

Building NFT Wallets Using Token Bound Accounts on Ethereum

Description

Token Bound Accounts allow you to use any NFT as a wallet on Ethereum. They can be used to onboard users, reduce gas fees, represent characters in on-chain gaming, and represent a basket of goods in an investment portfolio. This beginner friendly workshop will introduce you to NFTs, Externally Owned Accounts (EOA), and Contract Accounts, before diving into what Token Bound Accounts are, why they are important, and a simple coding demo on how you can build with them.

Learning Outcomes

After this workshop, you will be able to:

- Know what externally owned accounts (EOA) and contract accounts are, and the differences between the two.
- Know what an NFT is and how to build them.
- Know what a Token Bound Account is, and how to build with them.

Prerequisite Knowledge

Familiar with what a blockchain and NFT is at a high level, and have set up a crypto wallet before.

Pre-Workshop Checklist

Before the workshop, please make sure you complete the following items:

- If you are completely new to blockchain, read:
<https://ethereum.org/en/developers/docs/intro-to-ethereum/>



Technical Jargon and Definitions

- **Blockchain:** A distributed database that many people have a copy of and is continuously growing.
- **Ethereum:** A blockchain that lets you create programs (smart contracts) on top of it.
- **Smart Contracts:** A program that is stored on the blockchain.
- **Non-Fungible Token (NFT):** A token that is unique (non-fungible) and can represent digital items like in-game collectibles or real-world items like artwork or real estate.
- **Externally Owned Account (EOA):** An account controlled by a private key.
- **Contract Account:** An account controlled by a smart contract (code).
- **Token Bound Account (TBA):** An NFT that can act as a contract account.

Timeline (70 minutes)

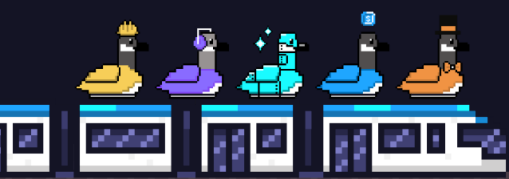
Time	Module	Description
20 Minutes	What are NFTs, Externally Owned Accounts, Contract Accounts?	High-level introduction on NFTs and the two main types of accounts in Ethereum.
10 Minutes	What are Token Bound Accounts?	Introduction to Token Bound Accounts, the problems it solves, and ERC-6551.
30 Minutes	How do you build with Token Bound Accounts?	Live coding demo on building and testing a basic Token Bound Account smart contract.
10 Minutes	Q&A	

Workshop Lead Contact

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Additional Resources

Hack the North Resources

[Hack the North 2023 Event Schedule](#)

Check this out to stay up-to-date on activities, workshops, and other key happenings this weekend.

Workshop-Specific Resources

<https://info.etherscan.com/understanding-ethereum-accounts/>

The code we will be demoing closely follows the two files below:

- <https://github.com/erc6551/reference/blob/main/test/mocks/MockERC6551Account.sol>
- <https://github.com/erc6551/reference/blob/main/test/examples/simple/SimpleERC6551Account.t.sol>

