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Assignment 4


```solidity
// SPDX-License-Identifier: GPL-3.0
pragma solidity >=0.7.0 <0.9.0;

contract NDCoinERC20 {

    event Transfer(address indexed from, address indexed to, uint tokens);
    event Approval(address indexed tokenOwner, address indexed spender, uint tokens);

    string public constant name = "VANEET SINGLA Coin";
    string public constant symbol = "VS";
    uint8 public constant decimals = 10;

    mapping(address => uint256) balances;

    mapping(address => mapping (address => uint256)) allowed;

    uint256 totalSupply_;

    constructor(uint256 total) {
        totalSupply_ = total;
        balances[msg.sender] = totalSupply_;
    }

    function totalSupply() public view returns (uint256) {
        return totalSupply_;
    }

    function balanceOf(address tokenOwner) public view returns (uint) {
```



```solidity
    function balanceOf(address tokenOwner) public view returns (uint) {
        return balances[tokenOwner];
    }

    function transfer(address receiver, uint numTokens) public returns (bool) {
        require(numTokens <= balances[msg.sender]);
        balances[msg.sender] -= numTokens;
        balances[receiver] += numTokens;
        emit Transfer(msg.sender, receiver, numTokens);
        return true;
    }

    function approve(address delegate, uint numTokens) public returns (bool) {
        allowed[msg.sender][delegate] = numTokens;
        emit Approval(msg.sender, delegate, numTokens);
        return true;
    }

    function allowance(address owner, address delegate) public view returns (uint) {
        return allowed[owner][delegate];
    }

    function transferFrom(address owner, address buyer, uint numTokens) public returns (bool) {
        require(numTokens <= balances[owner]);
        require(numTokens <= allowed[owner][msg.sender]);

        balances[owner] -= numTokens;
        allowed[owner][msg.sender] -= numTokens;
```

```
44    }
45
46    function allowance(address owner, address delegate) public view returns (uint) {
47        return allowed[owner][delegate];
48    }
49
50    function transferFrom(address owner, address buyer, uint numTokens) public returns (bool) {
51        require(numTokens <= balances[owner]);
52        require(numTokens <= allowed[owner][msg.sender]);
53
54        balances[owner] -= numTokens;
55        allowed[owner][msg.sender] -= numTokens;
56        balances[buyer] += numTokens;
57        emit Transfer(owner, buyer, numTokens);
58        return true;
59    }
60 }
```

[vm] from: 0x5B3...eddC4 to: NDCoinERC20.(constructor) value: 0 wei data: 0x608...06ea6 logs: 0 hash: 0xbf4...d7c39

METAMASK

● Goerli test network ⌄

< Account 1 / VS

0.0001 VS

→ Send   ⇄ Swap

You have no transactions