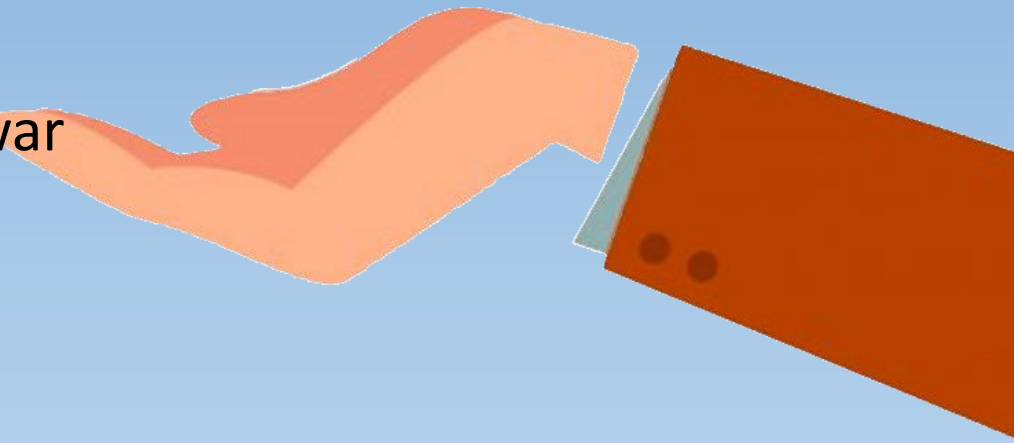
Vehicle Collateralized Loans

Vijendar Goud Kaira

Aditya Yashwant Pallewar

Pooja Mashalkar



Objectives

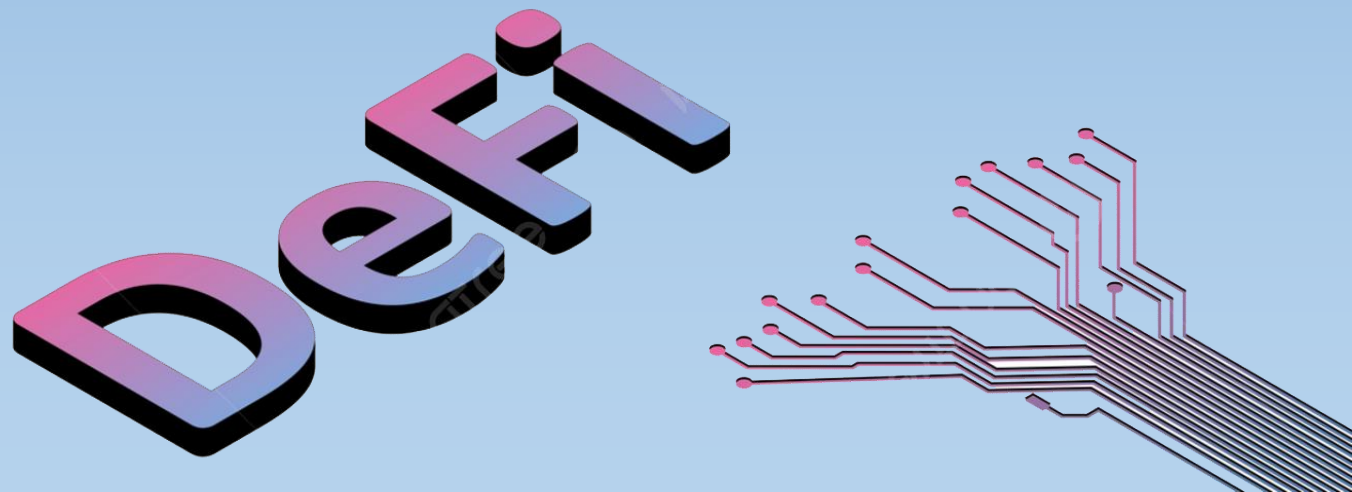
- Introduction to DeFi
- Actors involved
- Background checks for debtors
- Operational requirements for managing physical asset registration
- How would the lender be incentivized? What would be the moving parameters involved?
- Choice of one or more blockchain frameworks, which, why and how?
- High level technical architecture diagram
- User workflow diagram for all parties involved
- Barrier of entry analysis
- Conclusion and recommendations

What is DeFi ?

- Decentralized finance ("DeFi") is a decentralized financial ecosystem based on blockchain technology.

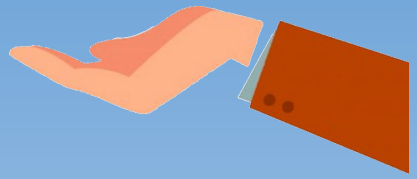
- Aims at creating a Banking System not governed by a central Authority.

- Allows lenders and borrowers to interact in a single platform without the need of middleman.

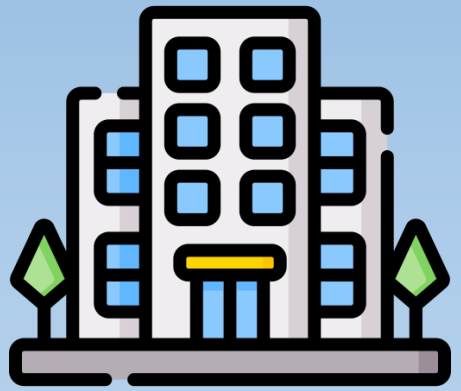


Actors Involved

LENDER



BORROWER



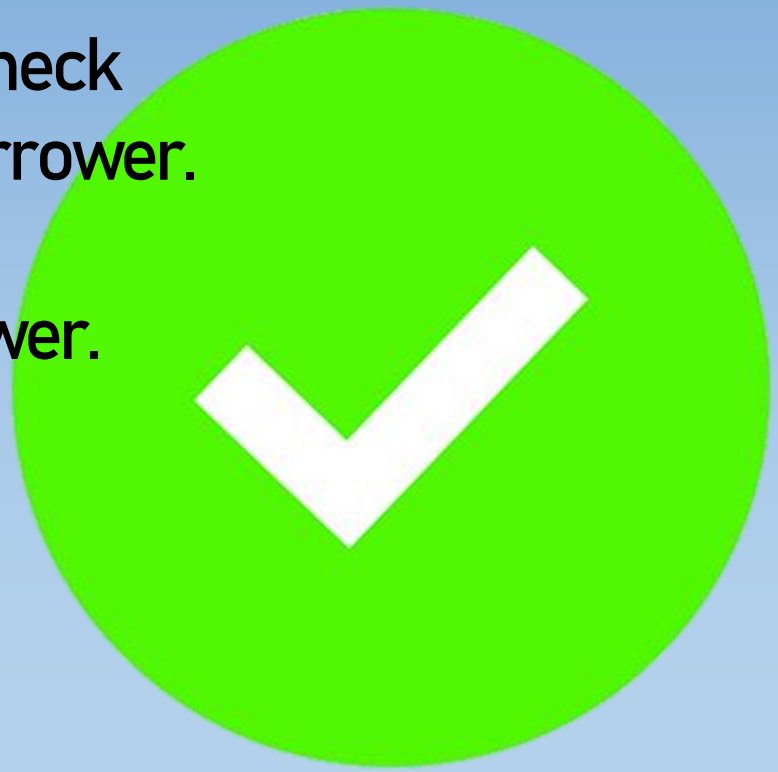
RTO

Regional Transport office. Government org. which validates documents and provide ownership of vehicle.

DATABASE

Background checks for debtors

- Borrower applies for a loan, his creditworthiness is checked.
- Different organizations, different process to check creditworthiness. Hence, discomfort to the borrower.
- Credit rating are not transparent to the borrower.

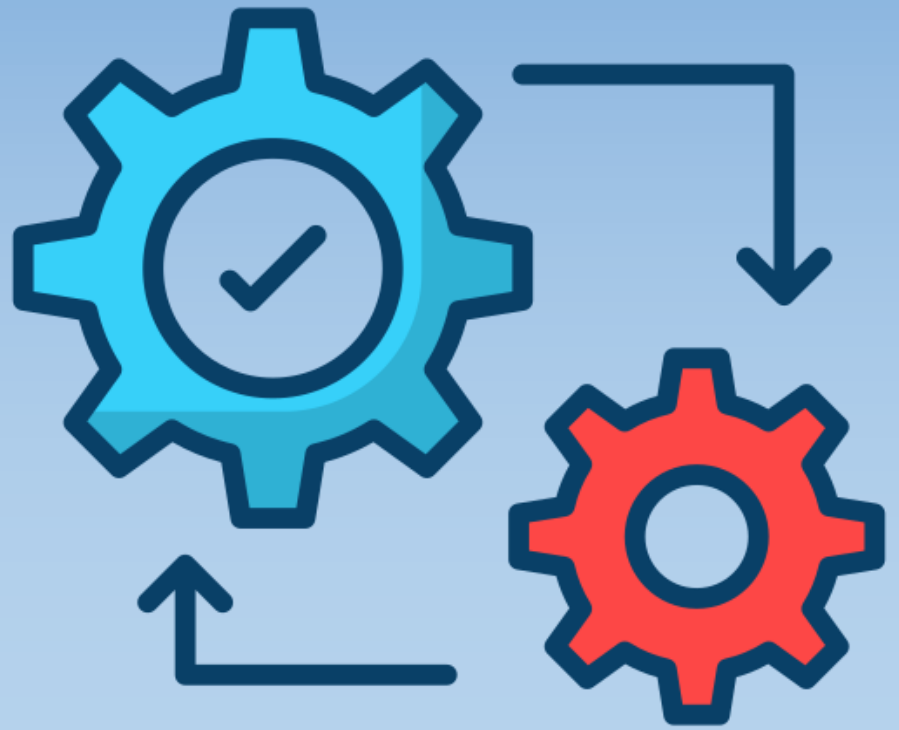


Integrating with Blockchain

- Creditworthiness of the borrower is checked only once and then stored in the database.

- If the borrower satisfies the credit score limit, he will be allowed in the system.

- Credit score of the borrower is transparent.



Physical asset registration and verification

-Vehicle is registered with the RTO.
-NFT of the documents is mined.

Factors to determine the validation of car

(By Bank):

1. Condition
2. Age
3. Depreciation value (up with age)

How would the lender be incentivized?

DeFi lending mainly relies on the lending pools where the users can add their assets to the lending pool and ensure quick distribution among borrowers through smart contracts.

Interest rates

Governance tokens

Liquidity Mining

Security And Risk Management

What would be the moving parameters involved?

there are several moving parameters that may be involved in various protocols and applications. These parameters can often be adjusted by the protocol's governance or through community consensus

- Interest rates
- Minimum collateralization ratio
- Token supply
- Governance parameters
- Liquidity mining rewards

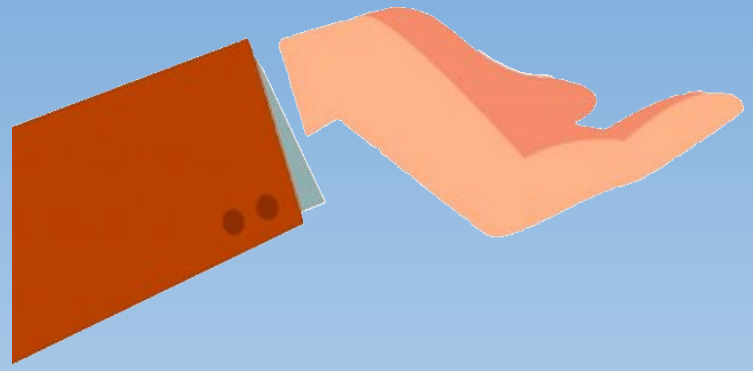
Risk assessment for creditors

Creditors can easily check the ability to repay the loan taken by the borrower.

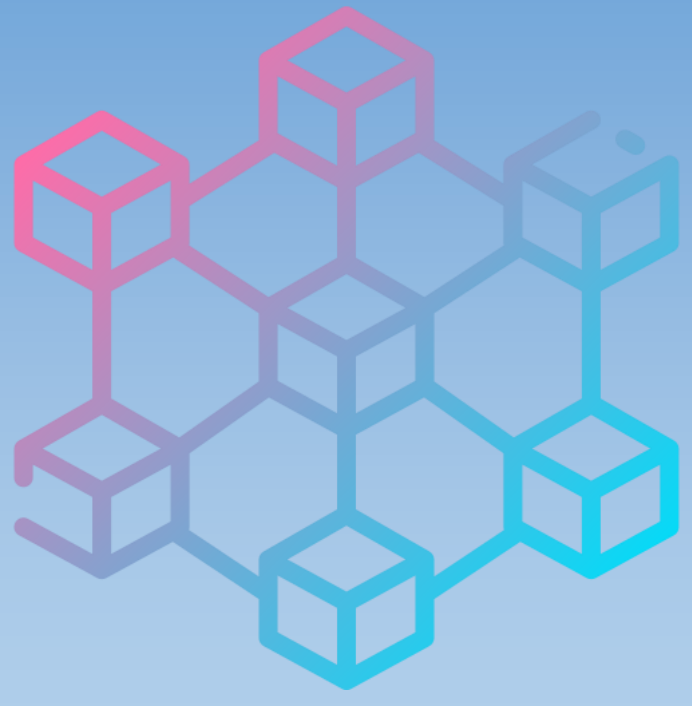
Vehicle information can be easily mined from the RTO office.

Borrower's income is also easily accessible

Marketplace for the discovery of the amount of credit extended and interest rates



Select appropriate lender



Borrower can choose the appropriate lender as per his requirement

Ability to pool credit for small creditors and distribution of incentives

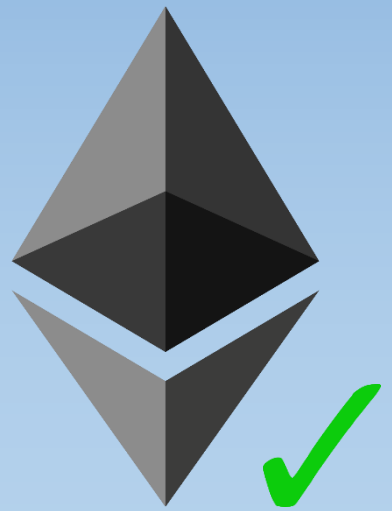
- There is no dis-parancy among small and large creditors. Everyone is listed on the system and the borrower can choose amongst the small creditors too.

Loan defaults and how to manage them

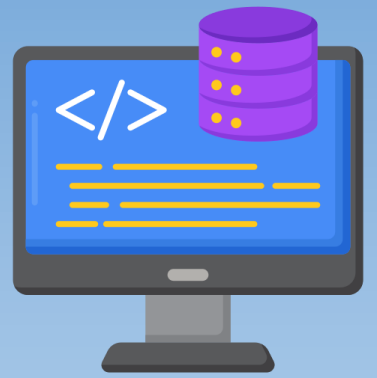
- Loan default - Borrower failing to repay.
- Ownership of the NFT is transferred due to smart contract

Choice of one or more blockchain frameworks which, why and how?

- Ethereum is the best suited blockchain. In spite of low throughput, security provided features and transparency and large market size makes it the best choice.



Technical Architecture Diagram



FRONT END
(WEB3.JS)

SMART
CONTRaCT

BACK END

User Flow Diagram

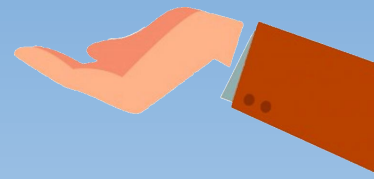
Lender

Smart Contract

Market Pool

Ownership Document

RTO



Borrower

Barrier of entry analysis

- Onboarding.

- Acceptability of the new age platform by lenders and borrowers.

Conclusion and recommendations

- Collaterized loans for Vehicles being decentralized eases the process in both ways.
- Still, mass adoptability is a concern.
- Killer apps are needed
- Onboarding should be easy

Googledrive link:
https://drive.google.com/file/d/11jXlAnsa9khL0ijxOq7IzL5LLlIHorNY/view?usp=drivesdk