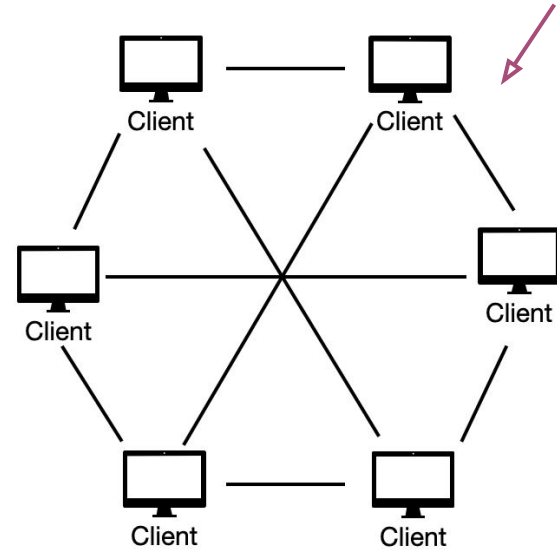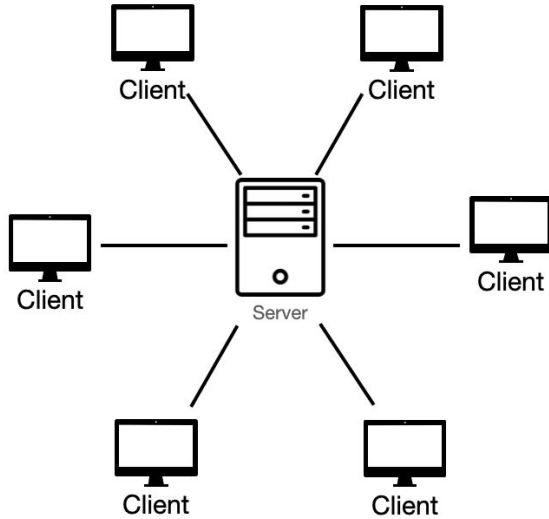# W3B Workshop:
Empowering Apps with Blockchain

The DaVinci Competition 2024

Nikhil Lakhwani & Sabrina Hirani
Adapted from tutorial slides from CSCD71: Blockchains and Decentralized Applications
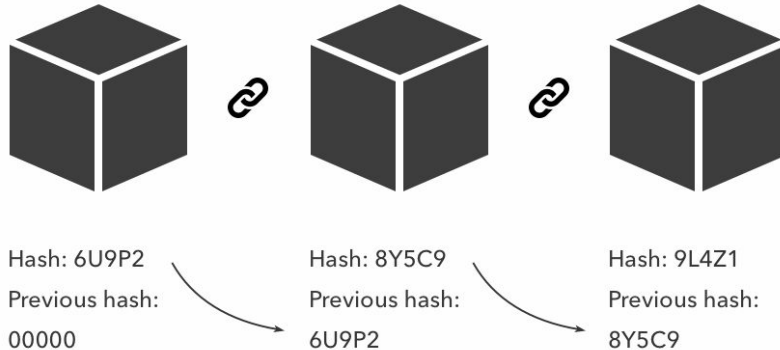
Cryptocurrency: "Digital Cash"

What is a
Blockchain?

Client
Client
Client
Server
Client
Client
Client

Client
Client
Client
Client
Client
Client

What is a
Blockchain?

1 **No one can change existing data**

2 **No one can add bad data**

Hash: 6U9P2
Previous hash:
00000

Hash: 8Y5C9
Previous hash:
6U9P2

Hash: 9L4Z1
Previous hash:
8Y5C9

1

2

Advantages

Permissionless

There is no central governing entity

Ex. DeFi

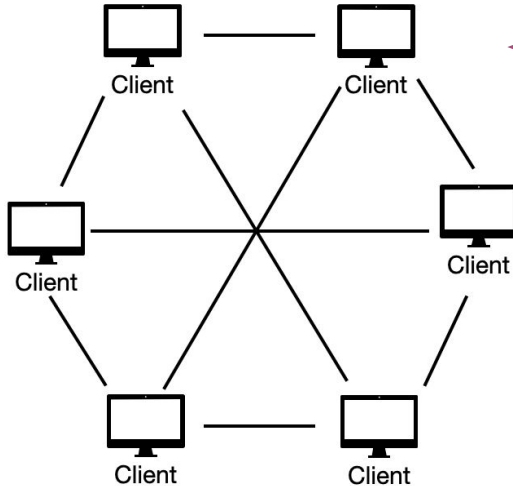## Persistence (Immutability)

Existing data cannot be modified/deleted

Ex. Patents

Transparency

Data is visible to everyone

Ex. Charity

What is a
Blockchain?

← **This is an account!** (simplistically)

Internet: https://www.web3uoft.com/ → information

Blockchain: 0x13348abDEF24dC1D934c9f86e75777dE978E62BB → $$$

↑
Address

WE CAN ALSO HAVE CODE AT AN ADDRESS

What is a
Smart Contact?

CODE AT AN ADDRESS ← **$$$**

(programmatically executing transactions)

- Global Variables
- Functions
- Events

Use Cases

ERC20 Token	ERC721 Token (NFT)	DAO
A Digital Asset	A Unique Digital Asset	Decentralized "Governance" (Decision Making)

Code Walkthrough

- ❖ ERC20 Smart Contact Walkthrough
- ❖ DAO Smart Contract Walkthrough
- ❖ Getting Started With Metamask
- ❖ Deploying A Smart Contract