

ERC20 and ERC721 Tokens

TOKEN

- Digital asset that is built on top of another blockchain.
- Tokens represent a particular asset or utility and reside on their blockchain.

ERC20

- ERC20 is fungible token.
- ERC20 stands for **Ethereum Request for Comments 20**.
- Standard interface for tokens.
- Value stored in a smart contract states.

ERC20 Interface and Functionality

- Key Functions: mint, burn, totalSupply, balanceOf, transfer, transferFrom, approve, allowance.
- Events: Transfer and Approval events that must be triggered on certain actions.
- Implementation: Each token contract can implement the interface differently.

ERC721

- A technical standard for non-fungible tokens (NFTs) on the Ethereum blockchain.
- Non-Fungible Tokens (NFTs): Unique tokens with distinct characteristics and values.
- Key Functions: `balanceOf`, `ownerOf`, and others for managing NFT transactions.
- Events: Transfer and Approval events that get triggered on certain actions.
- Use Cases: Artworks, collectibles, tickets, and more.

Creating, Deploying, and Implementing an Simple ERC20 Token

- Write a smart contract that implements function required in ERC20 standard:
 - balance mapping
 - Mint()
 - Burn()
 - Transfer()
 - balanceOf()
 - totalSupply()
 - name()
 - symbol()
 - decimals()

Solidity

- Access Modifiers (private,public,internal,external)
- Storage types: storage, calldata, memory
- view, pure, payable