MAKER GUIDE 3

DECENTRALIZED STORAGE

INTRODUCTION

Maker Guide 3 will introduce you to Filecoin and demonstrate the power of decentralized storage. The lessons will teach you how and **content addressing**, along with **hashing**, enable verifiable data sharing with peers on the decentralized web.

This guide is a quick introduction, and is not definitive. We encourage you to take the ProtoSchool tutorial shared in the Learn More section to explore further.

Hashing

A hash is like a data converter. It takes any amount of information and turns it into a fixed-size code. This code remains the same size no matter how much data you start with. You can't go back to the original data from this code, just like you can't turn ground beef back into a steak. However, if you apply the same conversion to the same data, you'll always get the same code. This helps confirm that the data hasn't changed if you already know its code. Hashes enable us to trust data because we can guarantee it hasn't been edited.

Content Addressing

In decentralized storage, content addressing is akin to solving a jigsaw puzzle by matching the pieces' patterns and colors, rather than trying to remember where each piece belongs in a large box. You connect the pieces based on their unique features, much like content addressing lets you access data by its distinctive content, not its precise storage location in a decentralized system.

INTRODUCTION TO FILECOIN

Cloud data storage is generally only available from a small number of tech companies. They set their pricing and their limits, and they have full control of your files and data. Filecoin is different. It's a decentralized storage network that revolutionizes how we store and retrieve data. By leveraging blockchain technology, Filecoin creates a marketplace where users can rent out their unused storage space or purchase storage from others.

This decentralized approach ensures data integrity, security, and resilience by distributing files across multiple **nodes** (users). Uploading files is simple and user-friendly, with automatic encryption and splitting into smaller pieces.

When the files are needed, Filecoin reassembles and securely delivers the files back to the user.

Nodes

In cloud data storage, "nodes" are individual devices that team up to store and manage data efficiently, similar to the way shelves in a library collectively hold books for organized storage. Just as you can add or remove shelves as needed, you can add and remove storage across different devices.

LEARN MORE

Filecoin has put together learning content to help you understand more about data sharing. These lessons will teach you about data sharing with peers on the decentralized web.

To explore further, complete the training session and quiz today.

Do you have any questions?

This guide is supported by an award from the Filecoin Foundation for the Decentralized Web.

Feedback? Want to get more involved?

Drop us a message at makerlabs@techsoup.org