

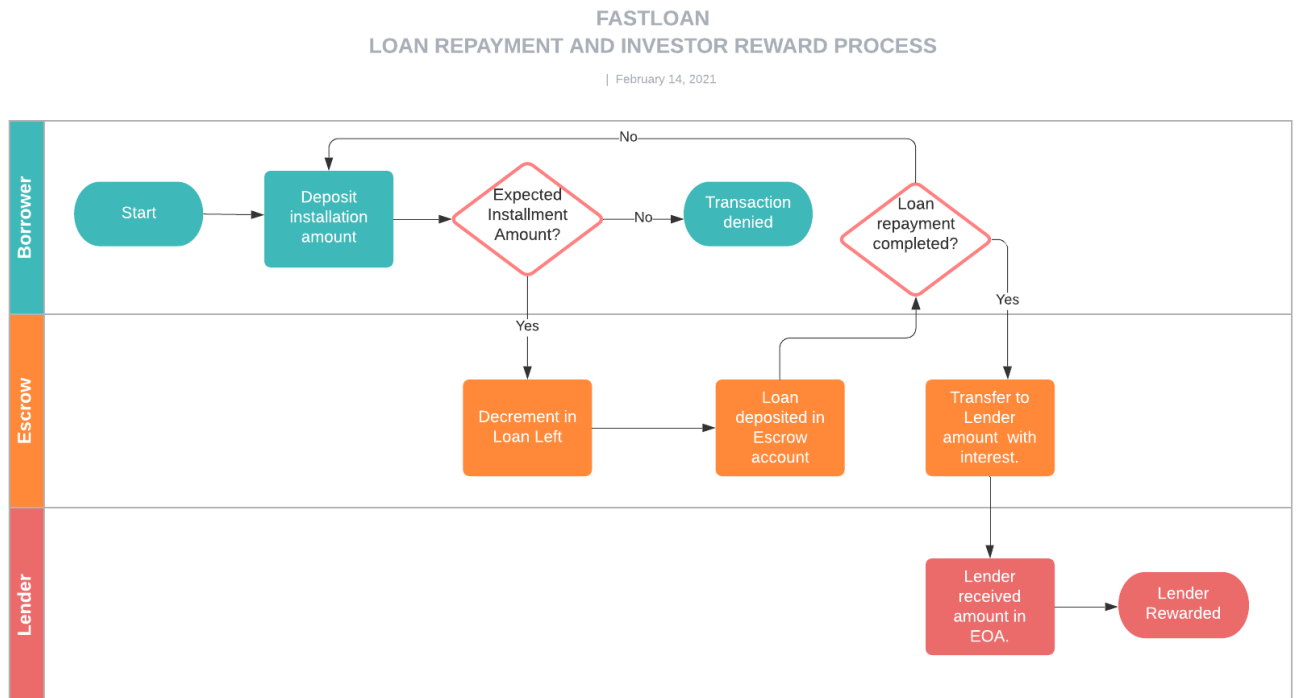
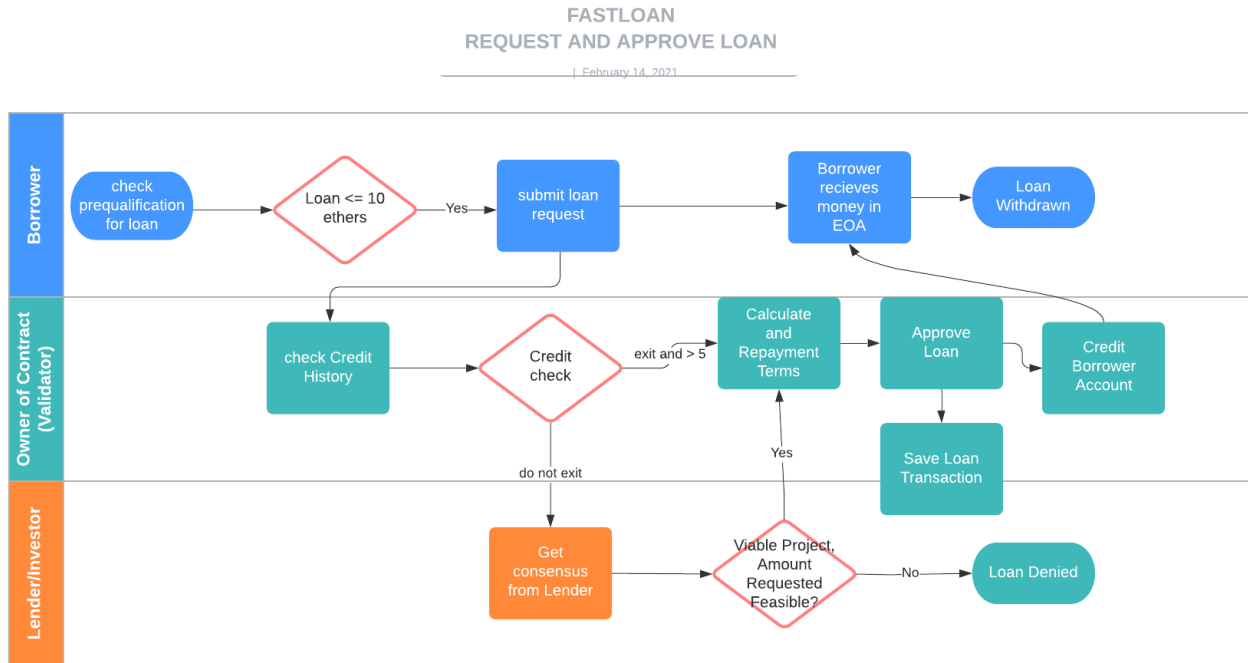


FastLoan Tracking System

BCDV 1011 BLOCKCHAIN DESIGN PATTERNS

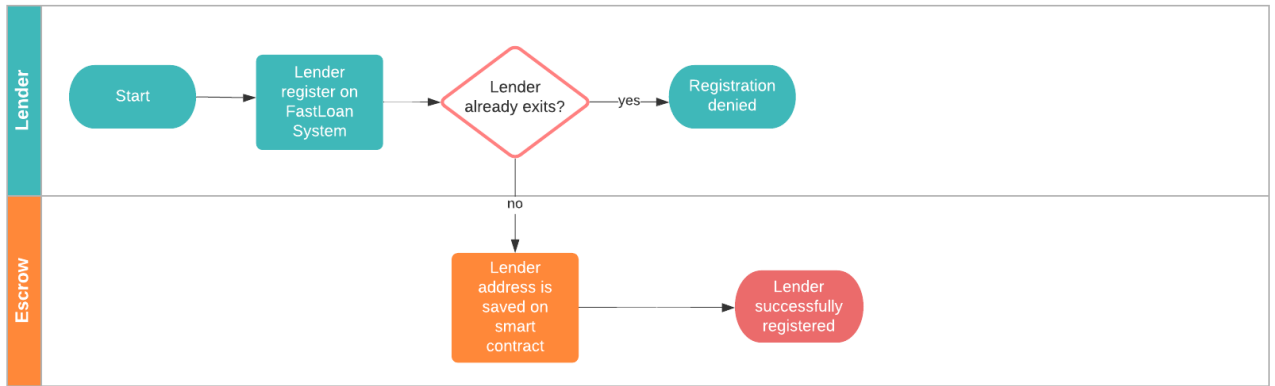
SYSTEM ARCHITECTURE

Process Models

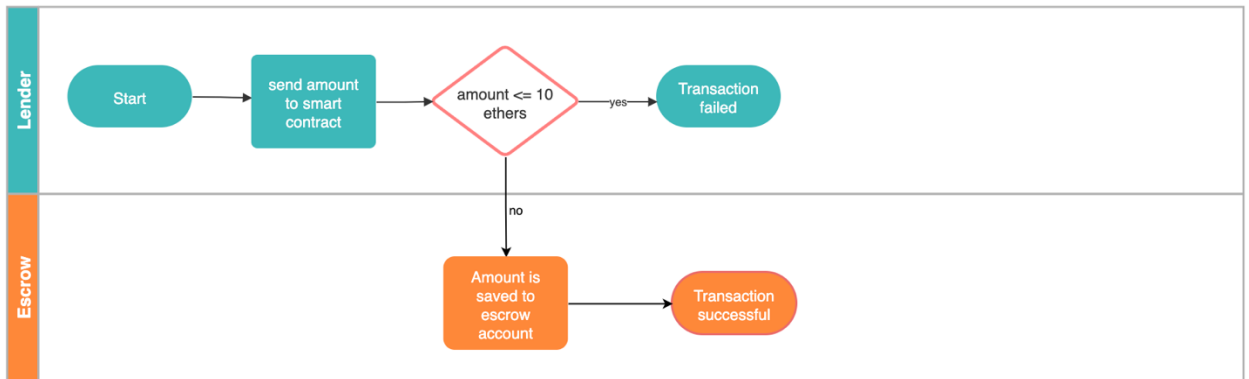


FASTLOAN

FASTLOAN
REGISTER LENDER PROCESS
| February 14, 2021



FASTLOAN
LENDER DEPOSIT TO ESCROW ACCOUNT PROCESS
| February 14, 2021



Data Dictionary

On-chain

Loan Project (currently – 1 lender owns 1 project)

Data – State Variables	Description
projectId	Uint256 - project hash/id
Loan	Struct – for approved loan
requestIDs	An id to link and access loan details.
requests	Mapping - (byte32 => LoanRequest)
loanDB	Mapping - (byte32 => Loan)
projectId	uint256 - project hash/id
projectTitle	String- title of the project
projectDuration	Uint- Duration of the project – should be 6 months.
amount	uint256 - Project Budget
escrowBalance	Uint256 - Current available amount available in escrow account that lenders deposited.
InterestRate	Uint256 - A fixed interest rate set to be 5%.
fixedDuration	Uint256 - Project duration fixed for 6 months.
requiredNoInstallments	Uint8 - number of installments for which the amount will be paid back.
remainingNoInstallment	Uint8 – number of installments remaining to be paid back.
fixedDuration	Uint256 - Project duration fixed for 6 months.
afterInterestBalance	The total amount to be returned back to lender including the interest.
interestAmount	Calculated amount as interest
paymentEndTime	Deadline to pay back loan
debt	Total amount that borrower owns
userLoan	Mapping (address => bytes8) to find out loan of a borrower.

Borrower, Lender and Validator

Data – State Variables	Description
borrower	Address – borrower's hash/id
lender	Address – borrower's hash/id
lenderDepositInEscrow	Uint256 – Amount the lender deposited to escrow.
isClosed	Bool – set to true when the loan has been fully paid by the borrower.
nonce	Random variable used to calculate requestId.
lendersExisted	Bool – to find out if a lender has registered or not.
borrowersExisted	Bool – to find out if a borrower is approved or not.
allBorrowers	Array – contain list of borrowers.
allLenders	Array – contain list of lenders.
allProjects	Array – List of projectId.
balance	Current balance of borrower
numberOfLoanCleared	Uint8 – amount of loans has been cleared by borrower in the past.

numberOfInstallmentRequested	Uint8 – original requested number of installments by borrower
superValidator	

Off-chain

Data	Description
Credit History	Borrower’s credit history (mock data currently)
Lender's details	Lender's details save on the database
Borrower’s details	Borrower’s details save on the database
Project full details	Project details save on the database

UI Wireframes

Logo

FastLoan

Choose your role?

Borrower

Project ID

Project Title

Amount

Submit

My Loan Details

Current Detb

No of installments

Record Payment

Lender

Name

Address

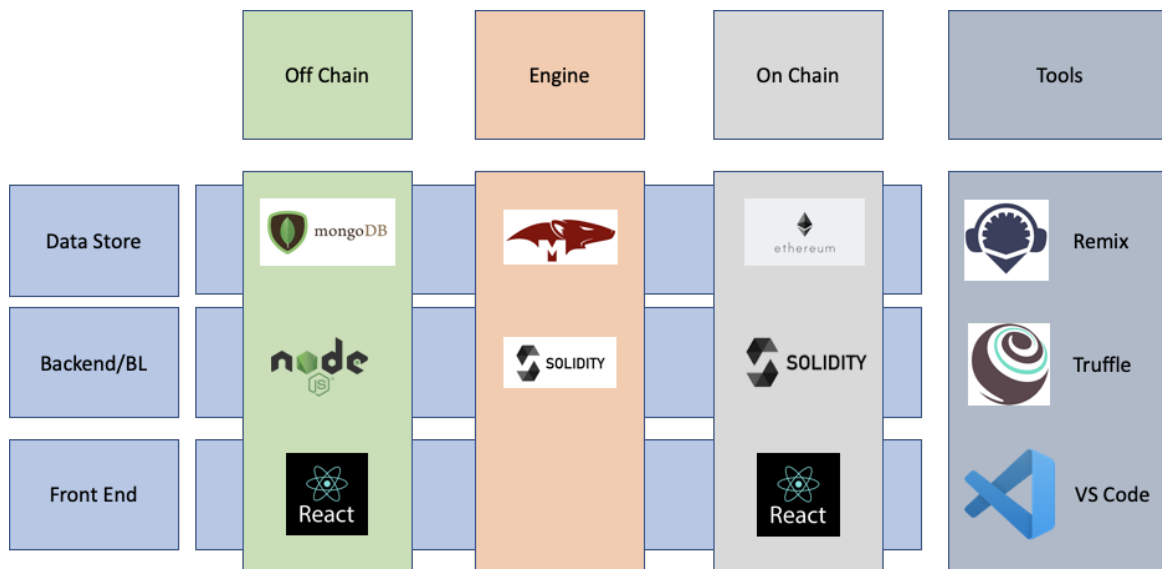
Contact

Register

Super Validator

Loan ID	Loan Details	Action		
1	ABC, Bob, Jason	Approve	Transfer	Deposit
2	XYZ, John, Alice	Approve	Transfer	Deposit

Technology Stack



Sequence Diagram

