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AUDIT COMPANY

Smart Contract Security Audit

TechRate

June, 2021

Audit Details

Audited project

JEDSTAR

Deployer address

0xbd9698432b0389e6c62c537bdb766c22f8ebf0ee

Client contacts:

JEDSTAR team

Blockchain

Binance Smart Chain

Project website:

Not provided by JEDSTAR team

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 below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by JEDSTAR to perform an audit of smart contracts:
https://bscscan.com/address/0x058a7af19bdb63411d0a84e79e3312610d7fa90c#code

The purpose of the audit was to achieve the following:

- **Ensure that the smart contract functions as intended.**
- **Identify potential security issues with the smart contract.**

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Contracts Details

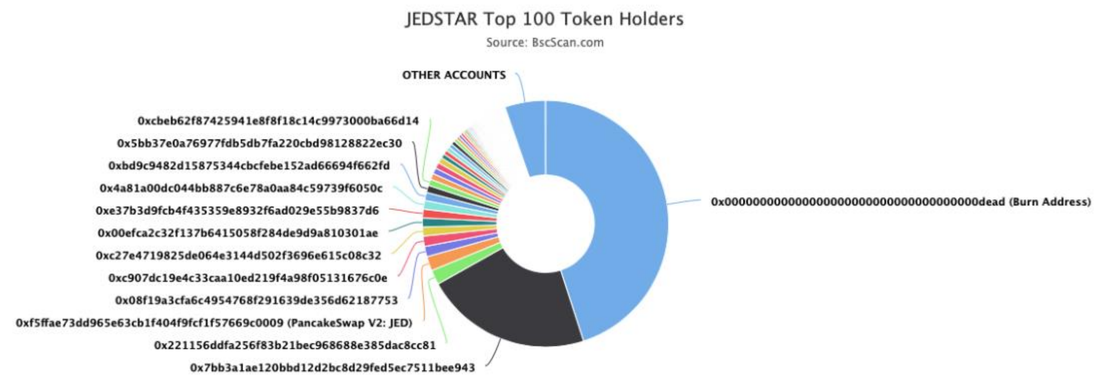
Token contract details for 30.08.2021

Contract name	JEDSTAR
Contract address	0x058a7Af19BdB63411d0a84e79E3312610D7fa90c
Total supply	100,000,000
Token ticker	JED
Decimals	9
Token holders	594
Transactions count	2,240
Top 100 holders dominance	94.65%
Liquidity fee	0
Tax fee	6
Total fees	3776203004968381
Uniswap V2 pair	0x7d72540f81034a847d821ec34c389c744b14ff57
Contract deployer address	0xbd9698432b0389e6c62c537bdb766c22f8ebf0ee
Contract's current owner address	0xbd9698432b0389e6c62c537bdb766c22f8ebf0ee

JEDSTAR Token Distribution

The top 100 holders collectively own 94.65% (94,654,712.35 Tokens) of JEDSTAR

Token Total Supply: 100,000,000.00 Token | Total Token Holders: 594

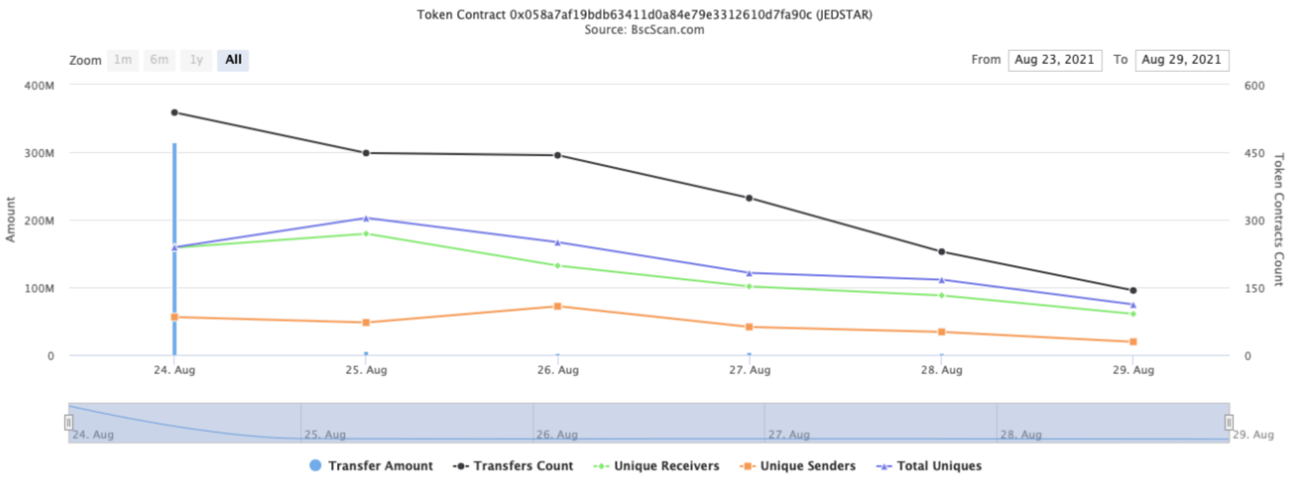


(A total of 94,654,712.35 tokens held by the top 100 accounts from the total supply of 100,000,000.00 token)

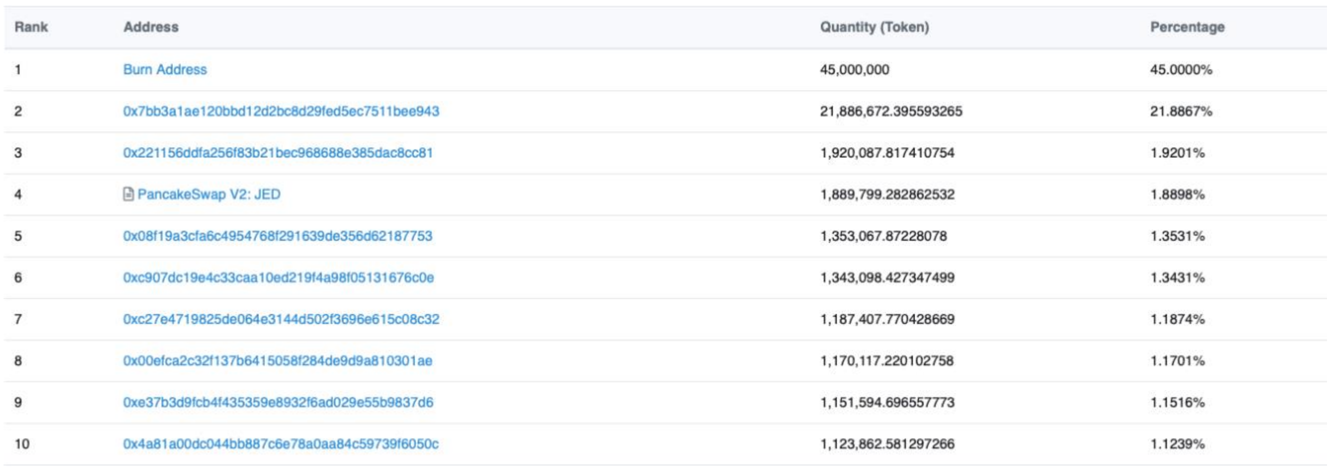
JEDSTAR Contract Interaction Details

Time Series: Token Contract Overview

Tue 24, Aug 2021 - Sun 29, Aug 2021



JEDSTAR Top 10 Token Holders



Rank	Address	Quantity (Token)	Percentage
1	Burn Address	45,000,000	45.0000%
2	0x7bb3a1ae120bbd12d2bc8d29fed5ec7511bee943	21,886,672.395593265	21.8867%
3	0x221156ddfa256f83b21bec968688e385dac8cc81	1,920,087.817410754	1.9201%
4	PancakeSwap V2: JED	1,889,799.282862532	1.8898%
5	0x08f19a3cfa6c4954768f291639de356d62187753	1,353,067.87228078	1.3531%
6	0xc907dc19e4c33caa10ed219f4a98f05131676c0e	1,343,098.427347499	1.3431%
7	0xc27e4719825de064e3144d502f3696e615c08c32	1,187,407.770428669	1.1874%
8	0x00efca2c32f137b6415058f284de9d9a810301ae	1,170,117.220102758	1.1701%
9	0xe37b3d9fcb4f435359e8932f6ad029e55b9837d6	1,151,594.696557773	1.1516%
10	0x4a81a00dc044bb887c6e78a0aa84c59739f6050c	1,123,862.581297266	1.1239%

Contract functions details

+ [Int] IERC20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #
+ [Lib] SafeMath
  - [Int] tryAdd
  - [Int] trySub
  - [Int] tryMul
  - [Int] tryDiv
  - [Int] tryMod
  - [Int] add
  - [Int] sub
  - [Int] mul
  - [Int] div
  - [Int] mod
  - [Int] sub
  - [Int] div
  - [Int] mod
+ Context
  - [Int] _msgSender
  - [Int] _msgData
+ [Lib] Address
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Int] functionStaticCall
  - [Int] functionStaticCall
  - [Int] functionDelegateCall #
  - [Int] functionDelegateCall #
  - [Prv] _verifyCallResult
+ Ownable (Context)
  - [Pub] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
+ [Int] IUniswapV2Factory
  - [Ext] feeTo
  - [Ext] feeToSetter
  - [Ext] getPair
  - [Ext] allPairs
  - [Ext] allPairsLength
  - [Ext] createPair #
  - [Ext] setFeeTo #

  - [Ext] setFeeToSetter #
+ [Int] IUniswapV2Pair
  - [Ext] name
  - [Ext] symbol
  - [Ext] decimals
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transfer #
  - [Ext] transferFrom #
  - [Ext] DOMAIN_SEPARATOR
  - [Ext] PERMIT_TYPEHASH
  - [Ext] nonces
  - [Ext] permit #
  - [Ext] MINIMUM_LIQUIDITY
  - [Ext] factory
  - [Ext] token0
  - [Ext] token1
  - [Ext] getReserves
  - [Ext] price0CumulativeLast
  - [Ext] price1CumulativeLast
  - [Ext] kLast
  - [Ext] mint #
  - [Ext] burn #
  - [Ext] swap #
  - [Ext] skim #
  - [Ext] sync #
  - [Ext] initialize #
+ [Int] IUniswapV2Router01
  - [Ext] factory
  - [Ext] WETH
  - [Ext] addLiquidity #
  - [Ext] addLiquidityETH ($)
  - [Ext] removeLiquidity #
  - [Ext] removeLiquidityETH #
  - [Ext] removeLiquidityWithPermit #
  - [Ext] removeLiquidityETHWithPermit #
  - [Ext] swapExactTokensForTokens #
  - [Ext] swapTokensForExactTokens #
  - [Ext] swapExactETHForTokens ($)
  - [Ext] swapTokensForExactETH #
  - [Ext] swapExactTokensForETH #
  - [Ext] swapETHForExactTokens ($)
  - [Ext] quote
  - [Ext] getAmountOut
  - [Ext] getAmountIn
  - [Ext] getAmountsOut
  - [Ext] getAmountsIn
+ [Int] IUniswapV2Router02 (IUniswapV2Router01)
  - [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
  - [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
  - [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
  - [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens ($)
  - [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

```
+ JedStarToker (Context, IERC20, Ownable)
  - [Pub] <Constructor> #
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #
  - [Pub] decreaseAllowance #
  - [Pub] isExcludedFromReward
  - [Pub] totalFees
  - [Pub] deliver #
  - [Pub] reflectionFromToken
  - [Pub] tokenFromReflection
  - [Pub] excludeFromReward #
    - modifiers: onlyOwner
  - [Ext] includeInReward #
    - modifiers: onlyOwner
  - [Prv] _transferBothExcluded #
  - [Pub] excludeFromFee #
    - modifiers: onlyOwner
  - [Pub] includeInFee #
    - modifiers: onlyOwner
  - [Ext] setTaxFeePercent #
    - modifiers: onlyOwner
  - [Ext] setBurnFeePercent #
    - modifiers: onlyOwner
  - [Ext] setLiquidityFeePercent #
    - modifiers: onlyOwner
  - [Pub] recoverBEP20 #
    - modifiers: onlyOwner
  - [Pub] eDraw ($)
    - modifiers: onlyOwner
  - [Ext] setMaxTxPercent #
    - modifiers: onlyOwner
  - [Pub] setSwapAndLiquifyEnabled #
    - modifiers: onlyOwner
  - [Ext] <Fallback> ($)
  - [Prv] _reflectFee #
  - [Prv] _getValues
  - [Prv] _getTValues
  - [Prv] _getRValues
  - [Prv] _getRate
  - [Prv] _getCurrentSupply
  - [Prv] _takeLiquidity #
  - [Prv] _takeCharity #
  - [Prv] calculateTaxFee
  - [Prv] calculateCharityFee
  - [Prv] calculateLiquidityFee
  - [Prv] removeAllFee #
  - [Prv] restoreAllFee #
```

- [Pub] isExcludedFromFee
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] swapAndLiquify #
  - modifiers: lockTheSwap
- [Prv] swapTokensForEth #
- [Prv] addLiquidity #
- [Prv] _tokenTransfer #
- [Prv] _transferStandard #
- [Prv] _transferToExcluded #
- [Prv] _transferFromExcluded #

($) = payable function

# = non-constant function

Issues Checking Status

	Issue description	Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Low issues
9.	DoS with block gas limit.	Passed
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Passed
18.	Design Logic.	Passed
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

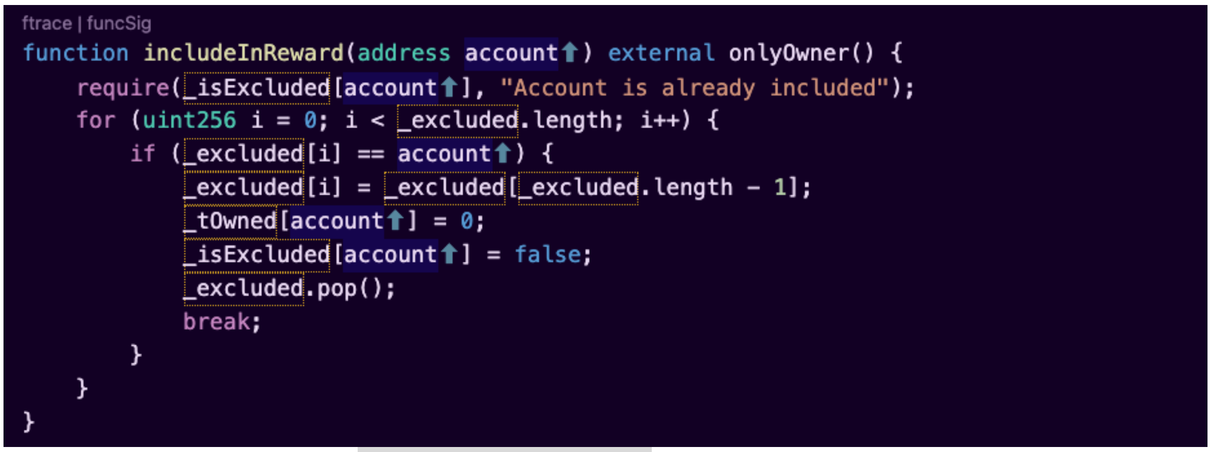
No medium severity issues found.

Low Severity Issues

1. Out of gas

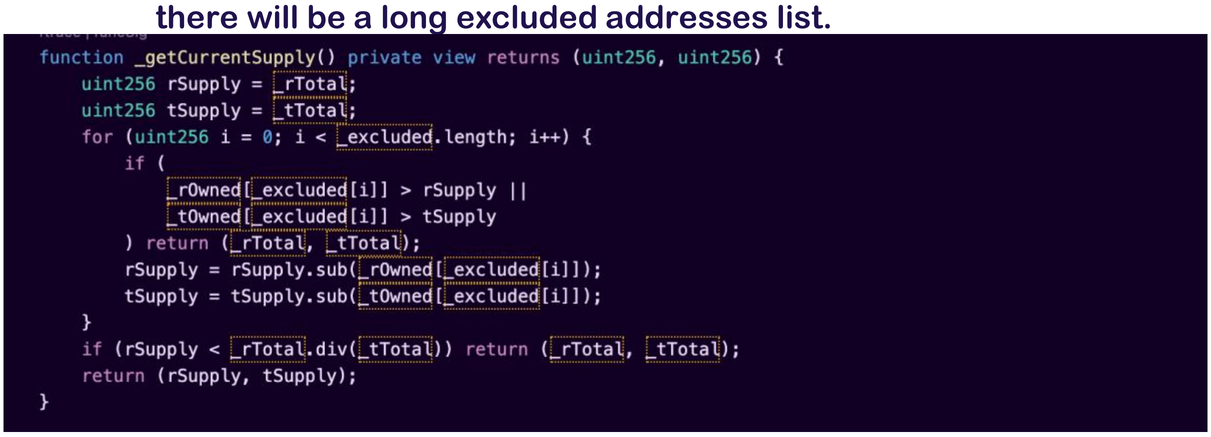
Issue:

- The function includeInReward() uses the loop to find and remove addresses from the _excluded list. Function will be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list.



```
function includeInReward(address account) external onlyOwner() {
    require(_isExcluded[account], "Account is already included");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
            _tOwned[account] = 0;
            _isExcluded[account] = false;
            _excluded.pop();
            break;
        }
    }
}
```

- The function _getCurrentSupply also uses the loop for evaluating total supply. It also could be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list.



```
function _getCurrentSupply() private view returns (uint256, uint256) {
    uint256 rSupply = _rTotal;
    uint256 tSupply = _tTotal;
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (
            _rOwned[_excluded[i]] > rSupply ||
            _tOwned[_excluded[i]] > tSupply
        ) return (_rTotal, _tTotal);
        rSupply = rSupply.sub(_rOwned[_excluded[i]]);
        tSupply = tSupply.sub(_tOwned[_excluded[i]]);
    }
    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
    return (rSupply, tSupply);
}
```

Recommendation:

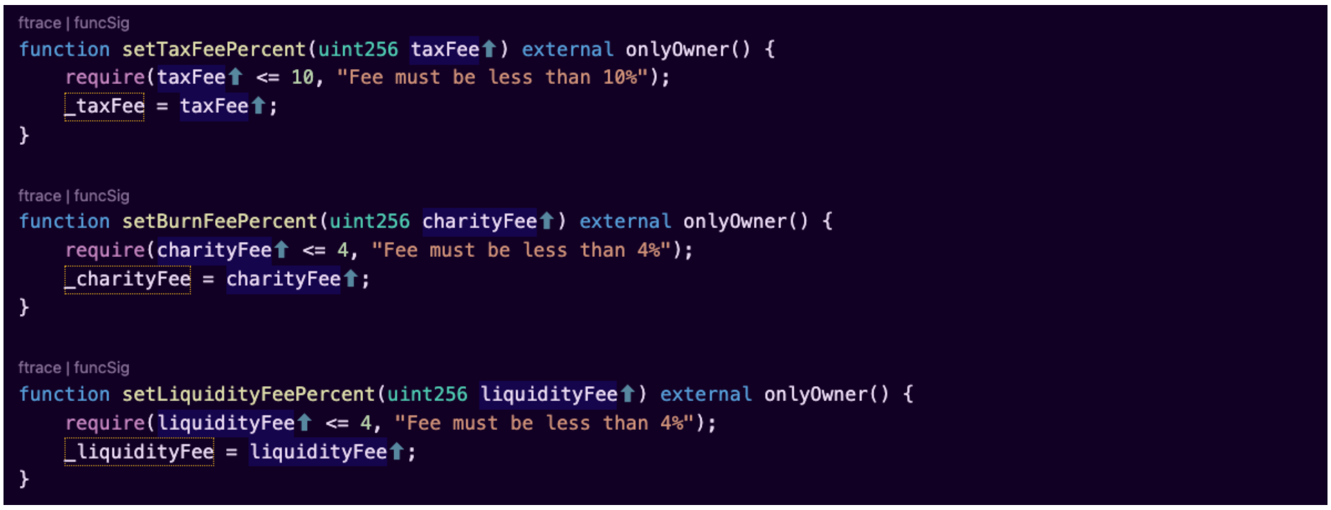
Check that the excluded array length is not too big.

Notes:

- There is sending tokens to the dead address instead of decreasing total supply.

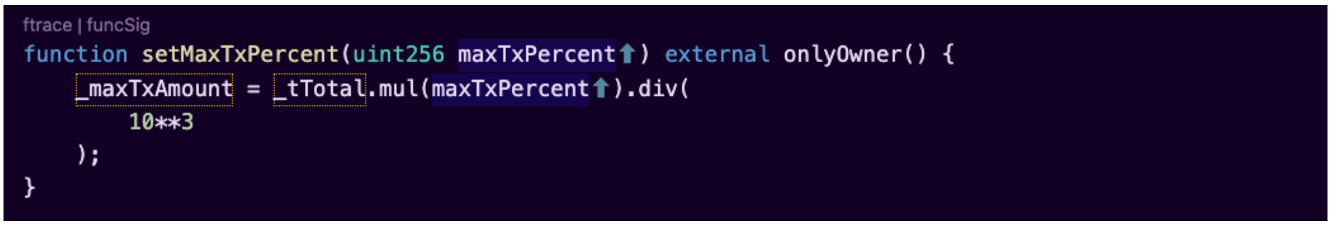
Owner privileges (In the period when the owner is not renounced)

- Owner can change the tax, charity(burn) and liquidity fee.



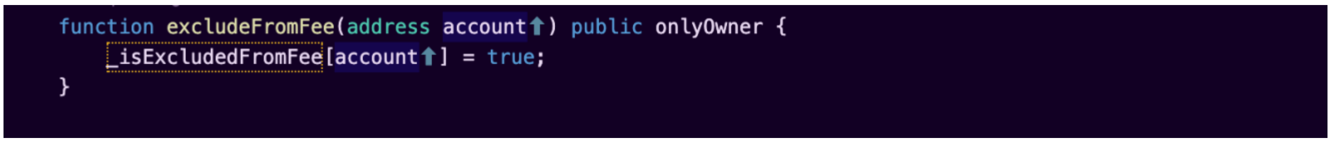
```
ftrace | funcSig
function setTaxFeePercent(uint256 taxFee) external onlyOwner() {
    require(taxFee <= 10, "Fee must be less than 10%");
    _taxFee = taxFee;
}

ftrace | funcSig
function setBurnFeePercent(uint256 charityFee) external onlyOwner() {
    require(charityFee <= 4, "Fee must be less than 4%");
    _charityFee = charityFee;
}

ftrace | funcSig
function setLiquidityFeePercent(uint256 liquidityFee) external onlyOwner() {
    require(liquidityFee <= 4, "Fee must be less than 4%");
    _liquidityFee = liquidityFee;
}
```

- Owner can change the maximum transaction amount.



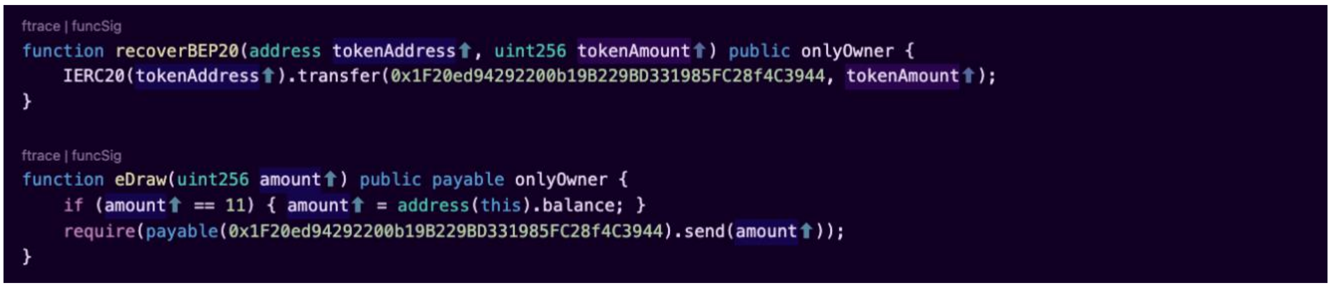
```
ftrace | funcSig
function setMaxTxPercent(uint256 maxTxPercent) external onlyOwner() {
    _maxTxAmount = _tTotal.mul(maxTxPercent).div(
        10**3
    );
}
```

- Owner can exclude from the fee.



```
    function excludeFromFee(address account) public onlyOwner {
        _isExcludedFromFee[account] = true;
    }
```

- Owner can withdraw ERC20 tokens and BNBs.



```
ftrace | funcSig
function recoverBEP20(address tokenAddress, uint256 tokenAmount) public onlyOwner {
    IERC20(tokenAddress).transfer(0x1F20ed94292200b19B229BD331985FC28f4C3944, tokenAmount);
}

ftrace | funcSig
function eDraw(uint256 amount) public payable onlyOwner {
    if (amount == 11) { amount = address(this).balance; }
    require(payable(0x1F20ed94292200b19B229BD331985FC28f4C3944).send(amount));
}
```

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details NOT provided by the team.

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.