

TEAM
NERDHERD



AYUDA - THE MONEY-PLANT

Changing lives one loan at a time

THE PLATFORM

(Our platform is referred to as the Money Plant.)

*Ayuda is a **not for profit, blockchain based peer-peer money lending platform.***

*Our platform **connects lenders and borrowers from all across the globe** because we believe that your **will to help someone is much greater than the miles separating you.***

*The platform makes sure that **every person using the platform is benefitted.** Doing this we are able to sustain a proper give and take a situation where everyone is benefitted.*

The platform allows a lender to partially pay for a loan request.

*We use an innovative **dynamic-interest rate** method to incentivize our lenders. In this way, the lenders will pool as much money as possible to get more incentive.*

*Our algorithm decides the interest rate for the lenders dynamically on the basis of the proportion of money paid by a lender for a particular loan **while maintaining the fixed interest rate for the borrower.***

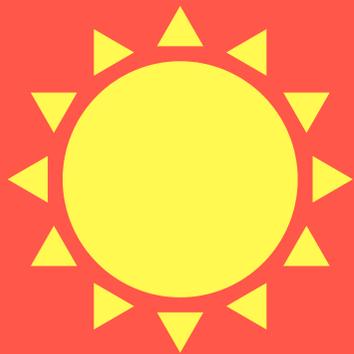




The Lender



The Borrower



Field Partners

THE LENDERS

- A lender is someone who can participate in doing a social good by lending some amount and along with that has a chance to get his money back with a very high-interest rate.
- The lenders will always want to lend a higher amount as our algorithm determines the **interest rate based on the proportion of money put in.**
- We provide **Two-phase security in the platform.** One while the borrower bids, to check the intentions of the borrower and Second with the help of the field partners. This helps the lenders to lend their money worry-free.
- The **smart contract rates the borrower and the field partners** according to the rate of repayment to build a perfect ecosystem for lending and borrowing.
- Adding the security feature for the lenders provides them with confidence and entices them to lend more and more for higher benefits.
- More lending means a faster loan fulfillment for the borrowers and a *super fast ecosystem for peer to peer loans*

THE BORROWER

- The Borrower can be someone who wants to increase his business, start a new business, needs help on education or needs money for a better life. We have got them all covered!
- Our platform provides a loan to the borrower instantly
- With so many lenders ready to lend money any loan request is fulfilled instantly.
- A borrower will prefer using our platform as he will be able to easily raise the money without paperwork, and paying a **very small and fixed interest fee**.
- We have a **reputation system** in place to ensure that the loan is given to a borrower with **good credit history and punctual installment payment schedule**.
- Our system ensures **healthy loan allotment rate** for the borrowers with a good reputation score
- Our **fast and efficient money lending system** gives us an edge over other existing solutions.

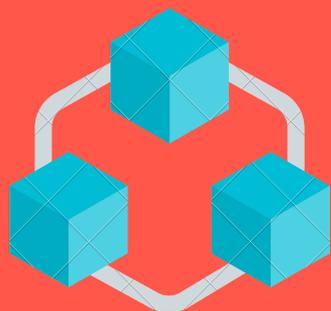
THE FIELD PARTNER

- Our field partner acts as our **ground force**.
- Once they are registered in our system they can then **verify borrowers** and then add them to the Ayuda-ecosystem.
- Once a borrower is verified, he/ she has to submit the installments via the field partner(not necessarily). The field partner **creates peer pressure on the borrower** to pay his installments on time as **they get incentives on each loan completely repaid on time**.
- If a borrower defaults a loan then the **reputation score of the field partner is decreased**.
- The reputation score acts as an **indicator of capital security for the lender**.
- They help in **maintaining the Nash-Equilibrium** for the ecosystem

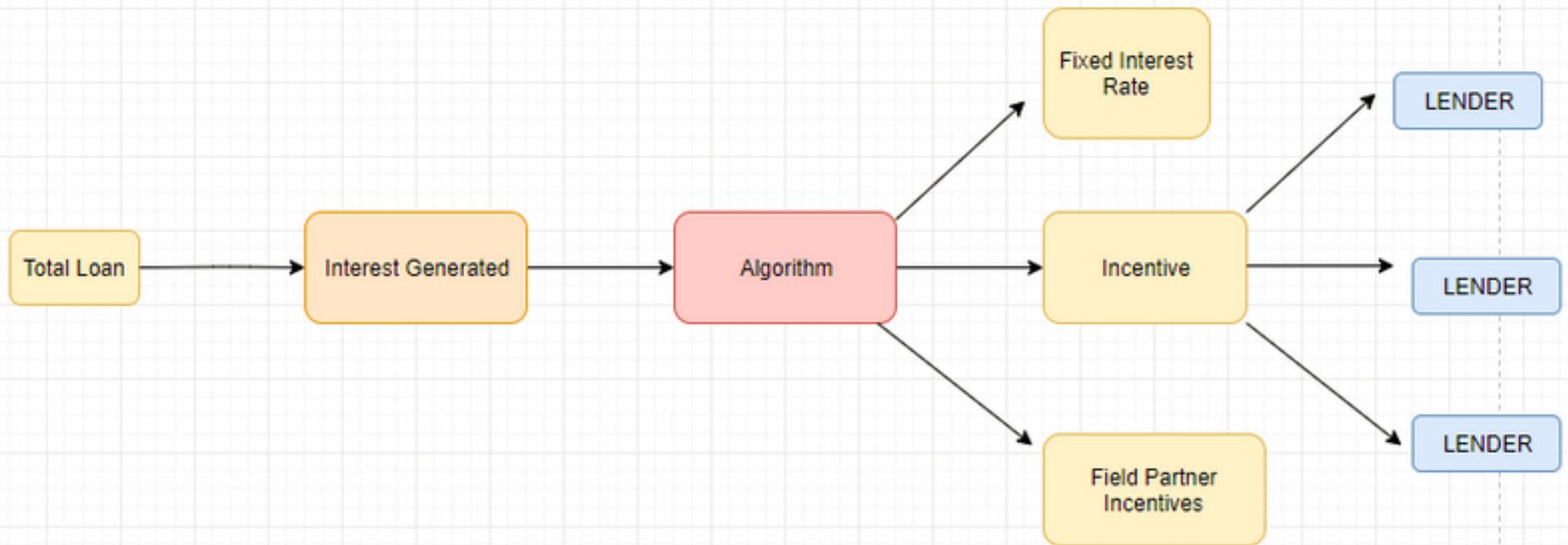
LASTLY, HOW WE MAINTAIN NASH EQUI ?

A Proof-of-Concept is written in C++:

1. In Nash-equilibrium two player never deviate from there strategies because doing so will not give an incentive to any one of them. It's like a zero-sum problem,i.e. each player's loss is equally balanced by other players.
2. In case a borrower deviates from his strategy, i.e. defaults a loan then the bank will remove the respective borrower from the ecosystem. And also deny all loan requests verified by the field partner to the respective borrower.
3. In this way, field partner creates a peer pressure on the borrower to repay the loan.
4. And if the borrower repays the loan the bank changes his/her reputation score and makes them eligible for more loans of a higher amount.



THE ALGORITHM





REPUTATION SYSTEM



SCALABILITY



**DECREASING
LOAN DEFAULTERS**

REPUTATION SYSTEM :

- *Our reputation system is a dynamic and inclusive indicator of an individual's likelihood to pay debts that adapts to the maturity of a user's credit history.*
- *The borrower reputation score solely depends upon the regularity shown by him/her in paying the installments of the loans.*
- *Field partners are also rated on the basis of total loans successfully repaid by their borrowers*
- *If a borrower defaults a rate then his and his field-partner's rating is decreased.*
- *This helps us in creating peer pressure on the borrowers.*

SCALABILITY :

- *Our dynamic interest rate policy and high incentivization on pooling in more money attracts more lender to pool in more money.*
- *Since the number of lenders that are eager to lend the loan are more a borrower can get a loan almost instantly.*
- *We are already connecting people from all over the world but having more field partners serving us will make our platform more effective. Having field partners all throughout the world will assure lenders to serve more and maintain the trust in the system.*
- *With the above system already in place(deployed on Hyperledger Composer), we expect very high scalability.*

HOW WE DECREASE THE CHANCES OF DEFAULTING A LOAN:

- *Loan default is the biggest problem that a micro-lending institute faces .*
- *We tackle this problem by establishing our feild partners.Our feild partner can be anyone a person,a school or even a government hospital.*
- *Feild partner verifies our borrower and ensures that he repays all his installments on time .*
- *If the borrower fails to pay his installments then the reputation score of both the borrower and the feild partner is reduced.*
- *In this way a borrower that is verified by an feild partner with very low reputation score will have lower chances of getting his loan ,on the otherhand if a borrower gets verified by an feild partner with very high rating,the chances of getting the loan also increases.*

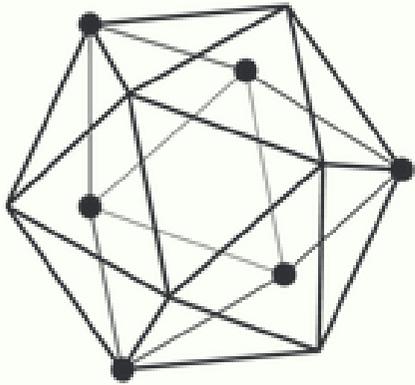
HOW WE DECREASE THE CHANCES OF DEFAULTING A LOAN:

- *In this way, we ensure that our lender's money is invested in a loan which has high chances of being repaid.*
- *For each loan completely repaid by the borrower, the feild partner is given an incentive for verifying the correct person.*
- *We reflect this in our reputation score as well .This helps future lenders in deciding wether they should pool the money for the particular borrower or not.*
- *This also increases the total capital pooled by the lenders as they are more confident about the repayment of the loan by the borrower.*

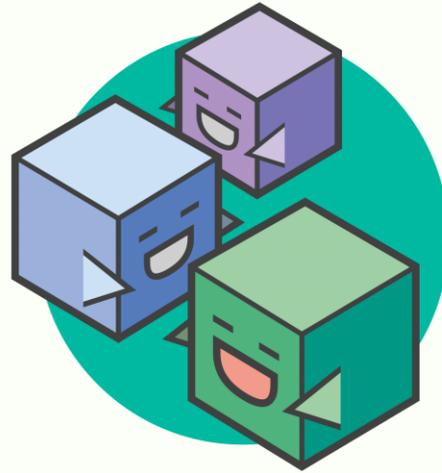
WHAT PROBLEMS OUR PLATFORM SOLVES

Problems in micro-lending	How our project solves them
Loan defaulting	A reputation score to keep a check on the loan defaulters
No encouragement to the money-lender to pool-in money	A fixed interest rate and incentives on pooling in more money
Certain groups (women, Dalits) not allowed into groups.	Anonymity on the network ensures equality for all
Patchy maintenance of accounts	Automatic maintenance of fault-tolerant, decentralized ledger
Need for centralized organizational leadership	Auto-governance by solidity smart contract
Possibility of corruption inside group	All transactions are open and transparent
Rural people find bank branches forbidding	Interactive interface for all transactions

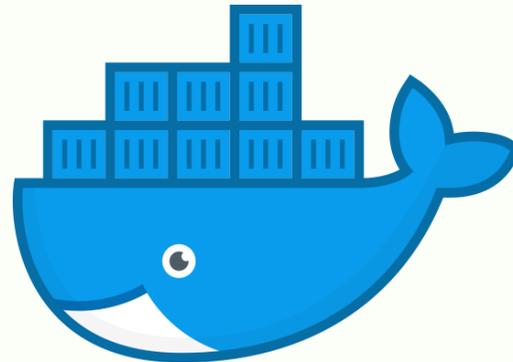
TECH-STACK



HYPERLEDGER



YEOMAN



POSSIBLE IMPROVEMENTS

1. Integration of indigenous fraud detection system

1. We can add a fraud detection system for detecting any malicious nature of the borrower. This will be an added security factor for the lenders who are pooling their money.

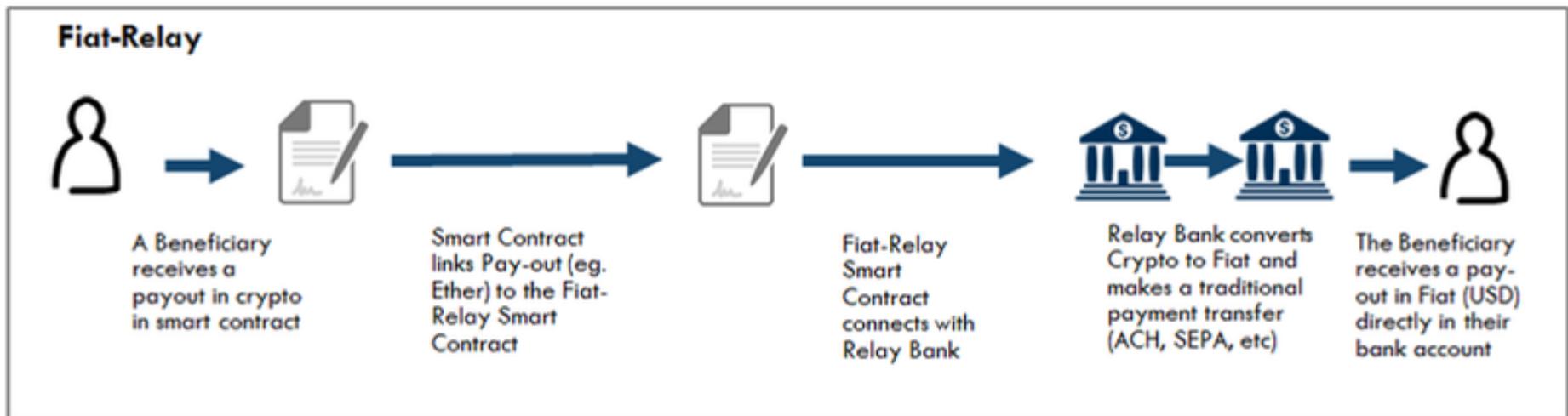
2. This will be the first layer of ensuring that the borrower does not end up stealing the money. So, the lender can lend without any worries, and after he is repaid, he can lend again and the money plant grow.

Because this is a lending platform, not a donation one!

2. SOLUTION TO THE CRYPTO-EXCHANGE PROBLEM (ETH):

Integration with FIAT-Relay:

1. Fiat Relay is an open source initiative to provide an automated solution to exchange cryptocurrency to fiat currency, without the need of any association with a crypto-exchange.
2. This provides an automated solution for conversion of fiat currency to cryptocurrency avoiding the long and tiring process of using a crypto-exchange which can take up to 5 days.



MORE ON THIS PROJECT



GITHUB

<https://github.com/souradeep-das/ayuda-hl>



VIDEO

<https://www.youtube.com/watch?v=tUHbLQloUxg&feature=youtu.be>

THANK YOU FOR YOUR TIME!

Kindly get in touch to let us know if you have any questions.

