portion.

II. OBJECTIVES

Technology is changing at rapid pace so is the trends for the financial System. Now a day's people are more inclined to use financial services in online mode thus reducing time and efforts require, thus keeping this in mind a decentralized peer-to-peer lending System will use the latest technology and will try to create a system free of third party interference without any tampering with data.

- ✓ Factors and qualities influencing moneylender, borrowers and the P2P platform, especially with regards to Indian commercial center are examined.
- ✓ Features of Blockchain and how they can help in P2P lending are investigated.
- ✓ The best Class technology required for Implementing P2P lending system is studied.

III.LITERATURE REVIEW

A recent phenomenon, alternative financing was stood out with the start-up and fintech blast of the early 2010s. Banks answered the disturbance challenge by embracing new advancements yet couldn't acquire in light of the fact that Of one big explanation - new start-ups companies have adaptable plans of action and less guideline while banking guidelines are Unbending and very much directed. Early P2P stages included lending inside known companions' circle. Along these lines, trust factor is anything but a significant standard since individuals (generally) knew one another and have a place with a similar social bunch. However, with lending circle expanding, trust probably will not be serious areas of

Strength. Added loan ticket size also started to increment featuring the significance of mediators and outsiders coming into the equation. This clearly inflated cost and time in the general lending process. The first peer-to-peer loans are underwritten in the United Kingdom in 2005.

The idea before soon moved to the US and Korea (2006) and later to different nations like China and Sweden (2007), Israel (2011), Australia and India (2012), Ireland (2013), Indonesia, Bulgaria and Canada (2016), Latvia and Brazil (2018) And so forth. Zopa (UK), Prosper (US), Smava (Germany), We Lab (Hong Kong), Society One (Australia), Trust buddy AB (Sweden), Linked Finance (Ireland) and Money Auction (Korea) are the first p2p loan specialists in their particular Areas.

With a 51.5% CAGR development around the world, P2P lending is presently the quickest developing portion in the finance industry. Market assesses that it will reach US \$460,312 million by 2022. With US \$15.98 billion lending in Loans (starting around 31 Dec 2015), Lending Club is the world's biggest P2P lending organization and the primary such organization to be recorded on stock market. Upstart, Funding Circle, Prosper Marketplace, CircleBack Lending and Perform are a few forerunners in the class.

IV. PROPOSED SYSTEM

1. Web application is developed for users so they can login through their public/private keys.
2. Web application will contain features such as create loan, get loan details, payoff loan etc.
3. Web application will use smart contracts to interact with blockchain.

4. UI of the Web application will be designed in React.

V. SOFTWARE REQUIREMENTS

1. Ganache:



Ganache is an individual blockchain for quick Ethereum and Corda distributed application advancement. You can utilize Ganache across the whole development cycle; empowering you to create, send, and test your dApps in a protected and deterministic climate.

2. Web3.js:



Web3.js is a collection of libraries that allow you to interact with a local or remote Ethereum node using HTTP, IPC or Web Socket.

3. Metamask:



Metamask is a software cryptocurrency wallet used to interact with the Ethereum blockchain. It allows users to access their Ethereum wallet

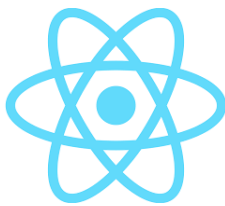
through a browser extension or mobile app, which can then be used to interact with decentralized applications.

4. Truffle:



Truffle Suite is an ecosystem for dApps development, and it essentially consists of three different parts. These three parts are Truffle, Ganache, and Drizzle.

5. React:



React (also known as React.js or Reacts) is a free and open-source front-end JavaScript library for building user interfaces based on UI components. React can be used as a base in the development of single-page, mobile, or server-rendered applications with frameworks like Next.js.

VI. SYSTEM ARCHITECTURE

1. We tend to provide a straightforward web application from which users can access the site and interact with the blockchain for P2P lending.
2. Firstly, Ethereum blockchain is initialized with the help of Ganache, which gives 10 demo Ether accounts to interact.

3. After that, Users With their Private keys can login their accounts with the help of Metamask extension. Now Users can create Loan for Other accounts, which are connected in the chain.
4. Lenders in chain who want to earn interest can now create loan and set interest amount for loan.
5. After creating loan a unique loan id will be generated which will help us map the details of the loan.
6. Receiver can now withdraw the amount into his account.
7. Receiver can now pay loan in installments or can pay full with interest amount.

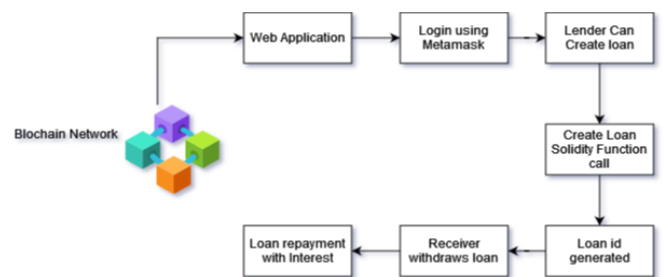


Fig 2 : System architecture

VII. METHODOLOGY

Distributed ledger:

A distributed ledger is an imitated, shared, decentralized and synchronized record of exchanges between parties, besides, it is cryptographically secured. Not at all like distributed database, nodes of a distributed ledger cannot trust in others nodes in the network, thus it ought to check the transaction autonomously prior to applying them with its local copy. There are two fundamental classes in distributed ledgers. To start with, those that

Expect to lessen the job of confided in outsiders, and second those that mostly rely upon recognizable outsiders for some subset of the system's properties. Not all distributed ledgers are blockchain, yet all blockchain are distributed ledgers.

Ethereum protocol:

Ethereum protocol is likewise a permission less public blockchain. It applies the indistinguishable mechanical

Parts, for example, P2P organization, computerized signature, public key encryption, cryptographic hash work. The agreement calculation called Ethash (Wood, 2017), a sort of POW, is utilized toward the start, however Ethereum wanted to move to Casper (Zamfir, 2015), a sort of PoS. The local digital currency Ether claims the following biggest trade esteem behind Bitcoin.

Consensus mechanisms:

In blockchain, how consensus is made among the untrustworthy nodes to append new blocks is a conversion of the byzantine generals (BG) problem (Lamport et al., 1982). In BG problem, a gang of generals who directs a part of the Byzantine army strikes the city. Some generals choose to attack while others decide to retreat. However, the strike would fail if only part of them attack the city. Thus, they have to come to an affirmation whether to attack or retreat. The challenge here is how the agreement should be made in a distributed environment. As the blockchain network is distributed, it is also a threat for blockchain. Some protocols are required to assure consistency of public ledger in all blockchain nodes. This section presents some

of the consensus algorithms, which plays a vital role to reach agreement among participating nodes in the blockchain network.

VIII. ACTIVITY DIAGRAM

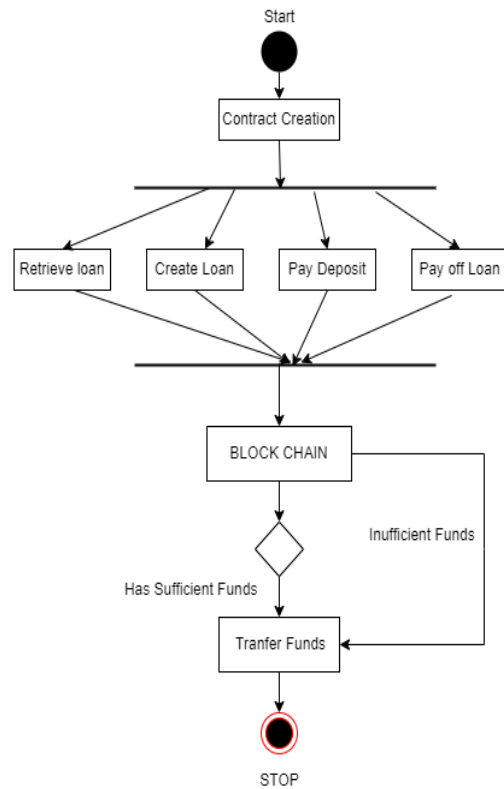


Fig: Activity Diagram

IX. CONCLUSION

This Paper adds up the current writing on p2p lending and accordingly improves the current assortment of Information. P2P lending is an aid to borrowers with broken credit scores and to moneylenders who take higher degree of risk for higher returns. While the default example is not many in developing markets, they are high in developed markets. With its better handling execution, brilliant contracting and permissioning, blockchain is of gigantic use for P2P lending stages. Cost efficiencies,

diminishing time for locally available new individuals, issue and recuperation of loan and compliance should be generally possible utilizing this innovation. Subsequently, blockchain can help in the advancement of the p2p lending industry.

Cite this article as :

Linesh Patil, Allan Pillai, Shreejeet Honrao, Prof. Jagruti Wagh, "P2P Lending System on Blockchain", International Journal of Scientific Research in Computer Science, Engineering and Information Technology (IJSRCSEIT), ISSN : 2456-3307, Volume 8 Issue 3, pp. 120-125, May-June 2022. Available at doi : <https://doi.org/10.32628/CSEIT228336>
Journal URL : <https://ijsrcseit.com/CSEIT228336>

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