

Improving the car rental system

Deqode's state-of-the-art blockchain based car renting system removed any centralized authority needed for renting out cars on a short-term basis.



deqode.

Challenge

Client issues and requirements

- To remove any centralized authority needed for renting out cars on a short-term basis, without compromising trust in the ecosystem
- Providing flexibility in incentives and fare policy for the car owners, which should not be controlled by any mediating entity
- Improve owner-renter interaction and reach to improve the ride experience
- Transparency in the documentation of the vehicle to be rented out, all the required documents should be available for the customer to check the authenticity of the vehicle

Framework

Hyperledger Sawtooth

Deqode's Solution Overview

How we helped the client realize his goals

- Removal of the central authority required a distributed peer to peer trustless platform which would allow all the participants to collaborate in their respective roles
- Blockchain platforms by definition are distributed peer to peer networks with varying degree of trust, depending on the consensus. A Blockchain was thus used to maintain profiles of owners and renters of the cars. Some background checks are however required for the car owners
- Smart contracts utilized for creating and updating required profiles on the chain. The details of the ride and the associated costs stored on the chain
- An authenticated rider could access the platform through a mobile app which would find available vehicles. A car could be booked and paid for using currency issued on the blockchain
- A ledger was used for maintaining which car had been rented by which user and for what duration
- All sensitive information was encrypted before storing it on the blockchain so as to prevent the participants from spams

Tech Stack

*Languages/ Runtimes/
Frame works:*

Node.js, Javascript, Go, BASH,
React.js

*DevOps, DB, and Other
Utilities:*

Kubernetes, Docker, IPFS,
HAProxy, Redis, PostgreSQL,
GitLab, CI/CD Pipeline