

ERC20 Exercise 1

Intro

Your goal is to create an ERC20 token, based on OpenZeppelin `ERC20.sol` contract, deploy it to your local hardhat chain, and test it.

Accounts

- 0 - Deployer & Owner
- 1 - User1
- 2 - User2
- 3 - User3

Tasks

Create your contract under the `./contracts/erc20-1` folder:

1. Import and inherit from OpenZeppelin `ERC20.sol` contract
2. Choose your token NAME and SYMBOL
3. Set a contract owner upon deployment
4. Implement an external `mint()` function which can be called only from owner

Testing:

1. Deploy your contract from the deployer account
2. Mint 100K tokens to yourself (Deployer)
3. Mint 5K tokens to each one of the users
4. Verify with a test that every user has the right amount of tokens
5. Transfer 100 tokens from User2 to User3
6. From User3: approve User1 to spend 1K tokens
7. Test that User1 has the right allowance that was given by User3
8. From User1: using `transferFrom()`, transfer 1K tokens from User3 to User1
9. Verify with a test that every user has the right amount of tokens

Links that might be useful

1. ERC20 Standard on Ethereum Website
<https://ethereum.org/en/developers/docs/standards/tokens/erc-20/>
2. ERC20 Source code on Github <https://github.com/OpenZeppelin/openzeppelin-contracts/tree/master/contracts/token/ERC20>
3. Hardhat Tests <https://hardhat.org/tutorial/testing-contracts>