OBG Onboarding W23 Syllabus

1 Overview

By the end of onboarding you should have a technical understanding of how a blockchain works, what makes it different from other type of networks, and how to interact with a blockchain as a first-class citizen. This course is focused on the infrastructure that makes blockchains possible and will not cover the application layer of blockchains. Onboarding will spend a lot of time on topics from computer science and economics, however no prior understanding is necessary. Although this course is focused on blockchains, the point of it is to give you an appreciation of free and open source software.

At the end of onboarding new members will present a project at the general meeting. After their presentation, they will be rewarded with voting power in the OBG DAO. Members who do not present a deliverable will not receive voting power in our DAO.

2 Topics

2.1 Week1: The Cathedral and the Bazaar

This week establishes a mental model for software development. We will talk about what type of software was built under the cathedral and bazaar models. We will also talk about what types of software is best suited for each model and why blockchains are good platforms for building in the bazaar. This week is mostly focused on censorship, data ownership, and network effects.

Homework: Pet3rpan before bitcoin series

2.2 Week2: Blockchain technical overview

This week is focused on understanding how blockchains work. This week talks about different nodes, different clients, and how governance/forks work. There is an emphasis on understanding the state transition function as well as protocol rules for when to drop a peer from the network.

Homework: Run a full node

2.3 Week3: The theories and technology that powers blockchains

This week is focused on understanding the prior work that allows blockchains to exist. This includes examining the history of BFT consensus and NP class cryptographic problems. Different approaches to consensus are thoroughly examined, including the breakthrough of Nakamoto's chain-based consensus protocol.

Homework: Read the bitcoin whitepaper and the papers it cites

2.4 Week4: How to interact with a blockchain

This week focuses on the use of RPC nodes, browser wallets, and centralized exchanges. This week emphasizes the problem of using trusted third parties, and is meant to force onboarding members to ask the question of why blockchains should be used if users are not running nodes.

Homework: Make a metamask wallet and use a Dapp

2.5 Week5: Fundamental problems to scaling blockchains

This week focuses on the fundamental problems to scaling blockchains, and how RPC nodes, VCs, and money grabs have caused blockchains to gain popularity despite their immaturity. We look at the scaling problem (cost of gas / cost of verifying the chain), Ethereum's scaling roadmap, and other approaches to scaling and why they suck.

Homework: Read a couple posts from eth.research and eth-magicians.

3 Resources

Club website: `https://www.oregonblockchain.org/`

Twitter: `https://twitter.com/oregonblock`

DAO: `https://snapshot.org/#/uoregon.eth`