Decentralized Web
webinar series by

Resource guide
session 01

Decentralized Web

AN INTRODUCTION

Thursday, January 27, 2022
What does it mean to be ‘decentralized’?

A decentralized network is one where control is shared among multiple actors, and not concentrated in only a few large players, platforms, or servers. Control comes in many forms, such as having ownership of web infrastructure (e.g. servers or portals), ownership of data, influence to make decisions about the network, the power to delete contents, or decide who may access the network’s shared capabilities, information, and knowledge.

In decentralized networks, control of infrastructure and other technologies can be distributed among contributors rather than dictated by large (“central”) players.

↑ Wallace, Brandon D. “Beyond Mere Decentralization – The Orthogonal Web.” Stories from the Decentralized Web (blog), April 8, 2021
Most decentralized protocols are “open source,” meaning that the code is publicly available for others to add to or iterate upon.

Some of the components of the World Wide Web that can be decentralized include storage, hosting, domain names, data, identity, data transport layers, or payments. Since at least 2015, the DWeb community has been dedicated to developing these technologies to build the web of the future – also known as the DWeb. The goal is to empower users to communicate and share using secure, private, and open technologies.

**Examples ↓**

**Centralized networks**

Facebook is a centralized network, where data is controlled by a central, all-powerful company.

**Distributed networks**

Amazon's Cloud is a distributed network, where the data is stored across a grid, but still controlled by a central entity.

**Decentralized networks**

Interplanetary File System (or IPFS) is a peer-to-peer hypermedia protocol, where the creator, Protocol Labs, does not control where or how the data is stored.
Web 1.0 and Web 2.0

One way to think of the web’s development over time is in terms of users’ evolving relationship with the web’s content and their possibilities to engage with said content. Right after the World Wide Web came into public use in the early-to-mid 1990s, a typical user’s (self-hosted) website would be made up of hyperlinked text, files, applications, and other (static) digital objects that could be read and/or downloaded by website visitors. Users could read the content but not comment on it or alter it. This is why Web 1.0 has been called the read-only web.

Web 2.0, our present stage, started to develop in the early-to-mid 2000s. This is when platforms emerged to allow users to interact with content, and with one another. In Web 2.0, users make posts (such as comments or replies to other content) on websites that are usually hosted (and owned) by third parties, like Facebook profiles or Ebay product pages. Because these services strongly encourage (and benefit from) user-generated content, as well as user participation and engagement, Web 2.0 has also been called the read-write or social web.

The current Web has empowered everyone to become a publisher, sharing ideas and knowledge. But over time, Web 2.0 developed into a system that puts control in the hands of a few actors (corporate or governmental), to the detriment of individual user’s privacy, security, and freedom of access.
The definition of Web 3.0 is still being debated. Some argue that the Decentralized Web and Web 3.0 are actually very different in form, function and mission. Here’s how we define these two different technological realms:

The Decentralized Web seeks to decentralize all the layers of the current “Web stack”. It requires a decentralized way to store and retrieve files, decentralized log-ins so users can interact, and a peer-to-peer payment system. A distributed identity system (proving you are who you say you are) that obviates the need for centralized usernames and passwords. Public key encryption that can protect privacy, so users could have more confidence they weren’t being spied on. Decentralized databases could allow information to ‘live’ in many different places, so information can’t easily be blocked or erased. The Decentralized Web could create a new “hash” code each time a web page changes, making past versions of the Web verifiable.

Meanwhile, Web 3.0 has come to mean the “blockchain-ification” of the Web, using blockchain technologies & cryptocurrencies to verify transactions, pay for services, and certify content such as NFTs. The central innovation of Web 3.0 is the verification that blockchains afford. Some call this a “trustless” system, because you no longer have to trust the company or platform; the trust lies in the blockchain data itself. Others also lump in
Artificial Intelligence (AI) and virtual reality (the Metaverse) into Web 3.0.

In her essay, “Web3 is Self-Certifying,” Jay Graber proposes this definition: “Web3 is user-generated authority, enabled by self-certifying web protocols. These are a superset of technologies that include blockchains, but are not limited to them.” In this framework, users have cryptographically verified identities, post verifiable data, and the host can’t change them. We know this sounds a lot like a blockchain, but it’s broader than that. Some well known decentralized protocols that don’t rely on a blockchain include IPFS, Hypercore, Secure Scuttlebutt, and Peergos. In this webinar series, we’ll be demonstrating how these decentralized protocols actually work.
Recommended Resources

Decentralized Web FAQ by Wendy Hanamura

Why Have a Decentralized Web? By John Ryan in Medium

What Exactly is Web3? Video by Juan Benet, founder, Protocol Labs, at Web3Summit 2018. (Note: at about 6:00 he explains Web 1.0, Web 2.0 and Web 3.0 in a pithy way)

Dive Deeper


From the Bottom to the Top: Mai Ishikawa Sutton on the Decentralized Web by Mai Ishikawa Sutton [Logic Magazine article], May 2021


Exploring the Decentralized Web. Video series produced by the Filecoin Foundation for the Decentralized Web

Community Resources

GetDWeb.net - web site of the DWeb Community, a global network of meetup groups working to build a better web, following these core principles

Redigest - Monthly newsletter by Redecentralize.org

Stories from the Decentralized Web - Medium Channel with event recaps, articles & reposts of fundamentals of the Decentralized Web

DWeb Community Calendar

Try it out!

INOCULATE, Issue 02 of COMPOST Magazine. Published by Distributed Press and hosted on decentralized infrastructure. Read more about COMPOST on the project’s Wiki.

How to Use IPFS with the Brave browser by the Basic Attention Token Community. A short explainer video for beginners.

Try installing Beaker Browser, the browser that lets you build peer-to-peer websites
Join the upcoming sessions

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