International Engineering Journal For Research & Development
Vol.5
Issue 5

E-ISSN NO:-2349-0721

Impact factor : 6.549

IMPLEMENTATION OF CHIT-FUND USING BLOCKCHAIN

[1]Simran Singhani, [2]Suraj Gaikwad, [3]Ashutosh Shukla, [4]Arshad Sayyed
Information Technology Xavier Institute of Engineering Mumbai, India
simran.s@xavierengg.com[1], surajgaikwad345@gmail.com[2] , ashushukla14898@gmail.com,
arshadsayyed0047@gmail.com[4]

ABSTRACT

A chit fund system contains a group of users, called subscribers. The Chit fund organizer or a company , brings the group of people together and monitors the activities of the group. For this reason, the organizer is either gets compensated every month or at withdrawal time. (The fee may be omitted in informal situations.) The fund starts at an announced date and continues for the number of months equal to the number of subscribers. Each month, the subscribers put in their monthly installments into the pot. Then, an open auction is conducted to determine the lowest sum a subscriber is willing to take that month. For example, if the monthly installment is Rs.1000 and there are 50 members, the pot in the first month will contain Rs.50,000. If the auction determines a winner who is willing to accept Rs.45,000 for that month, the surplus Rs.5,000 is distributed to the other 49 members, after subtracting fees paid to the organizer. The subscriber who won the auction was able to access Rs.45,000 in the first month and the others benefited in their share of the Rs.5,000 surplus. The process gets repeated on its own, giving the auction amount to one user every month. All of the other users, including those users who took their share in a previous month, also continue paying the monthly installments. It works as a savings account, because each user contributes every month and may retrieve a large sum in the future whenever he wants while receiving their share of the surpluses amounts. Variations of the system can omit the bidding part, instead selecting a winner by choosing a chit out of a box.

***Index Terms*—Block-chain, Smart contract, chit- fund**

2000 chit-fund companies in India present by now. We will try to include as many more companies as possible on our platform. We are planning to raise 50 percent more money involved in next five to six months.

EXISTING SYSTEM

Today, There are 3 kinds of Chit fund systems are present in India, namely

Chit funds governed by the State government of Kerala State Financial Enterprises.

Also, there are registered Chit funds like Shriram chits which are run and governed by big business- men and are registered at government.

Unregistered Chit funds, which are run on the basis of friendship and close proximity of the people. These chit funds have less security. Chit-funds which are run by PSUs are the safest among all. The second safest is the one run by registered ones. The least secured is the unregistered ones.

PROBLEM STATEMENT

In today's world there is no trust amongst com- mon people on Chit-fund due to massive scams that took place. The scam amount of chit funds is 8000 Billion and still counting. To overcome this scam and bringing back trust amongst the common people, Block-chain can be implemented with chit- fund.Everything put into the block-chain system is completely immutable. As the block-chain is Immutable, it will not let you make any changes to the data which is stored into the system. The data is stored in Blocks and the blocks can not be tampered.Block chain is about trust and if we can bring about this system of trust, more people will be on boarded and this unregulated territory can be regulated.

For Chit subscribers, it is going to be helpful because if you are doing chit with any chit fund company, you can have complete faith in how the chit group is formed, and the entire history of the chit group at just one click of a button.

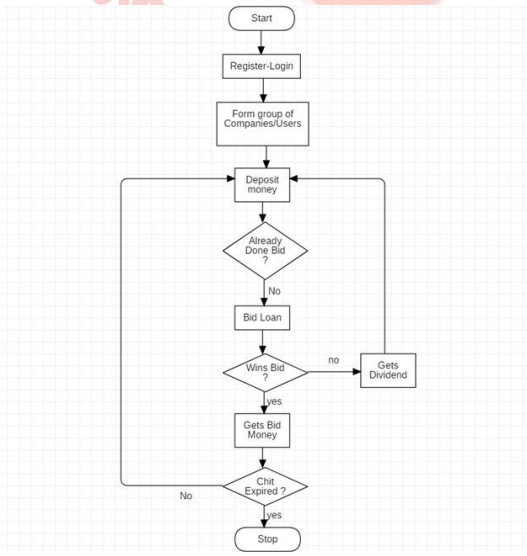
PROPOSED SYSTEM

Today most of the people do not consider chits as a saving instrument because of many chit scams that have come to the fore in past few years. Youngsters tend to stay away from it. Average age of chit fund subscribers is anywhere between 35-

45. We want to change this; participating in chit

funds must be made so easy and transparent so that people do not blink an eye before joining chits. Any data that is put into the block chain system is totally immutable(Can not be edited). If a regulator is approving any application of any registrar that goes and sits into system and this data cannot be tampered. For Chit subscribers, T-Chits is going to be a big deal because if you are doing chit with any chit fund company, you can have complete faith in the how the Chit group is formed, when is it formed and the whole history of the group with the government and subscriber at click of button.

Fig. 1. Proposed System



A. Algorithm

To best explain its working, here's a simple example:

Let's assume there is a chit fund

- with 20 members

- each contributing Rs. 5,000 per month
- for 20 months

Thus total monthly collection in this chit fund = Rs. 100,000.

Assume that in the 1st month, 3 members need funds and so they participate in the bidding process.

Member 1 bids for Rs. 80,000

Member 2 bids for Rs. 75,000

Member 3 bids for Rs. 70,000

INTRODUCTION

Block chain is the backbone Technology of Dig- ital Crypto Currency Bit Coin. The block chain is a distributed database of records of all transactions or digital event that have been executed and shared among participating parties. Each transaction ver- ified by the majority of participants of the system. It contains every single record of each transaction. Bit Coin is one of the most popular examples of crypto currency of block-chain. Block-chain Tech- nology saves the Transaction in Digital Ledger which is not centralized and distributed over the Network thus making it more secure. Anything of value like Land Assets, Cars, etc. can be recorded on Block-chain as a Transaction.

OBJECTIVE

Formal financial services like Insurance, Trad- ing, Equity, Mutual funds, Loans are difficult to understand and work with for the majority popu- lation. Chit Funds have been playing an important role in the financial inclusion of India. Two main problems in this are, having faith and trust on the organizers of this process and challenges in monitoring it. We plan to use the Block-chain technology Thus, Member 3 becomes eligible to withdraw the money for the month as his bid is lower than the first member's bid.

Thus, Foreman's fee = Rs. 5,000 (5% of Rs. 100,000)

Member 3 can now withdraw

Rs. 70,000 – Rs. 5,000=Rs. 65,000

The remaining Rs. 30,000 (Rs. 100,000- Rs. 70,000) is distributed equally among all the mem- bers, i.e.: Rs. 1,500 each. So after the first month, each member contributes only Rs. 3,500 (Rs 5,000

- Rs 1,500)

The same process is repeated every month for a total of 20 months.

IMPLEMENTATION

A. Android Studio

Android studio is the official IDE (Integrated Development Environment) or tool (layman terms) for developing application exclusively for Android platform. It has a strong editor tool for developing creative User Interface and emulators to test the application[20].

So let's launch AndroidStudio.exe. Make sure be- fore launch Android Studio, your Machine should have pre-installed Java JDK. Once you launched Android Studio, its time to mention JDK7 path or later version in android studio installer.

B. Java Server Pages (JSP)

JSP is a technology which is used to create simple and attractive web apps. JSP technology is almost similar to Servlet technology as it provides more functionalities to the developers rather than servlet such as expression language, JSTL, etc[19]. The pages which a developer develops in JSP consists of HTML tags and JSP tags. The JSP pages are easier to develop and maintain than Servlet pages as designing and development both are separated. Additional features such as Ex- pression Language, Custom Tags, etc. are also provided by JSP.

C. Ethereum

Ethereum is an open source based technology. It is public and blockchain-based distributed com- puting platform. It is also an operating system featuring smart contract (scripting) functionality. It supports transaction-based state transitions in

Blockchain[20].

Ethereum generates Ether as it's cryptocurrency to reward the mining nodes for computations per- formed. Ether is the only currency accepted in the payment of transaction fees.

Ethereum Virtual Machine (EVM) is the decen- tralized virtual machine provided by Ethereum. EVM executes the scripts using an international network of public nodes. It uses "Gas" as an internal transaction pricing mechanism, to mitigate spam and allocate resources on the network[20].

RESULTS

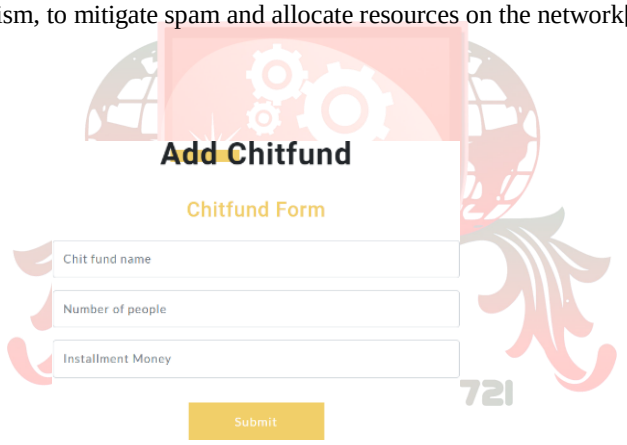


Fig. 2. Adding of new Chit

The above figure 2 shows the adding of new Chit-Fund group.

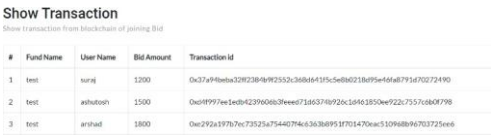


Fig. 3. User placing new bid

The above figure 3 shows the respective user is placing his/her respective bid.

The above figure 4 shows the winner of the bidding process.

to decentralize these financial services space and bring trust and transparency in the Chit Funds. As the registered chit fund system is safe and secure, more people will prefer to go to a regulated authority for chit funds. There are around

Fig. 4. Winner of bidding process

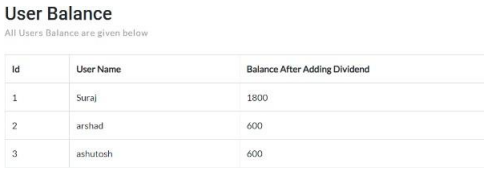


Fig. 5. Updated balance of every user

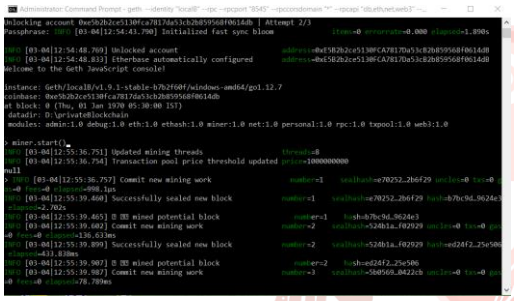


Fig. 6. Ethereum server running on CMD

The above figure 5 shows the updated balance of each user after the bidding process.

The above figure 6 shows that Ethereum server is running and blocks of transactions are being successfully created on CMD using the geth com- mand.

CONCLUSION

The project objective of safe and secure Chit- fund transaction is achieved using Blockchain technology, by storing all the transactions in the system inside the Ethereum Blocks. Using this Chit-fund system, people can trust and invest their money in the Online Chit-funds. The Authenti- cation and verification process in the chit-fund system has brought faith to the people. This system reduces the chance of scam which takes place in Traditional Chit-fund systems. Thus a safe and highly secure Chit-fund System is successfully developed.

REFERENCES

I. Morgen Peck “Understanding Block chain Technology: Abstraction the block chain” IEEE Journal, vol-5, July, 2018.

II. Shuai Wang , Liwei Ouyang, Yong Yuan, Xiaochun Ni, Xuan Han, and Fei-Yue Wang, “Blockchain-Enabled Smart Contracts: Architecture, Applications, and Future Trends” IEEE Journal, pages-12, 2019.

III. Morgen Peck “Understanding Block chain Technology: Bitcoin case study”, IEEE Journal, pages-4, July,

2018. [4]George Strawn "BLOCKCHAIN", IEEE Journal, vol-21,

IV. issue 1, pages-91-92, Jan, 2019 [5]https://youtu.be/o-p4OVzttIU - Pavan Adipuram [6]https://youtu.be/8fbhI1qVj0c - TEDx Talks [7]https://youtu.be/hxvDtklQL8I - chit-zone [8]https://youtu.be/n10lo7JCKLo - IndianMoney.com

V. https://www.thehindu.com/news/cities/Hyderabad/now- blockchain-tech-powers-chit-funds/article23841832.ece , Page 2- The Hindu- Friday, May 11 2018.

VI. https://telanganatoday.com/blockchain-enabled-t-chit- platform-launched , Telangana Today-Thursday, May10, 2018.

VII. https://www.apherald.com/politics/ViewArticle/305777/t- chits-brings-chit-funds-in-the-state-highly-secure- blockchain-system/ , AP Herald- Friday, May 11, 2018

VIII. Yusuf Parwej, Nikhat Akhtar, Firoj Parwej "A technology perspective of block chain security" vol-9, issue 11(A), pages-22, November,2018.

IX. http://www.nishithdesai.com/fileadmin/user- upload/pdfs/Research/Papers-Building-a-Successful-Blockchain-Ecosystem-for-India.pdf Nishith M. Desai Vaibhav Parikh Jaideep Reddy

X. https://www.chitmonks.com (accessed on 25-02-2019 2:44 pm)

XI. https://www.deccanchronicle.com/business/in-other- news/100518/new-chit-fund-to-run-on-blockchain-tech.html (accessed on 25-02-2019 3:15 pm)

XII. https://en.wikipedia.org/wiki/Chit-fundHow-it-works (ac- cessed on 03-03-2019 8:22 pm)

XIII. https://en.wikipedia.org/wiki/Chit-fundOnline-chit-funds (accessed on 03-03-2019 9:00 pm)

XIV. https://www.udemy.com/build-your-blockchain-az (accessed on 19-08-2019 03:00pm)

XV. https://www.javatpoint.com/jsp-tutorial (accessed on 15- 8-2019)

XVI. https://en.wikipedia.org/wiki/Ethereum (accessed on 18- 08-2019)

XVII. https://developer.android.com/studio/install (accessed on 25-08-2019)

E-ISSN NO:2349-0721