Share-park Decentralized Parking Management

Abhinav Kalra (49003052)

Chinmay Rai (49003052)

Motivation

- Difficulty in finding a parking space

- Finding a cheap parking space

- Leads to problem and causes delays

Blockchain approach can **Solve** all these problems!!!

About

Propose a DApp -

- Maintains database of parking spaces

- Property owners can list their space online

- User can view the available parking spaces

- **Smart Contracts** to ensure quick settlement.

Functional Requirements

Property Owner Actors

- List out his property for a specific period of time.
- Earn profit by analyzing the prices in their area
- Receive payment directly in their wallet

Parking space seeker Actors

- Search for a space in a particular area
- Book a particular space on app after comparing prices
- Payment deducted automatically from account
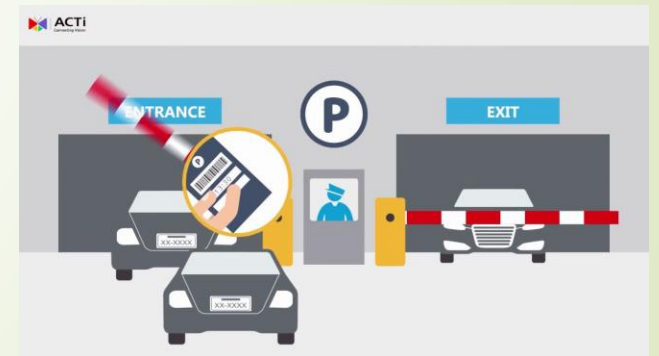
Non-Functional Requirements

- **Cost-Efficient** due to competitive and open market

- **Secured** Payments using one of the cryptocurrency

- **High Accessibility** to anyone & everyone wishing to park

- **High Response Time :** real-time platform

- **Transparency** because its based on Blockchain

Architecture

Frontend Layer

Backend on Ethereum
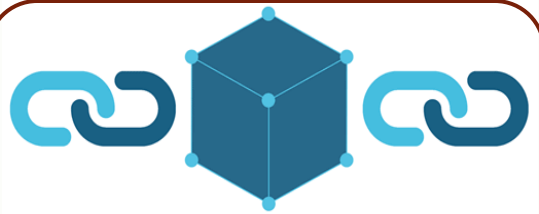
Decentralized system
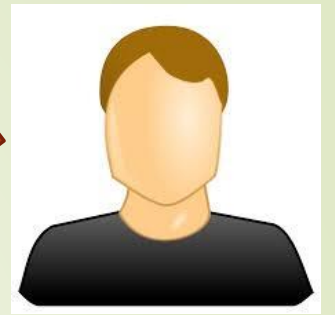
Parking Space owner — Lists Parking Spaces

Vehicle Owner — Books Parking space

Vehicle owner — Books Parking space
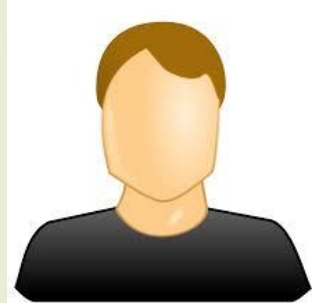
Vehicle owner — Books Parking space

Technology Used

- Use **Ethereum** as our Blockchain.

- **Solidity** for writing smart contracts

- **Truffle Framework** to deploy, compile and test smart Contract code

- **Metamask** extension to connect to Ethereum.

- **Web3.js** for to client-side app to **talk** to blockchain.

- **CSS** and **HTML** for frontend Client interface.

- We wish to Use **Google Maps API** for maps
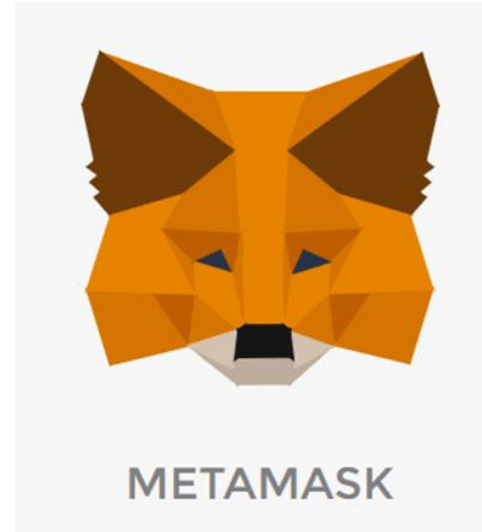
Related Work

- **ParkGene** integrates all types of parking services to offer the best and most complete user experience to drivers and parking operators.

Timeline

Learn the DApp basics

Implement smart contracts and start working on front end

| 4 Nov. | 18 Nov. | 2 Dec. | 15 Dec. |

Create function to chose validator and make transaction

Debug and finish the prototype and submit it

References

Images -

https://parkgene.io/

https://medium.com/fbdevclagos/why-web-accessibility-is-important-and-how-you-can-accomplish-it-4f59fda7859c

http://omanait.com/parking-management-system/