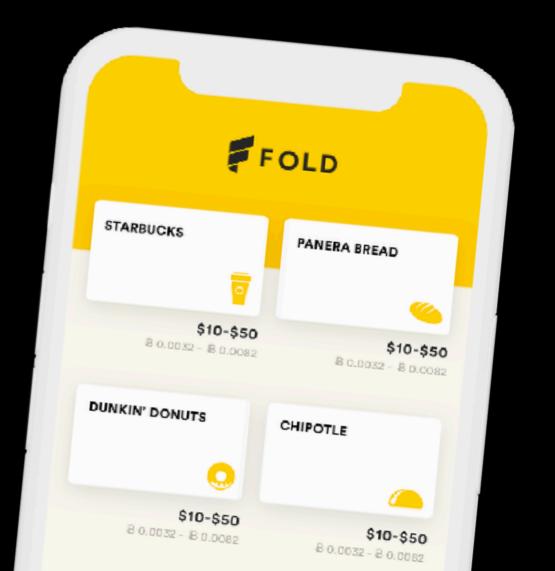
TAGGART BOWEN-GADDY

ORGANIZING YOUR WEB3 DAPP WITH MODERN REACT

thesis*





THE THING THAT I OFTEN ASK STARTUPS ON TOP OF ETHEREUM IS, 'CAN YOU PLEASE TELL ME WHY USING THE ETHEREUM BLOCKCHAIN IS BETTER THAN USING EXCEL?' AND IF THEY CAN COME UP WITH A GOOD ANSWER, THAT'S WHEN YOU KNOW YOU'VE GOT SOMETHING REALLY INTERESTING.

Vitalik Buterin

REVIEW OF TERMS

- Blockchain: An immutable list of "blocks"
- Ethereum: An implementation of a blockchain network that supports Smart Contracts
- Smart Contracts: The "business logic" that determines what gets added to the Blockchain
- ▶ Ether: The currency used by the Ethereum Network
- Decentralized App: An application that takes advantage of the above architecture instead of a centralized server + DB

HOW DOES A DAPP GET BUILT?

HOW DOES A DAPP GET BUILT?

- HTML / CSS / JS in an ethereum-enabled browser
 - MetaMask, A Chrome Plugin
 - Mist, Official
 - Toshi, Mobile by Coinbase
 - Cipher, Mobile
 - Trust, Mobile

HOW DOES A DAPP GET BUILT?

- One or more Smart Contracts deployed to Ethereum
 - Today we're using the official Ropsten TestNet

INTERACT WITH THE BLOCKCHAIN!

- Web3.js
 - Abstraction built by Ethereum team
 - Does everything you need
- Ethereum Explorer
 - etherscan.io
 - etherchain.org
 - ethplorer.io

METAMASK

METAMASK

- RPC-enabled to talk to Ethereum Nodes on the network
- Connect to full network, a TestNet, or local blockchain
- Acts as a Wallet
- ▶ Injects a web3 (v0.2) object onto window
- metamask.io

WEB3

WEB3

- Today we're using Web3.js, but supports other languages
- Almost everything is Async
- In addition to web3.eth:
 - web3.shh: Whisper Protocol for secure messaging
 - web3.bzz: Swarm Protocol for distributed file storage

WEB3 0.2 OR 1.0? ... OR ETHJS?

- ▶ V0.x
 - Uses BigNumber.JS for big numbers
- V1 is still in beta
 - Support Callbacks AND "PromiVents"
 - Promise chain + EventEmitter chain
 - Use Async / Await
 - Subscribe to Blockchain changes
- ▶ EthJS is not a web3 wrapper
 - Preferred by MetaMask in the future
 - Smaller minified/gzipped

LETS GET STARTED

LETS GET BETTER

CONTEXT

CONTEXT IN REACT 16

- Pass data through an entire subtree
- Now in 16:
 - Explicitly create a "Provider" that wraps that subtree and passes values
 - Explicitly create a "Consumer" that wraps the render node that will use one of those values
- Useful for passing down data + functionality

HIGHER ORDER COMPONENT

HIGHER ORDER COMPONENTS

- Useful to access your context as a prop
- Create a function that wraps your component and injects useful information as a prop (like something from a Context Consumer)

I CAN'T BELIEVE NO ONE HAS DONE THIS BEFORE!

OTHER OPTIONS

- react-web3
 - General use-case web3 Provider for React
 - https://github.com/coopermaruyama/react-web3
- Drizzle
 - ▶ Full Redux framework
 - Modular Base framework, React connector, React Component Lib
 - Part of Truffle, a suite of tools for Ethereum dApp development
 - https://truffleframework.com/blog/drizzle-reactive-ethereum-data-forfront-ends