RugFreeCoins Audit

Polygon: EverEarn
Smart Contract Security Audit

March 3rd 2023

Contents

Audit details

Audited project
Polygon: EverEarn Token

Contract Address
0xdc128dE2547D2A255f59d8639a15736f0C4f9496

Client contact
EverEarn Team

Blockchain
Polygon

Project website
https://everearn.net/

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn’t say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below – please make sure to read it in full.

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Overview

✅ No mint function found, the owner cannot mint tokens after initial deployment.

✅ The owner can’t set a max transaction limit than 0.1%

✅ The owner can’t pause trading.

✅ The owner can’t set a max wallet limit

✅ The owner can’t claim the contract’s balance of its own token.

❌ The owner can set fees over 25%.

❌ The owner can blacklist wallets.

Background

Rugfreecoins was commissioned by the EverEarn Team to perform an audit of the smart contract.

https://polygonscan.com//address/0xdc128dE2547D2A255f59d8639a15736f0C4f9496

The focus of this audit is to verify that the smart contract is secure, resilient, and working according to the specifications.

The information in this report should be used to understand the risk exposure of the smart contract, project feasibility, and long-term sustainability, and as a guide to improving the smart contract's security posture by remediating the identified issues.

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Tokenomics

15% when buying & selling

- 11% trade distributes among holders as rewards in BUSD.
- 1% trade goes to the liquidity pool
- 1% trade goes to the buyback wallet in MATIC
- 2% trade goes to the marketing wallet in MATIC

Target market and the concept

Target market

- Anyone who’s interested in the Crypto space with long-term investment plans.
- Anyone who’s ready to earn a passive income by holding tokens.
- Anyone who’s interested in trading tokens.
- Anyone who’s ready to staking and receive rewards.
- Anyone who’s interested in taking part of the EverEarn ecosystem.
- Anyone who’s interested in taking part in the future plans of EverEarn Token.
- Anyone who’s interested in making financial transactions with any other party using EverEarn Token as the currency.

Potential to grow with score points

1.	Project efficiency	10/10
2.	Project uniqueness	10/10
3	Information quality	10/10
4	Service quality	10/10
5	System quality	10/10
6	Impact on the community	10/10
7	Impact on the business	10/10
8	Preparing for the future	10/10
9	Smart contract security	10/10
10	Smart contract functionality assessment	10/10
Total Points		**10/10**

Contract details

Token contract details for 3rd of March 2023

Contract name	EverEarn POLY
Contract address	0xdc128dE2547D2A255f59d8639a15736f0C4f9496
Token supply	100,000,000,000
Token ticker	$EARNPOLY
Decimals	18
Token holders	2
Transaction count	2
Buyback wallet	0x7cb3b3b61a8bdd74ef2368fa1068a4d930808d9d
Dividend Tracker	0xce9bb2e22c6b72985c13652f86ee871d7b23df0c
LP Receiver	0x7cb3b3b61a8bdd74ef2368fa1068a4d930808d9d
Marketing wallet	0x7cb3b3b61a8bdd74ef2368fa1068a4d930808d9d
Contract deployer address	0x7cb3b3b61a8bdd74ef2368fa1068a4d930808d9d
Contract's current owner address	0x7cb3b3b61a8bdd74ef2368fa1068a4d930808d9d

Contract code function details

No	Category	Item	Result
1	Coding conventions	BRC20 Token standards	pass
		compile errors	pass
		Compiler version security	pass
		visibility specifiers	pass
		Gas consumption	pass
		SafeMath features	pass
		Fallback usage	pass
		tx.origin usage	pass
		deprecated items	pass
		Redundant code	pass
		Overriding variables	pass
2	Function call audit	Authorization of function call	pass
		Low level function (call/delegate call) security	pass
		Returned value security	pass
		Selfdestruct function security	pass
3	Business security	Access control of owners	
		Business logics	pass
		Business implementations	pass
4	Integer overflow/underflow		pass
5	Reentrancy		pass
6	Exceptional reachable state		pass
7	Transaction ordering dependence		pass
8	Block properties dependence		pass
9	Pseudo random number generator (PRNG)		pass
10	DoS (Denial of Service)		pass
11	Token vesting implementation		pass
12	Fake deposit		pass

13	**Event security**		**pass**

Contract description table

The below table represents the summary of the contracts and methods in the token contract. We scanned the whole contract and listed down all the Interfaces, functions, and implementations with their visibility and mutability.

Contract	**Type**	**Bases**		
L	Function Name	Visibility	Mutability	Modifiers
EARN	**Implementation**	**IERC20, Ownable**		
L		Public ❗	🛑	NO ❗
L		External ❗	💵	NO ❗
L	totalSupply	External ❗		NO ❗
L	name	Public ❗		NO ❗
L	symbol	Public ❗		NO ❗
L	decimals	Public ❗		NO ❗
L	balanceOf	Public ❗		NO ❗
L	getHolderDetails	Public ❗		NO ❗
L	getLastProcessedIndex	Public ❗		NO ❗
L	getNumberOfTokenHolders	Public ❗		NO ❗
L	totalDistributedRewards	Public ❗		NO ❗
L	allowance	External ❗		NO ❗
L	approve	Public ❗	🛑	NO ❗
L	_approve	Internal 🔒	🛑	

L	approveMax	External ❗	🛑	NO ❗
L	transfer	External ❗	🛑	NO ❗
L	transferFrom	External ❗	🛑	NO ❗
L	_transferFrom	Internal 🔒	🛑	
L	takeFee	Internal 🔒	🛑	
L	_basicTransfer	Internal 🔒	🛑	
L	shouldTakeFee	Internal 🔒		
L	shouldDoContractSwap	Internal 🔒		
L	___claimRewards	Public ❗	🛑	NO ❗
L	claimProcess	Public ❗	🛑	NO ❗
L	isRewardExcluded	Public ❗		NO ❗
L	isFeeExcluded	Public ❗		NO ❗
L	doContractSwap	Internal 🔒	🛑	swapping
L	swapTokensForTokens	Private 🔐	🛑	
L	swapAndLiquify	Private 🔐	🛑	
L	swapTokensForEth	Private 🔐	🛑	
L	addLiquidity	Private 🔐	🛑	
L	setIsDividendExempt	External ❗	🛑	onlyOwner
L	setIsFeeExempt	External ❗	🛑	onlyOwner
L	setDoContractSwap	External ❗	🛑	onlyOwner
L	blackListWallets	External ❗	🛑	onlyOwner

L	setDistributionCriteria	External ❗	🛑	onlyOwner
L	setDistributorSettings	External ❗	🛑	onlyOwner
L	changeMarketingWallet	External ❗	🛑	onlyOwner
L	changeBuyBackWallet	External ❗	🛑	onlyOwner
L	changeLPWallet	External ❗	🛑	onlyOwner
L	changeBuyFees	External ❗	🛑	onlyOwner
L	changeSellFees	External ❗	🛑	onlyOwner
L	changeSwapFees	External ❗	🛑	onlyOwner
L	setSellCollDown	External ❗	🛑	onlyOwner
L	changeSellLimit	External ❗	🛑	onlyOwner
L	changeBuyLimit	External ❗	🛑	onlyOwner
L	excludeFromMaxSell	External ❗	🛑	onlyOwner
L	excludeFromMaxBuy	External ❗	🛑	onlyOwner
L	enableTrading	External ❗	🛑	onlyOwner
L	setAuthorizedWallets	External ❗	🛑	onlyOwner
L	rescueEth	External ❗	🛑	onlyOwner
L	purgeBeforeSwitch	Public ❗	🛑	onlyOwner
L	depositRewards	External ❗	🛑	onlyOwner
L	changeGetFeesOnTransfer	External ❗	🛑	onlyOwner
L	switchToken	Public ❗	🛑	onlyOwner
L	changeRouter	External ❗	🛑	onlyOwner

L	changePair	External ❗	🛑	onlyOwner
Idividend Distributor	**Interface**			
L	setDistributionCriteria	External ❗	🛑	NO ❗
L	setShare	External ❗	🛑	NO ❗
L	deposit	External ❗	🛑	NO ❗
L	process	External ❗	🛑	NO ❗
L	purge	External ❗	🛑	NO ❗
Dividend Distributor	**Implementation**	**Idividend Distributor**		
L		Public ❗	🛑	NO ❗
L		External ❗	💵	NO ❗
L	setDistributionCriteria	External ❗	🛑	onlyToken
L	purge	External ❗	🛑	onlyToken
L	setShare	External ❗	🛑	onlyToken
L	deposit	External ❗	🛑	onlyToken
L	process	External ❗	🛑	onlyToken
L	shouldDistribute	Internal 🔒		
L	distributeDividend	Internal 🔒	🛑	
L	claimDividend	External ❗	🛑	NO ❗
L	getUnpaidEarnings	Public ❗		NO ❗

L	getHolderDetails	Public ❗		NO ❗
L	getCumulativeDividends	Internal 🔒		
L	getLastProcessedIndex	External ❗		NO ❗
L	getNumberOfTokenHolders	External ❗		NO ❗
L	getShareHoldersList	External ❗		NO ❗
L	totalDistributedRewards	External ❗		NO ❗
L	addShareholder	Internal 🔒	🛑	
L	removeShareholder	Internal 🔒	🛑	
Ownable	**Implementation**	**Context**		
L		Public ❗	🛑	NO ❗
L	owner	Public ❗		NO ❗
L	_checkOwner	Internal 🔒		
L	renounceOwnership	Public ❗	🛑	onlyOwner
L	transferOwnership	Public ❗	🛑	onlyOwner
L	_transferOwnership	Internal 🔒	🛑	
IUniswapV2 Router02	**Interface**	**Iuniswap V2 Router01**		
L	removeLiquidityETHSupportingFeeOnTr ansferTokens	External ❗	🛑	NO ❗
L	removeLiquidityETHWithPermitSupporti ngFeeOnTransferTokens	External ❗	🛑	NO ❗
L	swapExactTokensForTokensSupporting FeeOnTransferTokens	External ❗	🛑	NO ❗

L	swapExactETHForTokensSupportingFeeOnTransferTokens	External ❗	💵	NO ❗
L	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
IUniswapV2 Factory	**Interface**			
L	feeTo	External ❗		NO ❗
L	feeToSetter	External ❗		NO ❗
L	getPair	External ❗		NO ❗
L	allPairs	External ❗		NO ❗
L	allPairsLength	External ❗		NO ❗
L	createPair	External ❗	🛑	NO ❗
L	setFeeTo	External ❗	🛑	NO ❗
L	setFeeToSetter	External ❗	🛑	NO ❗
IERC20	**Interface**			
L	totalSupply	External ❗		NO ❗
L	balanceOf	External ❗		NO ❗
L	transfer	External ❗	🛑	NO ❗
L	allowance	External ❗		NO ❗
L	approve	External ❗	🛑	NO ❗
L	transferFrom	External ❗	🛑	NO ❗
Context	**Implementation**			

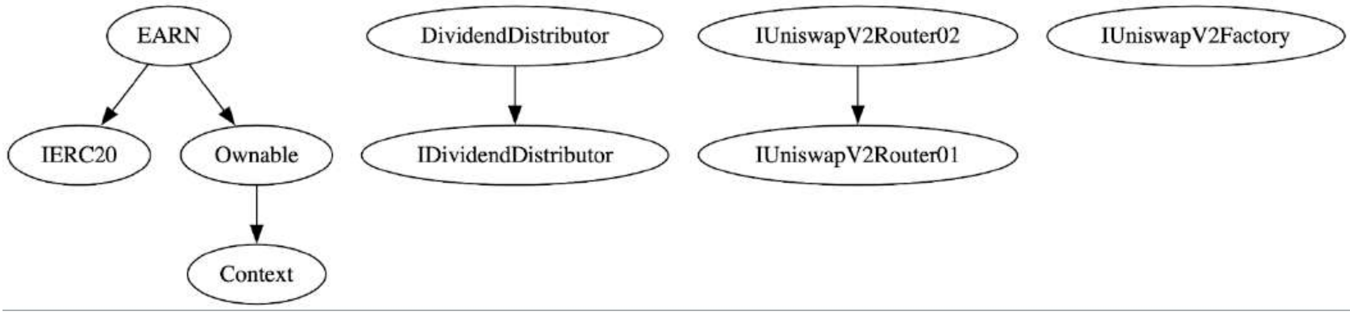
L	_msgSender	Internal 🔒		
L	_msgData	Internal 🔒		
IUniswapV2 Router01	**Interface**			
L	factory	External ❗		NO ❗
L	WETH	External ❗		NO ❗
L	addLiquidity	External ❗	🛑	NO ❗
L	addLiquidityETH	External ❗	💵	NO ❗
L	removeLiquidity	External ❗	🛑	NO ❗
L	removeLiquidityETH	External ❗	🛑	NO ❗
L	removeLiquidityWithPermit	External ❗	🛑	NO ❗
L	removeLiquidityETHWithPermit	External ❗	🛑	NO ❗
L	swapExactTokensForTokens	External ❗	🛑	NO ❗
L	swapTokensForExactTokens	External ❗	🛑	NO ❗
L	swapExactETHForTokens	External ❗	💵	NO ❗
L	swapTokensForExactETH	External ❗	🛑	NO ❗
L	swapExactTokensForETH	External ❗	🛑	NO ❗
L	swapETHForExactTokens	External ❗	💵	NO ❗
L	quote	External ❗		NO ❗
L	getAmountOut	External ❗		NO ❗
L	getAmountIn	External ❗		NO ❗

L	getAmountsOut	External ❗		NO ❗
L	getAmountsIn	External ❗		NO ❗

Legend

Symbol	**Meaning**
🛑	Function can modify state
💵	Function is payable

Inheritance Hierarchy



Security issue checking status

- **High severity issues**
  No High severity issues found

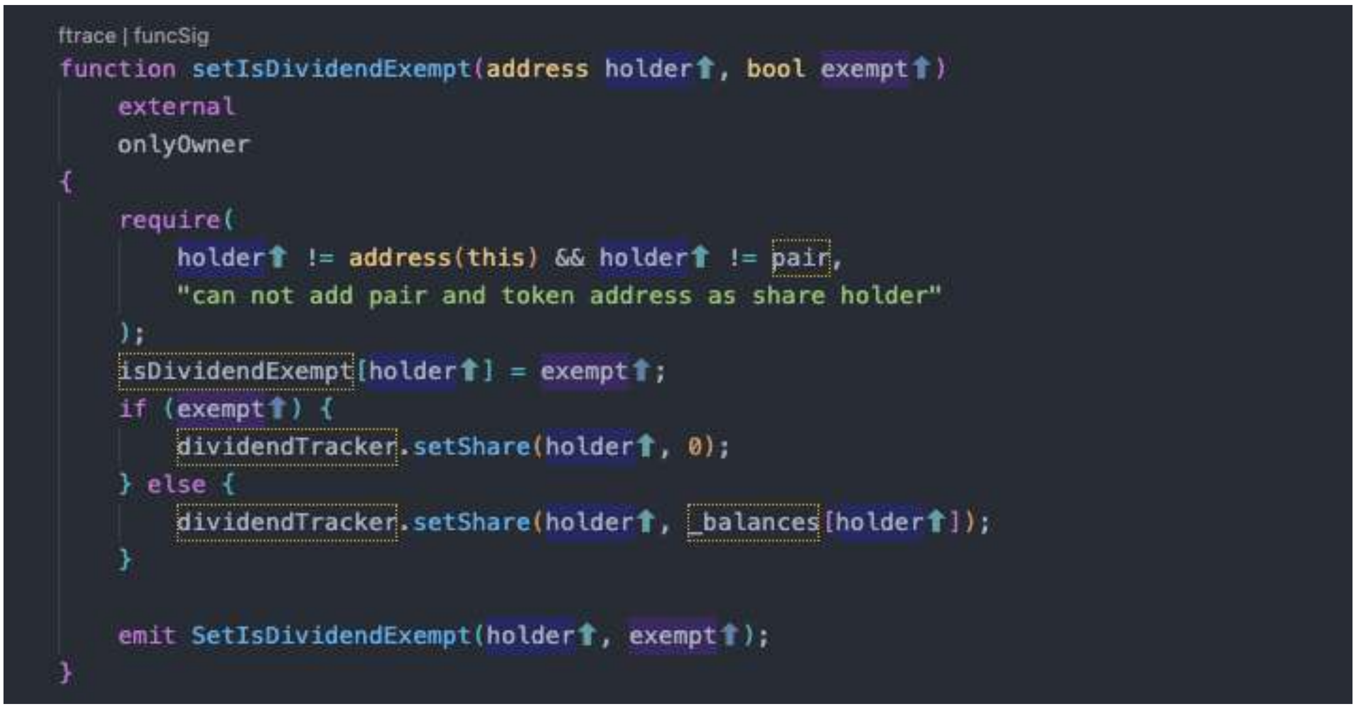
- **Medium severity issues**
  No medium severity issues found

- **Low severity issues**
  No low severity issues found

- **Centralization Risk**
  No Centralization Risk found

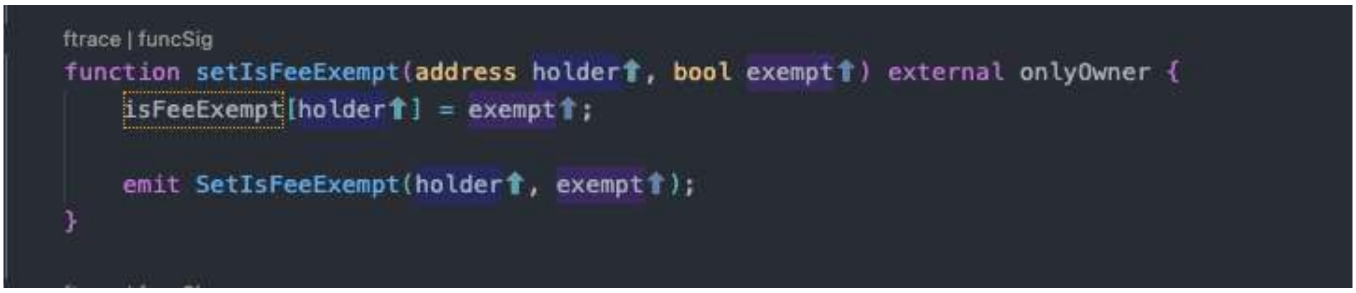
Owner privileges

❖ The owner can include/exclude wallets from rewards



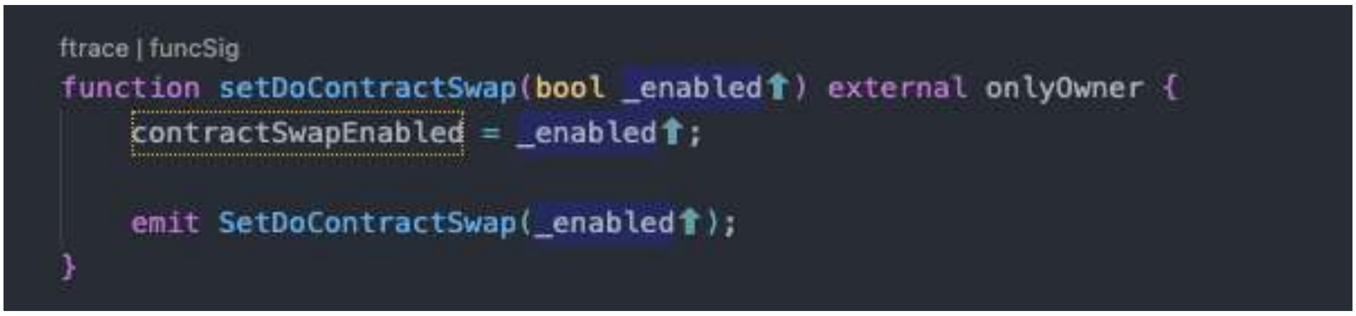
```
ftrace | funcSig
function setIsDividendExempt(address holder, bool exempt)
    external
    onlyOwner
{
    require(
        holder != address(this) && holder != pair,
        "can not add pair and token address as share holder"
    );
    isDividendExempt[holder] = exempt;
    if (exempt) {
        dividendTracker.setShare(holder, 0);
    } else {
        dividendTracker.setShare(holder, _balances[holder]);
    }

    emit SetIsDividendExempt(holder, exempt);
}
```

❖ The owner can include/exclude wallets from fee



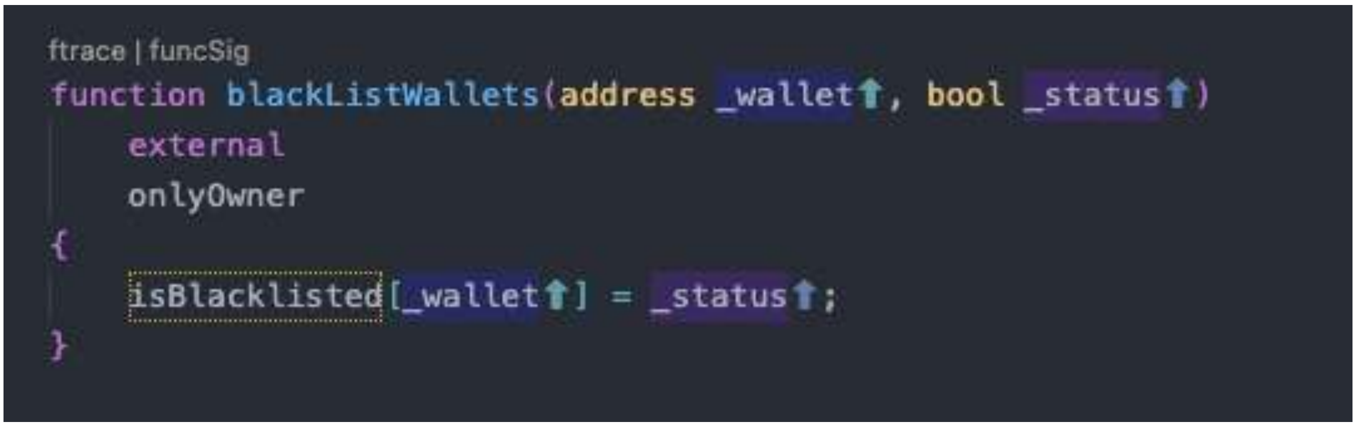
```
ftrace | funcSig
function setIsFeeExempt(address holder, bool exempt) external onlyOwner {
    isFeeExempt[holder] = exempt;

    emit SetIsFeeExempt(holder, exempt);
}
```

❖ The owner can enable/disable swapping



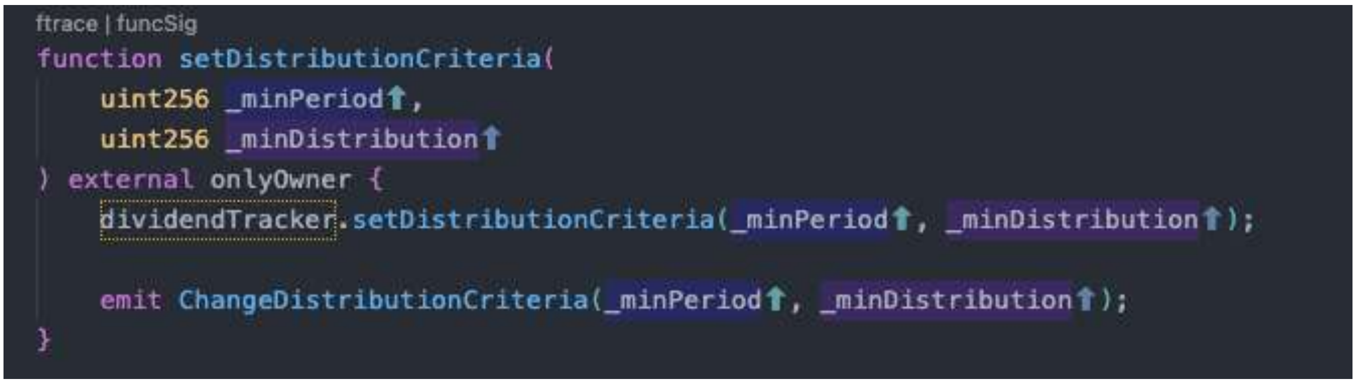
```
ftrace | funcSig
function setDoContractSwap(bool _enabled) external onlyOwner {
    contractSwapEnabled = _enabled;

    emit SetDoContractSwap(_enabled);
}
```

❖ The owner can add/remove wallets from the blacklist



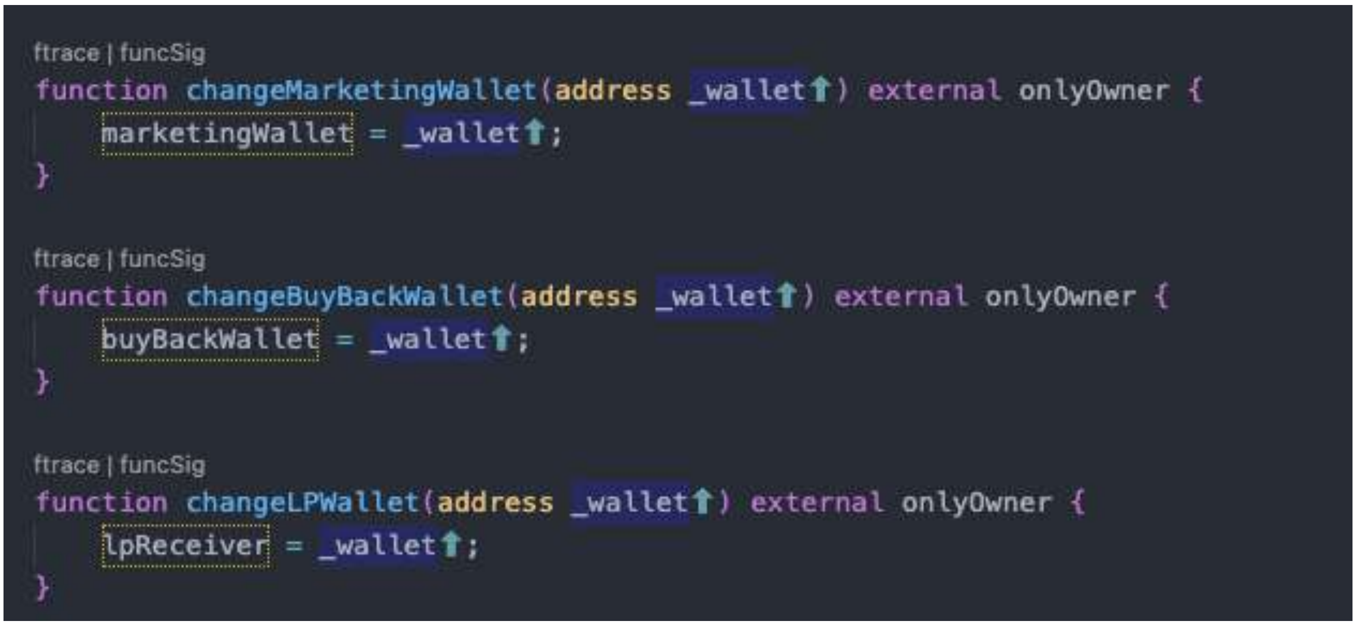
```
ftrace | funcSig
function blackListWallets(address _wallet, bool _status)
    external
    onlyOwner
{
    isBlacklisted[_wallet] = _status;
}
```

❖ The owner can change distribution criteria in reward tracker



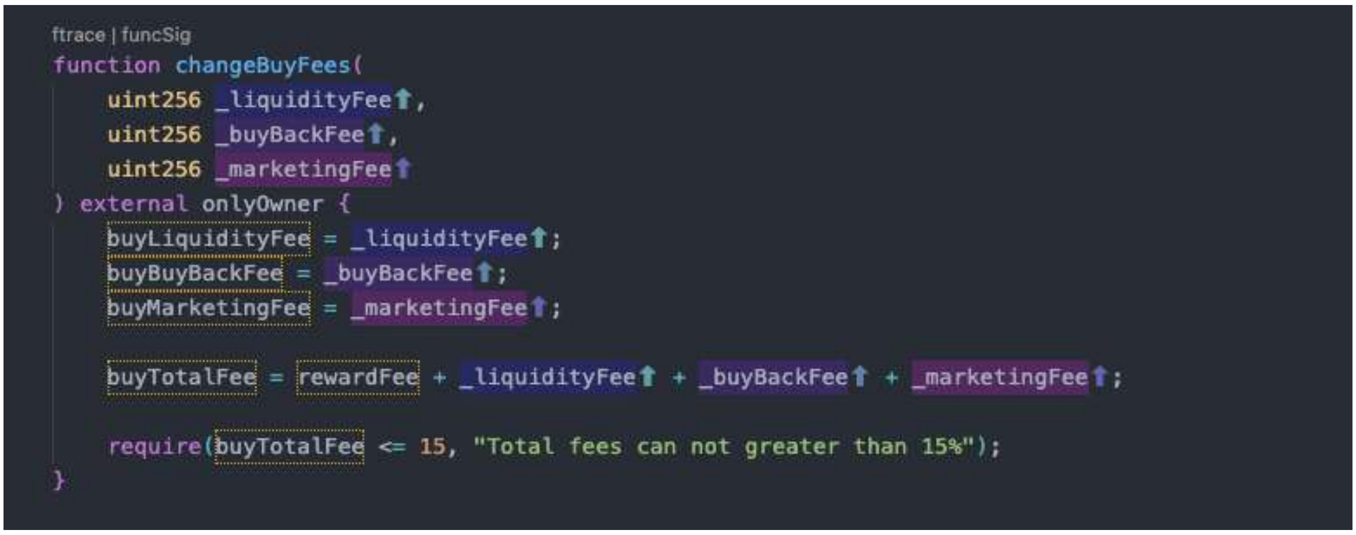
```
ftrace | funcSig
function setDistributionCriteria(
    uint256 _minPeriod,
    uint256 _minDistribution
) external onlyOwner {
    dividendTracker.setDistributionCriteria(_minPeriod, _minDistribution);

    emit ChangeDistributionCriteria(_minPeriod, _minDistribution);
}
```

❖ The owner can change all fees receiving wallets



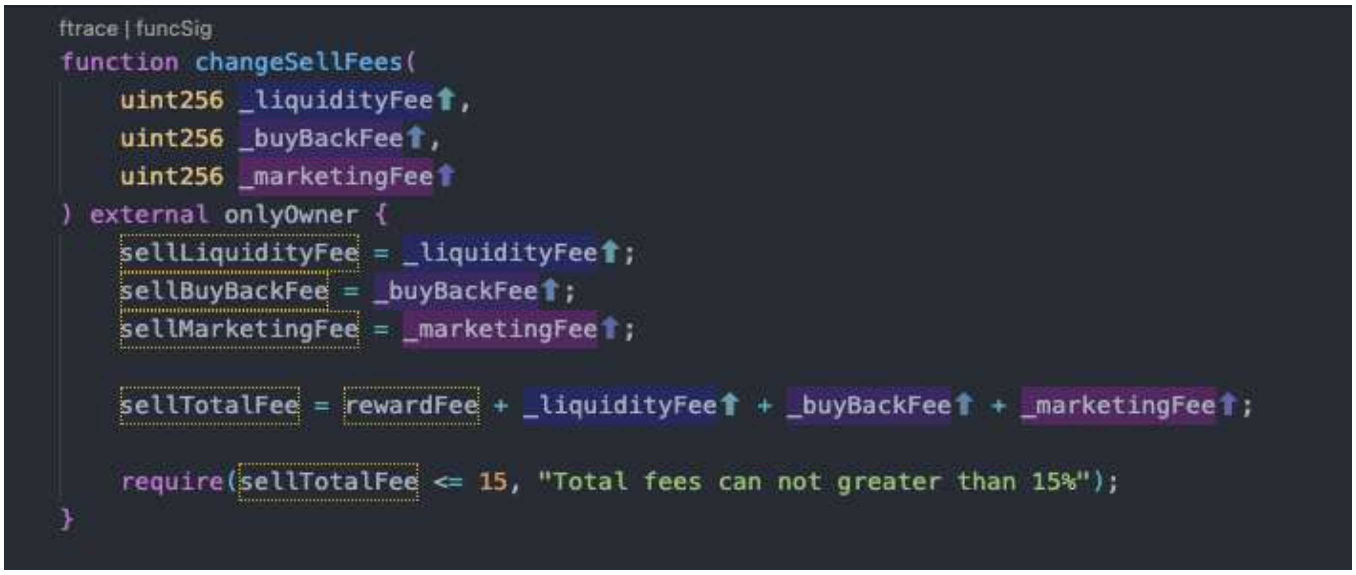
```
ftrace | funcSig
function changeMarketingWallet(address _wallet) external onlyOwner {
    marketingWallet = _wallet;
}

ftrace | funcSig
function changeBuyBackWallet(address _wallet) external onlyOwner {
    buyBackWallet = _wallet;
}

ftrace | funcSig
function changeLPWallet(address _wallet) external onlyOwner {
    lpReceiver = _wallet;
}
```

❖ The owner can change all buy fees excluding reward fee total buy fee maximum up to 15%



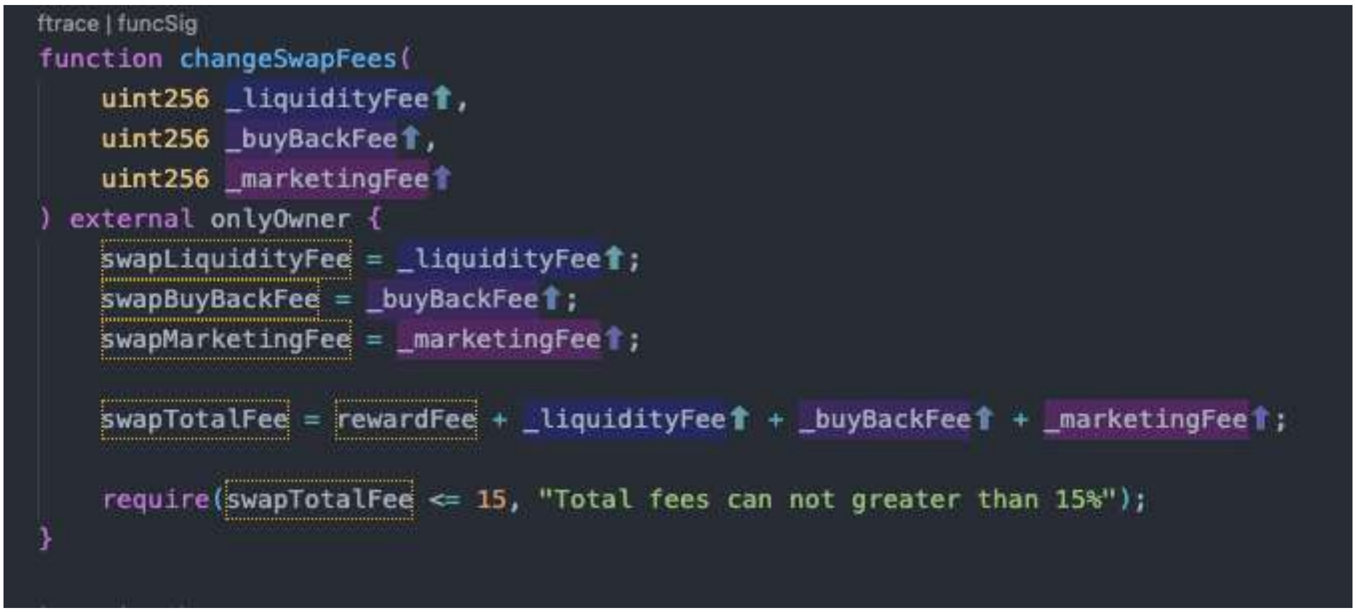
```
ftrace | funcSig
function changeBuyFees(
    uint256 _liquidityFee,
    uint256 _buyBackFee,
    uint256 _marketingFee
) external onlyOwner {
    buyLiquidityFee = _liquidityFee;
    buyBuyBackFee = _buyBackFee;
    buyMarketingFee = _marketingFee;

    buyTotalFee = rewardFee + _liquidityFee + _buyBackFee + _marketingFee;

    require(buyTotalFee <= 15, "Total fees can not greater than 15%");
}
```

❖ The owner can change all sell fees excluding reward fee total sell fee maximum up to 15%



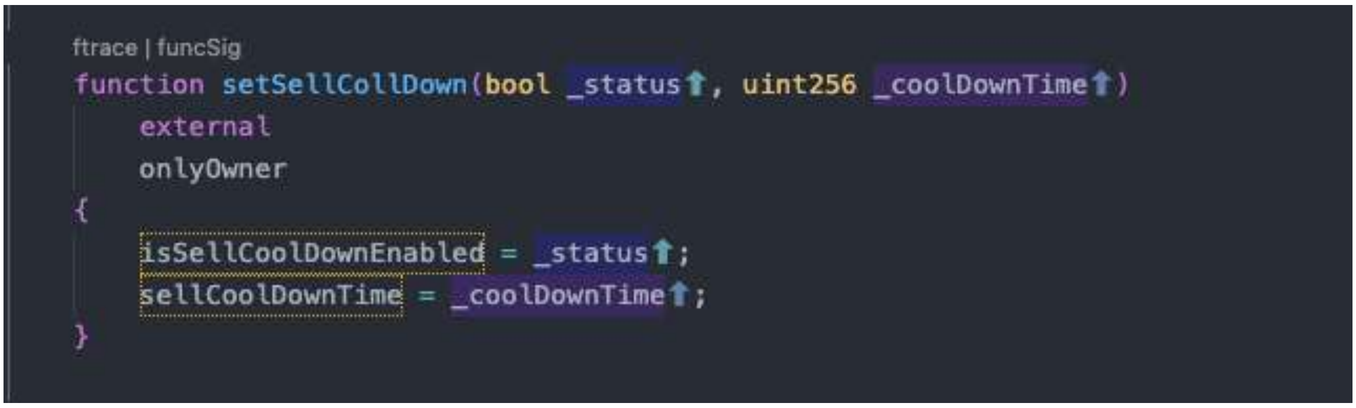
```
ftrace | funcSig
function changeSellFees(
    uint256 _liquidityFee,
    uint256 _buyBackFee,
    uint256 _marketingFee
) external onlyOwner {
    sellLiquidityFee = _liquidityFee;
    sellBuyBackFee = _buyBackFee;
    sellMarketingFee = _marketingFee;

    sellTotalFee = rewardFee + _liquidityFee + _buyBackFee + _marketingFee;

    require(sellTotalFee <= 15, "Total fees can not greater than 15%");
}
```

❖ The owner can change swap fees



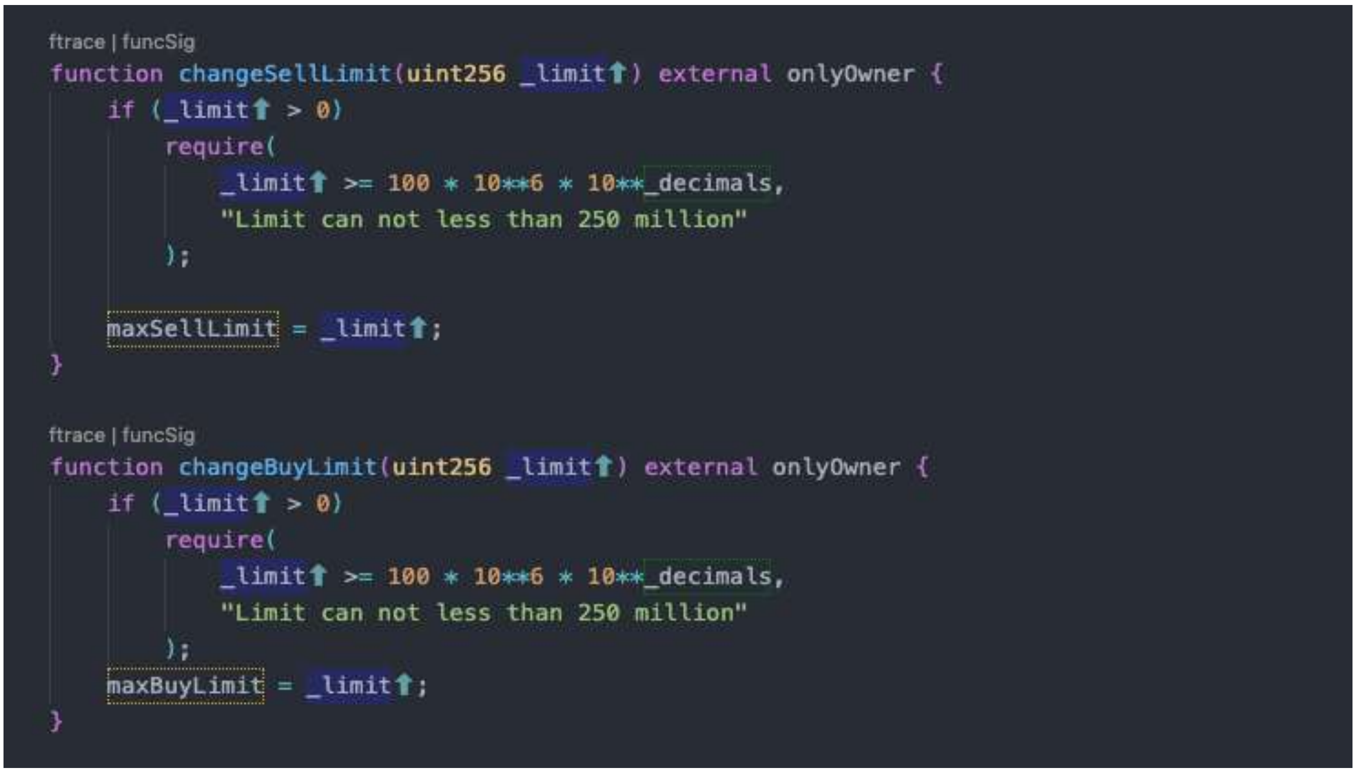
```
ftrace | funcSig
function changeSwapFees(
    uint256 _liquidityFee,
    uint256 _buyBackFee,
    uint256 _marketingFee
) external onlyOwner {
    swapLiquidityFee = _liquidityFee;
    swapBuyBackFee = _buyBackFee;
    swapMarketingFee = _marketingFee;

    swapTotalFee = rewardFee + _liquidityFee + _buyBackFee + _marketingFee;

    require(swapTotalFee <= 15, "Total fees can not greater than 15%");
}
```

❖ The owner can enable/disable contract sell cool down and can change cool down time



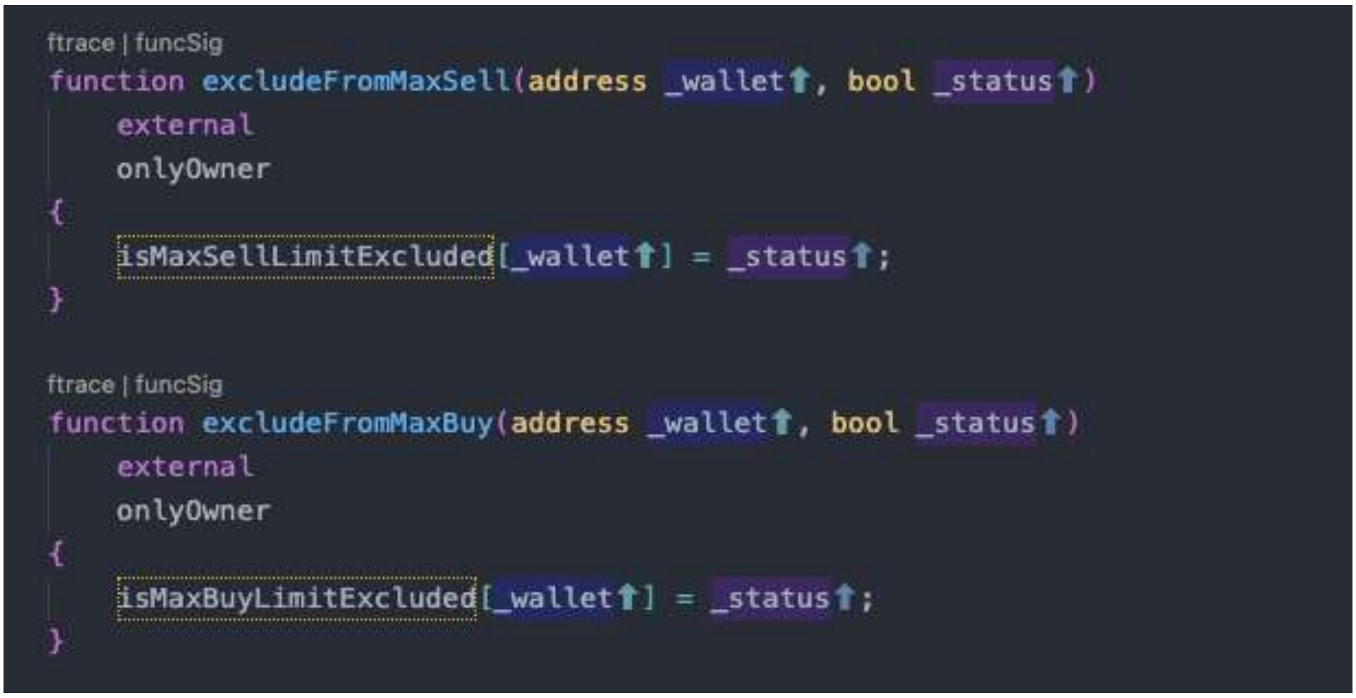
```
ftrace | funcSig
function setSellCollDown(bool _status, uint256 _coolDownTime)
    external
    onlyOwner
{
    isSellCoolDownEnabled = _status;
    sellCoolDownTime = _coolDownTime;
}
```

❖ The owner can change all buy and sell limit minimum up to 0.1%



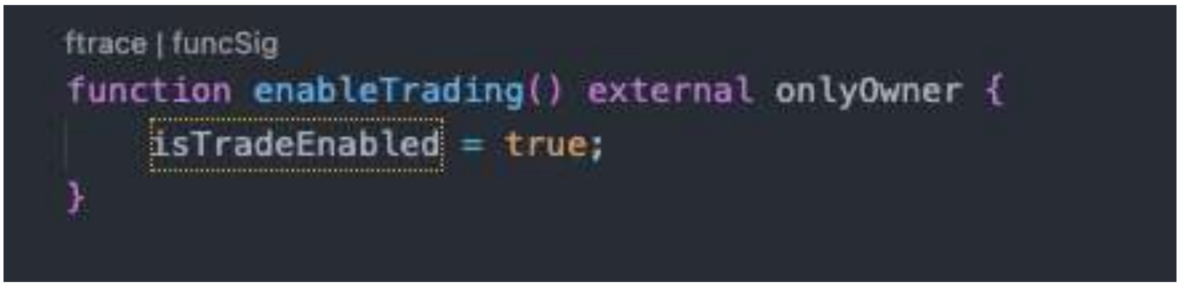
```
ftrace | funcSig
function changeSellLimit(uint256 _limit) external onlyOwner {
    if (_limit > 0)
        require(
            _limit >= 100 * 10**6 * 10**_decimals,
            "Limit can not less than 250 million"
        );

    maxSellLimit = _limit;
}

ftrace | funcSig
function changeBuyLimit(uint256 _limit) external onlyOwner {
    if (_limit > 0)
        require(
            _limit >= 100 * 10**6 * 10**_decimals,
            "Limit can not less than 250 million"
        );
    maxBuyLimit = _limit;
}
```

❖ The owner can include/exclude wallets from max sell and max buy



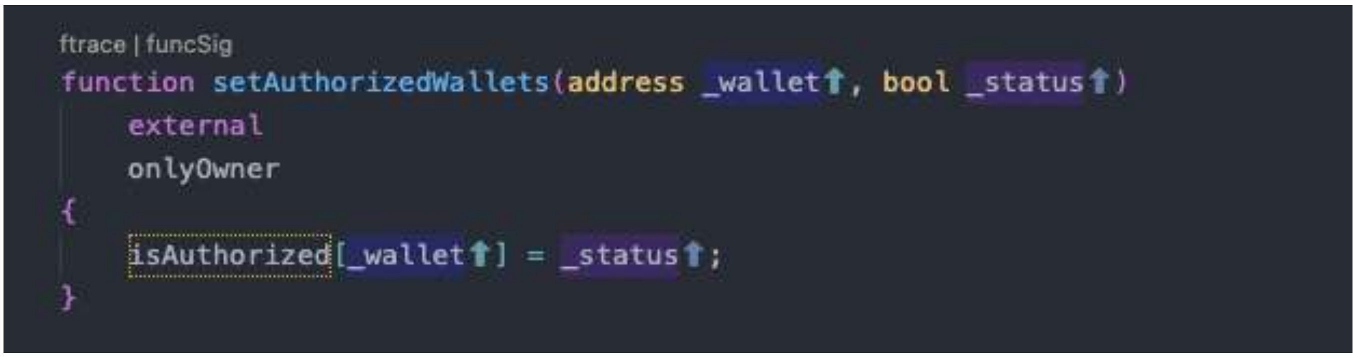
```
ftrace | funcSig
function excludeFromMaxSell(address _wallet, bool _status)
    external
    onlyOwner
{
    isMaxSellLimitExcluded[_wallet] = _status;
}

ftrace | funcSig
function excludeFromMaxBuy(address _wallet, bool _status)
    external
    onlyOwner
{
    isMaxBuyLimitExcluded[_wallet] = _status;
}
```

❖ The owner can enable trading, once enabled can not disable again



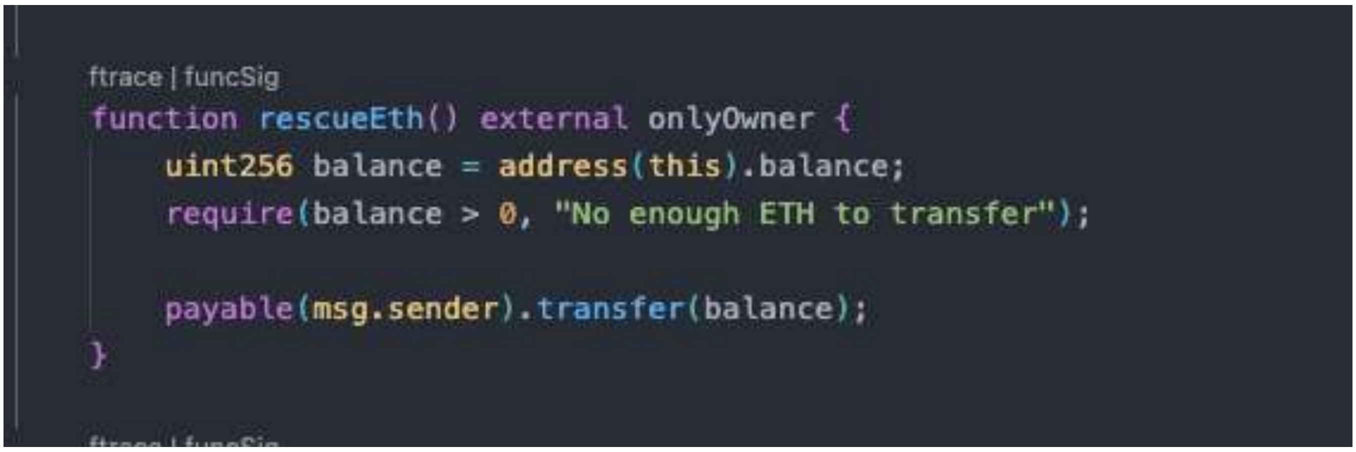
```
ftrace | funcSig
function enableTrading() external onlyOwner {
    isTradeEnabled = true;
}
```

❖ The owner can set authorized wallet, authorized wallets can do transactions before enable trading



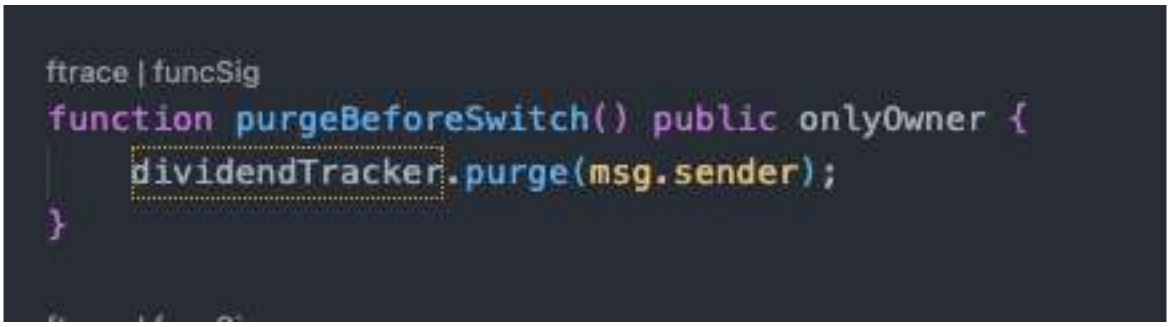
```
ftrace | funcSig
function setAuthorizedWallets(address _wallet, bool _status)
    external
    onlyOwner
{
    isAuthorized[_wallet] = _status;
}
```

❖ The owner can get matic from the contract



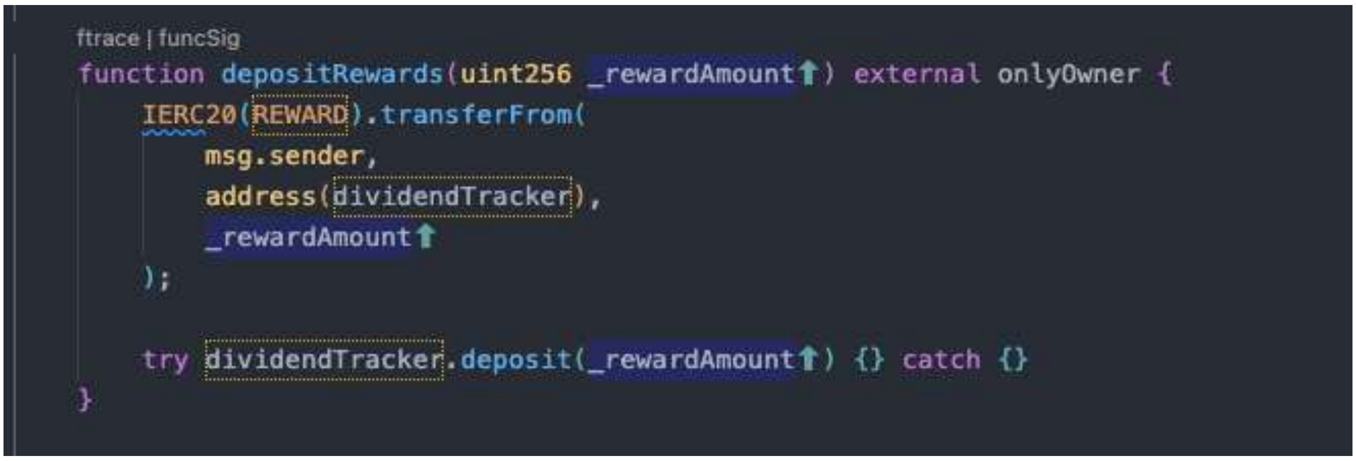
```
ftrace | funcSig
function rescueEth() external onlyOwner {
    uint256 balance = address(this).balance;
    require(balance > 0, "No enough ETH to transfer");

    payable(msg.sender).transfer(balance);
}
```

❖ The owner can get all tokens in the reward contract



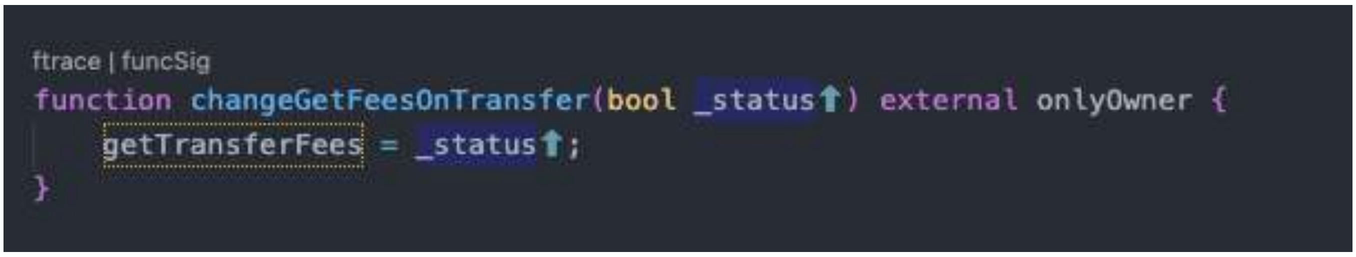
```
ftrace | funcSig
function purgeBeforeSwitch() public onlyOwner {
    dividendTracker.purge(msg.sender);
}
```

❖ The owner can manually deposit reward tokens to reward tracker



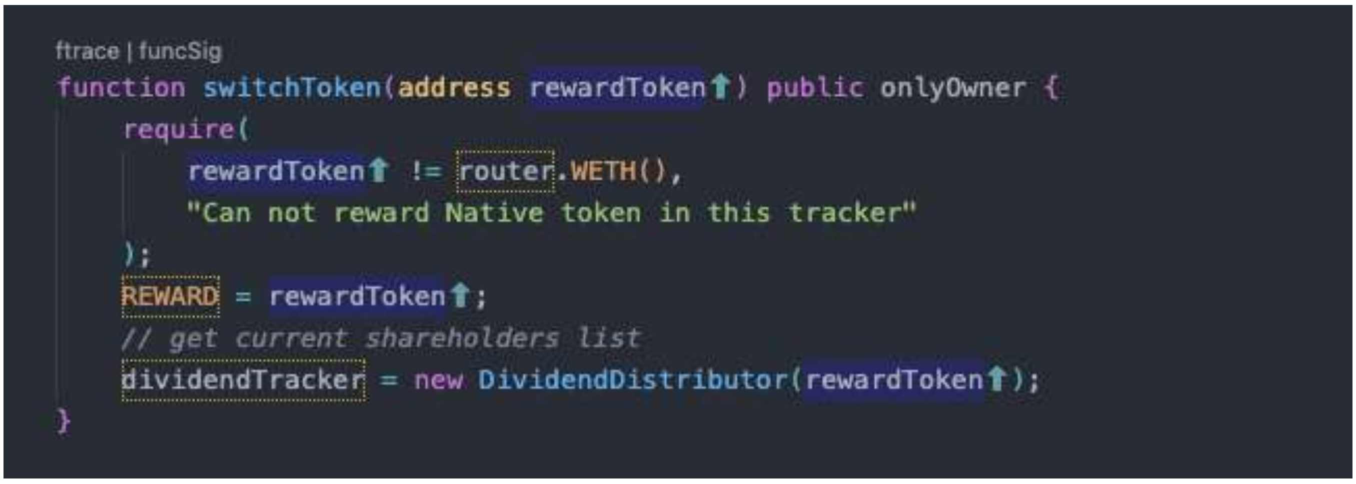
```
ftrace | funcSig
function depositRewards(uint256 _rewardAmount) external onlyOwner {
    IERC20(REWARD).transferFrom(
        msg.sender,
        address(dividendTracker),
        _rewardAmount
    );

    try dividendTracker.deposit(_rewardAmount) {} catch {}
}
```

❖ The owner can enable/disable fees on wallet to wallet transaction



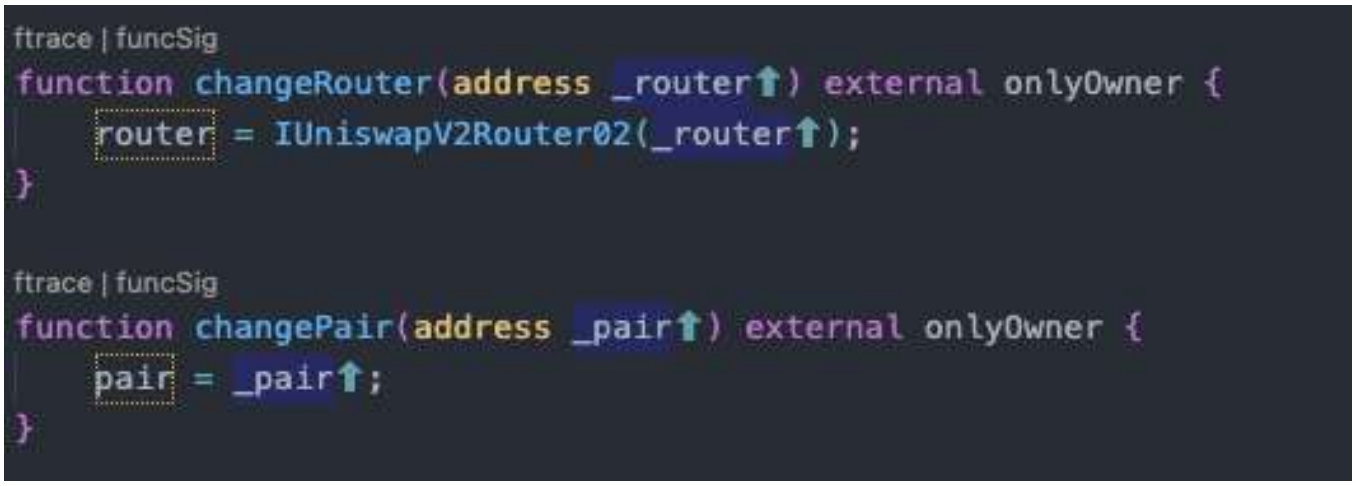
```
ftrace | funcSig
function changeGetFeesOnTransfer(bool _status) external onlyOwner {
    getTransferFees = _status;
}
```

❖ The owner can change reward token



```
ftrace | funcSig
function switchToken(address rewardToken) public onlyOwner {
    require(
        rewardToken != router.WETH(),
        "Can not reward Native token in this tracker"
    );
    REWARD = rewardToken;
    // get current shareholders list
    dividendTracker = new DividendDistributor(rewardToken);
}
```

- The owner can change router and pair address



```
ftrace | funcSig
function changeRouter(address _router) external onlyOwner {
    router = IUniswapV2Router02(_router);
}

ftrace | funcSig
function changePair(address _pair) external onlyOwner {
    pair = _pair;
}
```

Audit conclusion

RugFreeCoins team has performed in-depth testings, line-by-line manual code review, and automated audit of the smart contract. The smart contract was analyzed mainly for common smart contract vulnerabilities, exploits, manipulations, and hacks. According to the smart contract audit.

Smart contract functional Status: **PASS**

Number of risk issues: **02**

Solidity code functional issue level: **PASS**

Number of owner privileges: **20**

Centralization risk correlated to the active owner: **HIGH**

Smart contract active ownership: **ACTIVE**