

HACKFS 2021

Carbon Reviews

An immutable and tamper-proof review system

Who are we



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- Coding students from 42 Kuala Lumpur
- Just learned about the blockchain technology a month ago

What we built

An immutable and tamper-proof review system
for a product's carbon footprint
(using Ethereum & web3storage)

- 63% of US online consumer behavior survey respondent in 2017 agreed to the importance of reviews



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Without CarbonReviews

Central authority / 3rd party may
filter or tamper with reviews

Prone to whitewashing &/ Sybil
attacks

Users don't have to buy the product
to leave a review

With CarbonReviews

Use of smart contract eliminates the
need of central authority

Registration requires valid credit
card number and Ethereum address,
3-way mapped to a unique userID

Carbon-review token is issued upon
successful product purchase



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How it works



Smart Contract

Allow reviews to be written only when prerequisite conditions are met

Web3storage

A cheaper storage alternative that ensures data persistence

Scaffold-eth

Using React to interact with web3storage and Tailwind as front end

Demo

How it's made



- Using mapping and modifiers within the smart contract to create multiple layers of security protocol
- Store reviews along with product ID and reviewer's address in a JSON format on web3storage
- Store CID returned from IPFS on the smart contract
- Read the file retrieved from web3storage and present the product reviews in a meaningful way



Future work

Integrity is paramount when it comes to user reviews.

- Review voting system for authentic reviews
- Authentic vs fraudulent badge
- Premium reviewer & enhanced reward mechanism
- Include scoring metrics as guide
- Use carbon scores to gauge individual carbon footprint



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Thanks