ERC-20 i ERC-721 specifikacije

ERC-20

- Osnovna funkcionalnost transfer, odobrenje.
- Ponovo korišćenje od strane drugih aplikacija
- Problem sa slanjem ERC-20 tokena

Tether, Bitcoin, Dogecoin

```solidity
// SPDX-License-Identifier: GPL-3.0
pragma solidity >=0.8.0 <0.9.0;
import "@openzeppelin/contracts@4.8.1/token/ERC20/ERC20.sol";
import "@openzeppelin/contracts@4.8.1/access/Ownable.sol";
/// @title A contract for demonstrate ERC-20 Token
/// @author Jitendra Kumar
/// @notice For now, this contract just show how to create an ERC-20 Token

contract GFGToken is ERC20, Ownable {

    constructor () ERC20("GFGToken", "GFG") {
        _mint(msg.sender, 1000 * (10 ** uint256(decimals())));
    }

    function decimals() public view virtual override returns (uint8) {
        return 8;
    }
}
```

Primer loše ispraćenog standarda (BNB)

```
1  interface BadERC20Basic {
2    function balanceOf(address who) external constant returns (uint);
3    function transfer(address to, uint value) external;
4    function allowance(address owner, address spender) external constant returns (uint);
5    function transferFrom(address from, address to, uint value) external;
6    function approve(address spender, uint value) external;
7
8    event Approval(address indexed owner, address indexed spender, uint value);
9    event Transfer(address indexed from, address indexed to, uint value);
10 }
```

ERC-721

- Osnovna funkcionalnost praćenje i transfer NFT
- Jedinstvena vrednost i metapodaci

Primer: Cryptokitties

Primer tokena koji prati ERC-721 standard

```solidity
// SPDX-License-Identifier: GPL-3.0
pragma solidity >=0.8.6 <0.9.0;
import "@openzeppelin/contracts/token/ERC721/ERC721.sol";
import "@openzeppelin/contracts/access/Ownable.sol";
import "@openzeppelin/contracts/utils/Counters.sol";
import "@openzeppelin/contracts/token/ERC721/extensions/ERC721URIStorage.sol";
/// @title A contract for demonstrate ERC-721 Token
/// @author Jitendra Kumar
/// @notice For now, this contract just show how to create an ERC-721 Token
contract GFGToken is ERC721, Ownable, ERC721URIStorage {
    using Counters for Counters.Counter;
    Counters.Counter private _tokenCountCounter;
    constructor() ERC721("GFGToken", "GFG") {}

    //mint the NFT token along with the TokenURI using Owner Address
    function safeMint(string memory _tokenURI) public onlyOwner {
        uint256 tokenCount = _tokenCountCounter.current();
        _tokenCountCounter.increment();
        _safeMint(msg.sender, tokenCount);
        _setTokenURI(tokenCount, _tokenURI);
    }
    //burn the NFT token
    function _burn(uint256 tokenCount) internal override(ERC721, ERC721URIStorage) {
        super._burn(tokenCount);
    }
    //return the TokenURI of the NFT token
    function tokenURI(uint256 tokenCount) public view override(ERC721, ERC721URIStorage) returns (string memory)
    {
        return super.tokenURI(tokenCount);
    }
}
```

Glavne razlike

ERC-20	ERC-721
Zamenjivi	Jedinstveni
Deljivi	Nisu deljivi
Jedan zajednički smart contract	Poseban contract za svaki token
Nema ownership funkcija	Ownership funkcije
Nema razlike u vrednostima	Vrednost svakog tokena je drugačija