



FastLoan Tracking System

BCDV 1011 BLOCKCHAIN DESIGN PATTERNS

OVERVIEW

A system to track repayments on microfinance loans. FastLoan leverages blockchain technology to connect borrowers and lenders directly, ease auditing, improve operational efficiency and ultimately decrease lending costs.

PROBLEM

Microfinance has been developed to help the underprivileged or the unbanked in procuring financial assistance with minimal hurdles. It is understood better as lower loan amounts provided for smaller businesses at comparatively low interest. However, the high logistics cost of conducting microcredit resulting in higher interest rates and difficulties with KYC compliance has hindered the success of the system. Another major obstacle is lack of transparency. The lender is not aware of the borrowers and status on payment of loans and vice versa, thereby needing complete reliance on the middlemen.

GOAL

The goal of this project is to develop an open platform that allows borrowers to ask for an amount of money that would help them in executing their projects. Investors can browse the list of available loan requests from borrowers and decide to offer the full amount of money to them. The amount of the loan will be calculated based on Ether.

MEASURING SUCCESS

The system should facilitate a simple, hassle free and quick access to loan for borrowers. Also, Lenders should have visibility into the system, being able to view the timeline of the fast loan's payment installments in a transparent and convenient manner.

The system should be able to generate an accumulative report about the repayment's installment for project loans so that the owner can audit easily.

STAKEHOLDERS

- Investors /Lenders: These are people looking to invest in small-scale projects.
- Borrowers: This set of stakeholders have projects that need financing.
- Validators: Owner of the smart contract, other accounts approved as owners or authorized off-chain users. They will approve the projects to be financed.
- Development Team

TEAM

Name	Designation
Trung Ngo	Development Team
Temple Okosun	Development Team
Moayyad Alfari	Development Team
Oluwaseun Soetan	Development Team

RESTRICTIONS

- The investors should be qualified and accredited investors. They should be registered before they can finance a project.
- Cap on the budget of the project to be funded – maximum of 10 ethers.
- Only 1 fast loan request every 2 year (tentative, can be changed later)
- Borrowers should have good credit histories.
- Collateral can be required for fast loan.

STATE DATA

- **Off-chain (those related to PII's)**
 - + history credit score (moderate)
 - + investor name
 - + Borrower name

- + Contact info (email, address, phone number)
- + project scope of using that loan
- **On blockchain:**
 - + loan amount (collected or paid back) for each borrower
 - + interest amount used on each loan
 - + timeline – flexibly scaled – in months, years, or could be weeks if needed for shorter loan
 - + number of installments
 - + How many projects and loans were approved
 - + How many loans were successfully paid back

OTHER DATA TO BE CAPTURED

- Total amount of loan given by an investor
- Lender Address
- Borrower Address

DATA GENERATED

- + Fast loan's contract:
 - Total loan amount sent by lender
 - Total amount given for loans from all investors.
 - Balance (the remaining amount left in the whole loan)
 - Borrowers' loan approved and payment histories.
 - Loan amount collected/withdrawn by each borrower's
 - Number of installments (in overall timeline of the loan)
 - Interest/profit paid back to investor
 - Capital withdrawal by investor

RESTRICTION BY ROLES/USERS

- Off-chain: read/write only allowed for developers, chief executives (inside the system)
- On-chain: no write allowed for users in the loan tracking system
- Borrowers cannot be lenders and lenders cannot be borrowers.

CALCULATED RESTRICTIONS

- Fixed interest rate of 5%

EXCEPTIONS

- Once the loan request is approved, any rule or financial agreements cannot be broken -> securitized loan.

EDGE CONDITIONS AND RESPONSE

If there are no repayments as at when stated, the borrower will be fined. In the case that the borrower completely defaults in payment:

- Decrease Credit score (off chain) or at worst completely “shatter” the credit score to default min value

On chain transactions can also be used to judge the borrower’s behavior overtime and if found at fault, the smart contract should prevent such borrower from getting future loans.

FUTURE ENHANCEMENTS

- AML on Investors.
- Flexible installment plan (like after getting loan approval, can modify the installment plan from every 6 month to faster or slower)