

Blockchain Concepts and Technologies

Project Assignment CA1

Introduction:

The aim of the project is to set up an Ethereum account on the testnet network, creating a ERC20 token with pre-defined parameters. A front-end Node application is developed which interacts with the Ethereum network to perform token distribution operations.

The prerequisites for the project are,

- Metamask account
- Remix Ethereum IDE
- Node.js
- Visual Studio Code

Metamask account is a cryptocurrency wallet which helps in interacting with Ethereum blockchain. It can be connected to any platforms that handle Ethereum blockchain. A metamask account is created and respective plugins are installed.

Remix is an online IDE for developing, compiling, and running smart contracts. It is an opensource tool used for writing solidity contracts and it supports JavaScript. Ethereum ERC20 token is issued using Remix IDE. Post developing the code is also compiled and verified post development and can be published is published.

Node.js application is used to develop the front end of the Ethereum contract. This is used for a GUI to demonstrate the basic token distribution activities on the ERC20 token. Node.js compiler is used to install packages that are required for interfacing the GUI with the Ethereum smart contract.

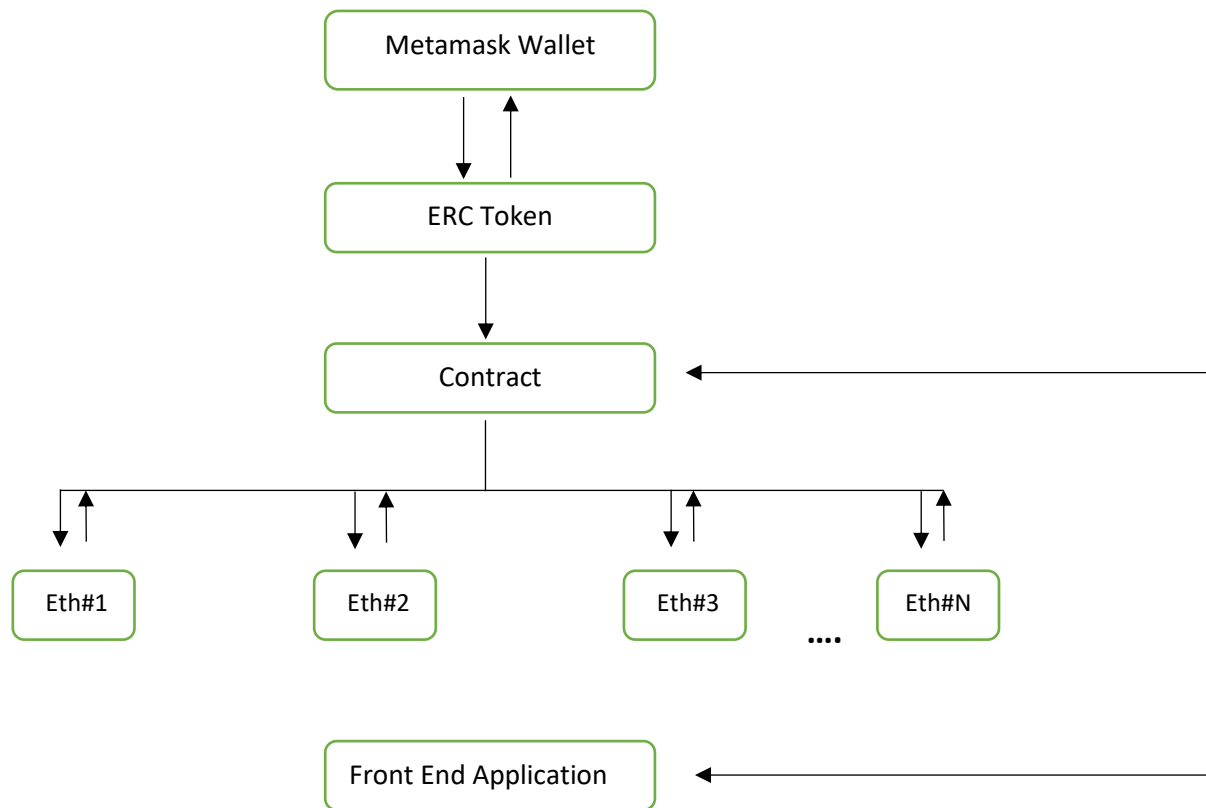
Setup and Configuration:

After creating a metamask account, faucets are used to mine ether coins that are used during the project, for transactions.

The code for developing the contract is done on Remix IDE and it is compiled to no errors using solidity compiler, post which the transaction is executed and deployed.

Post developing the smart contract, using Ethereum packages such as web3.js library which supports remote and local Ethereum node, an application is developed to make user friendly interaction with the user for token distribution on Ethereum testnet network.

Process of Operation:



References:

<https://docs.openzeppelin.com/learn/deploying-and-interacting>

<https://www.tvassignmenthelp.com/questions/blockchain-concepts-report-writing-technologies-ethereum-erc20-token-with-test-network-it-assignment-help>

<https://medium.com/coinmonks/ethereum-tutorial-sending-transaction-via-nodejs-backend-7b623b885707>

<https://medium.com/bitquery/bitcoin-and-ethereum-balances-and-its-entropy-c0e1254de29a#:~:text=Entropy%20is%20a%20known%20measure,completely%20%E2%80%9Cdescribe%E2%80%9D%20the%20system.>