

CSC-478 Scope Statement

Brief synopsis

Project is a web application that creates file into a NFT (Non-Fungible Token) on the ethereum network.

What is the Ethereum network?

According to wikipedia (wikipedia.org/wiki/Ethereum), Ethereum is a permissionless, non-hierarchical network of computers (nodes) which build and come to consensus on an ever-growing series of "blocks", or batches of transactions, known as the blockchain.

What is a blockchain?

A blockchain is a database that is a distributed, immutable ledger of transactions. In a decentralized blockchain, any node can join the network according to the consensus and it's 100% transparent. In a centralized blockchain, only designed nodes control the network and it's not transparent.

A NFT is a digital contract stored on the blockchain that creates a unique token and digital ownership. The file is the digital asset. The client's wallet address is mapped to the NFT address. The frontend serves an interface for client to upload file. The backend serves file to IPFS and the ethereum network.

Scope

1. What type of platform (Windows, Macintosh, UNIX, etc.) must the software work with?

- Linux - Ubuntu (LTS)

2. Will the software function as a standalone application on a given computer, or will it function over a network connection?

- HTTPS

3. What other software, if any, must the software interact with? For example, you might be building a subsystem component that will be integrated into a larger system. In such a case, it's important that you don't duplicate functionality provided by existing subsystems.

- IPFS
- Ethereum Blockchain,
- Ethereum Wallet
- Docker

4. What programming language(s) will be used for the project?

- Javascript
- Solidity

5. Will the software use a graphical interface or a command line interface?

- Web UI/UX

6. What is description of the application?

- The application has client create a file (digital asset) into a NFT. As a result, client's wallet address is mapped to the NFT. Therefore, the client has digital ownership and no one can copy it.

What's an NFT?

According to ethereum.org/en/nft :

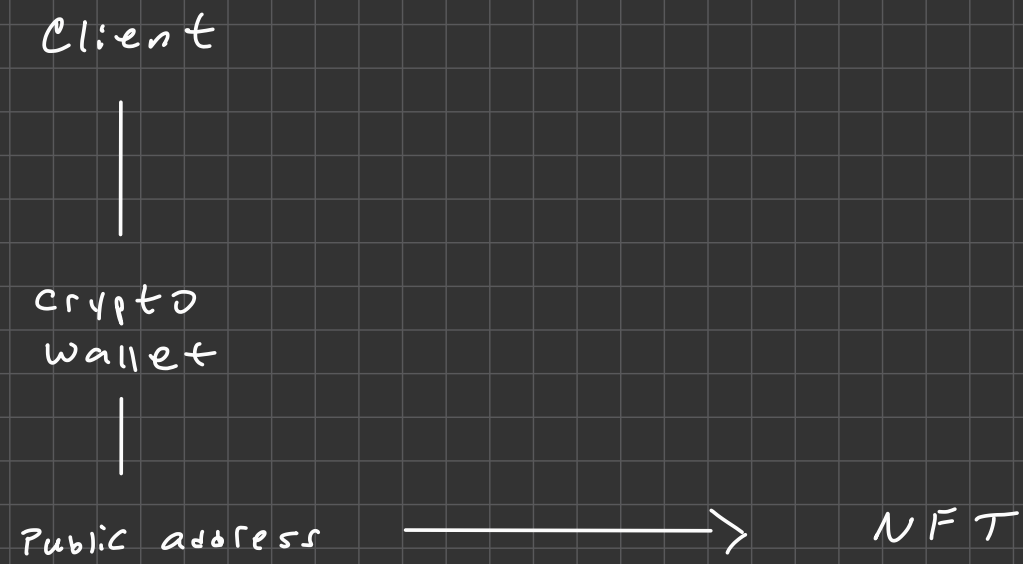
NFTs are tokens that we can use to represent ownership of unique items. They let us tokenise things like art, collectibles, even real estate. They can only have one official owner at a time and they're secured by the Ethereum blockchain – no one can modify the record of ownership or copy/paste a new NFT into existence. NFT stands for non-fungible token. Non-fungible is an economic term that you could use to describe things like your furniture, a song file, or your computer. These things are not interchangeable for other items because they have unique properties. Fungible items, on the other hand, can be exchanged because their value defines them rather than their unique properties. For example, ETH or dollars are fungible because 1 ETH / \$1 USD is exchangeable for another 1 ETH / \$1 USD.

Non-fungible tokens (NFT)

- A way to represent anything unique as an Ethereum-based asset.
- NFTs are giving more power to content creators than ever before.
- Powered by smart contracts on the Ethereum blockchain.

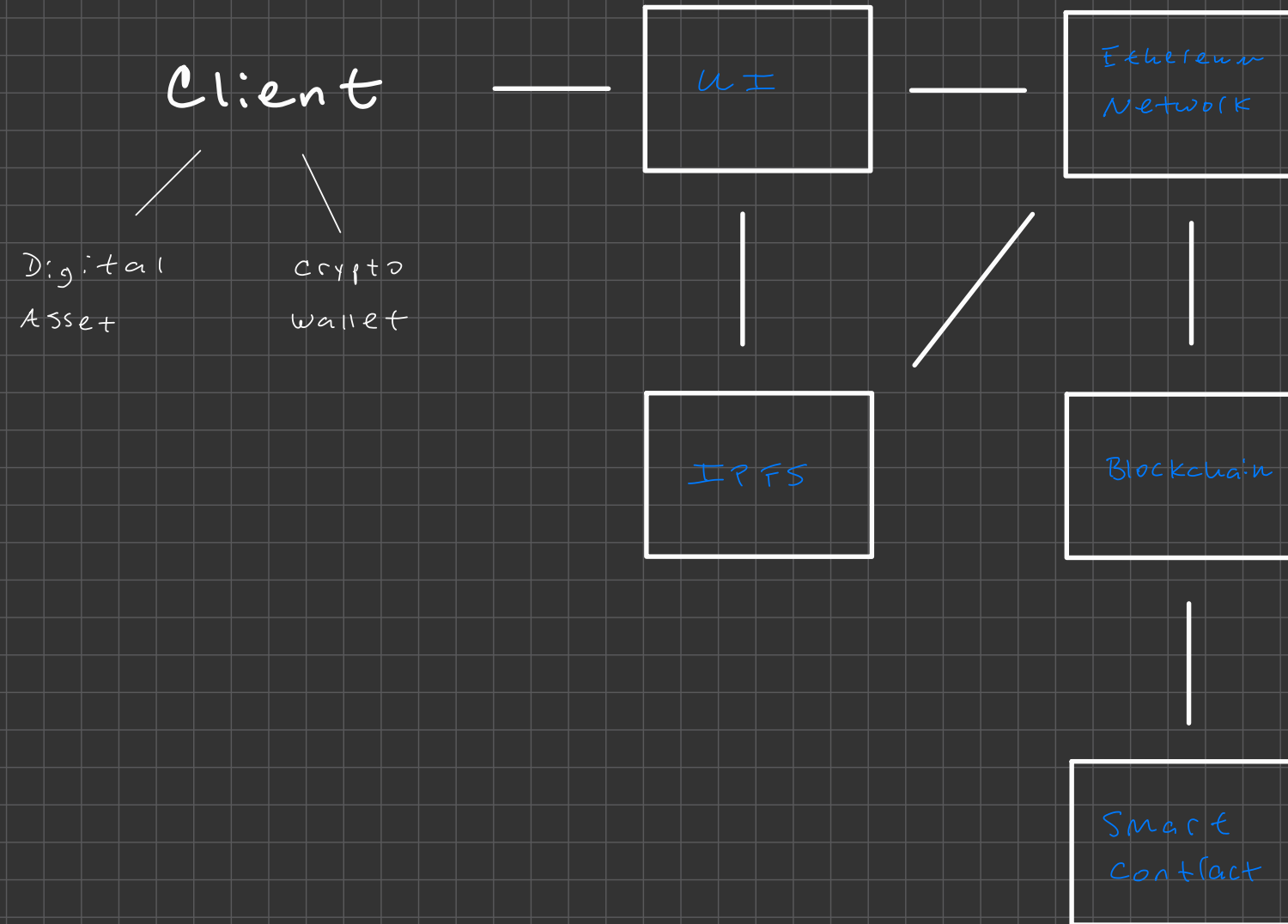
Source: <https://ethereum.org/en/nft>

How does client store the NFT?



Public address is mapped to address of the NFT. Therefore, the transaction is saved on the blockchain and the NFT stores the client's address as proof the client is the owner.

Overview



Flow

