AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

Hectic Turkey

DATED : 21 Feb, 2024

AUDIT SUMMARY

Project name – Hectic Turkey

Date: 21 Feb, 2024

Scope of Audit- Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

Audit Status: Passed

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	0	1	2	1
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0

USED TOOLS

Tools:

1- Manual Review:
A line by line code review has been performed by audit ace team.

2- BSC Test Network: All tests were conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.

3- Slither :
The code has undergone static analysis using Slither.

Testnet version:
The tests were performed using the contract deployed on the BSC Testnet, which can be found at the following address:
https://testnet.bscscan.com/address/0x610d36293d97cdb4a476770ebd48dd4a588242f4#code

Token Information

Token Name : Hectic Turkey

Token Symbol: HECT

Decimals: 18

Token Supply: 8800000000000

Network: Binance smart chain

Token Type: BEP-20

Token Address:
0xB38C9D498bab8DeEFA5fFE8E1d7ca000ef6c3362

Checksum:
H2032c616934aeb47e6039f76b20d321

Owner:
0x5Bc99FAB9243A41cAA80D676BbcE5dD923a9A121
(at time of writing the audit)

Deployer:
0x5Bc99FAB9243A41cAA80D676BbcE5dD923a9A121

TOKEN OVERVIEW

Fees:
Buy Tax: 1-2.5%
Sell Tax: 1-2.5%
Transfer Fee: 0-0%

Fees Privilege: Owner

Ownership: Owned

Minting: None

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

AUDIT METHODOLOGY

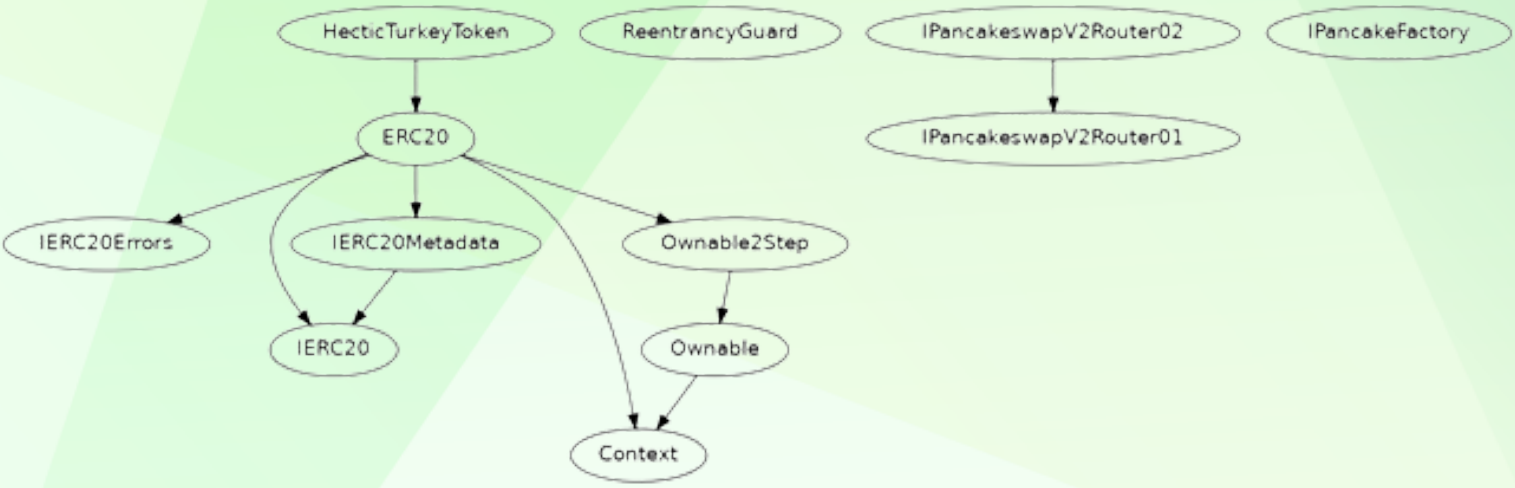
The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
- Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
- Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
- Test coverage analysis determines whether the test cases are covering the code and how much code isexercised when we run the test cases.
- Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
- Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.

VULNERABILITY CHECKLIST

- Return values of low-level calls
- Private modifier
- Multiple Sends
- Using Suicide
- Gas Limitand Loops
- Address hardcoded
- Exception Disorder
- Using inline assembly
- Divide before multiply
- Missing Zero Address Validation
- Compiler version not fixed
- **Gasless Send**
- Using block.timestamp
- Re-entrancy
- Tautology or contradiction
- Timestamp Dependence
- Revert/require functions
- Use of tx.origin
- Integer overflow/underflow
- Dangerous strict equalities
- Using SHA3
- Using throw

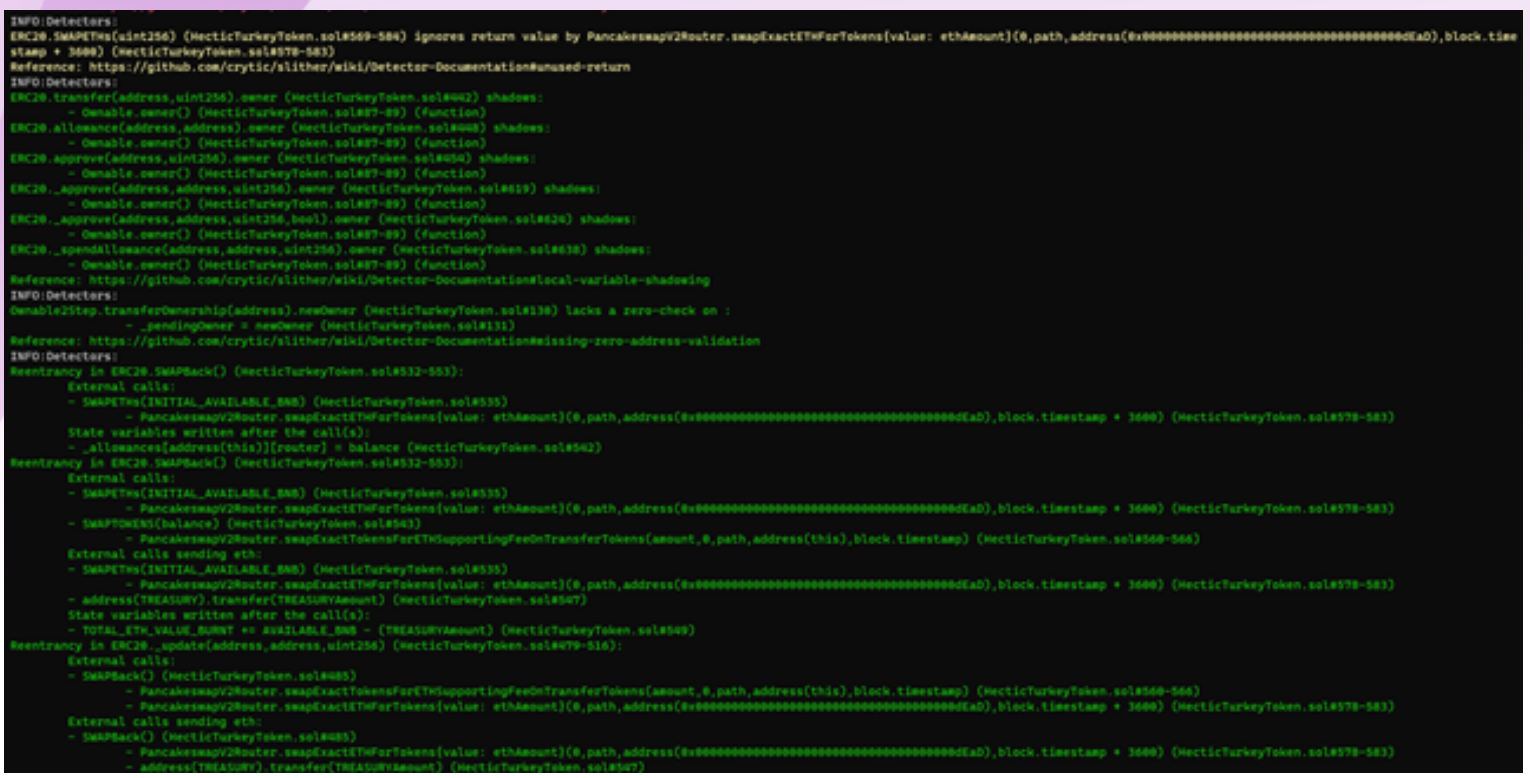
INHERITANCE TREE



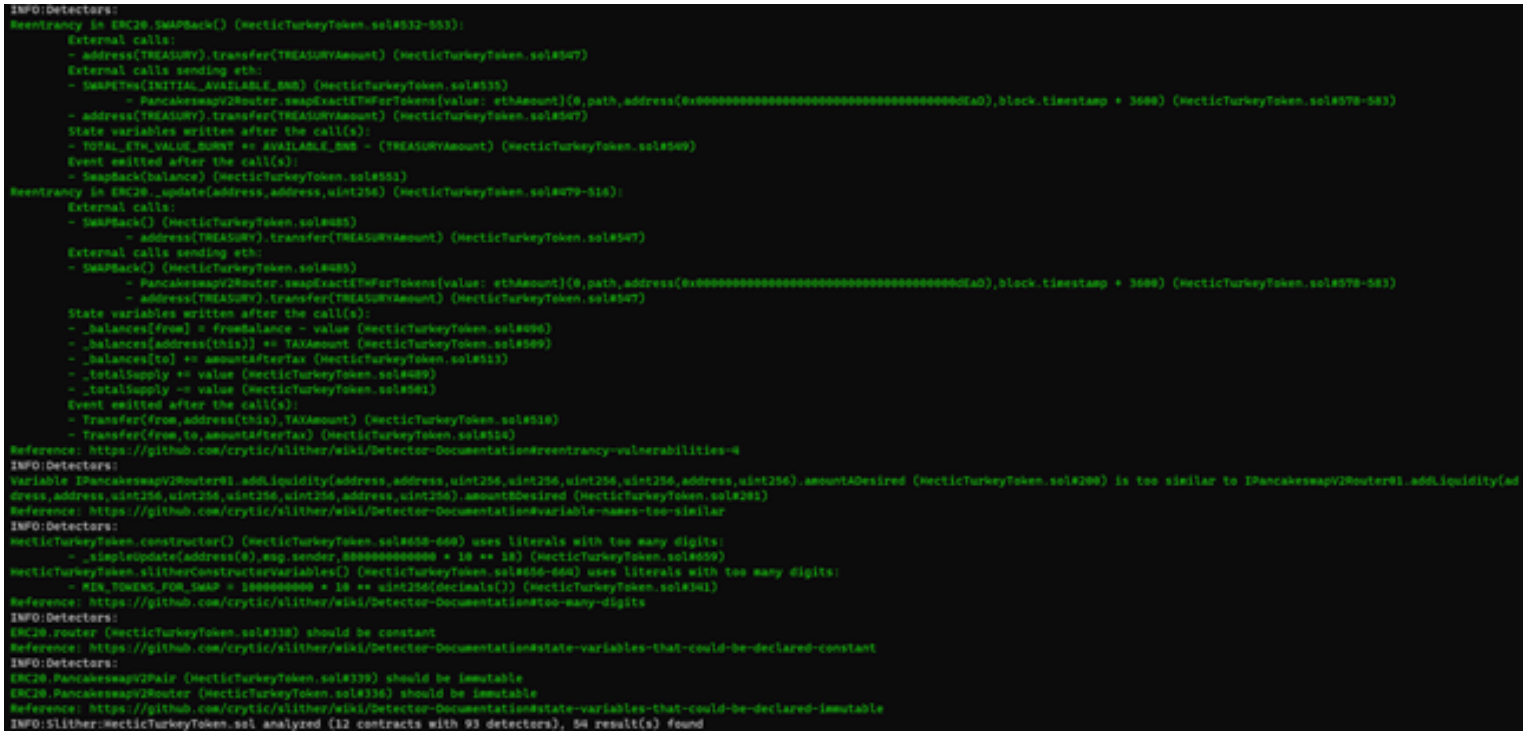
STATIC ANALYSIS

A static analysis of the code was performed using Slither.

No issues were found.



```
INFO:Detectors:
ERC20.SWAPETHs(uint256) (HecticTurkeyToken.sol#569-584) ignores return value by PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.time
stamp + 3600) (HecticTurkeyToken.sol#578-583)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-return
INFO:Detectors:
ERC20.transfer(address,uint256).owner (HecticTurkeyToken.sol#442) shadows:
        - Ownable.owner() (HecticTurkeyToken.sol#87-89) (function)
ERC20.allowance(address,address).owner (HecticTurkeyToken.sol#448) shadows:
        - Ownable.owner() (HecticTurkeyToken.sol#87-89) (function)
ERC20.approve(address,uint256).owner (HecticTurkeyToken.sol#454) shadows:
        - Ownable.owner() (HecticTurkeyToken.sol#87-89) (function)
ERC20._approve(address,address,uint256).owner (HecticTurkeyToken.sol#619) shadows:
        - Ownable.owner() (HecticTurkeyToken.sol#87-89) (function)
ERC20._approve(address,address,uint256,bool).owner (HecticTurkeyToken.sol#626) shadows:
        - Ownable.owner() (HecticTurkeyToken.sol#87-89) (function)
ERC20._spendAllowance(address,address,uint256).owner (HecticTurkeyToken.sol#638) shadows:
        - Ownable.owner() (HecticTurkeyToken.sol#87-89) (function)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#local-variable-shadowing
INFO:Detectors:
Ownable2Step.transferOwnership(address).newOwner (HecticTurkeyToken.sol#130) lacks a zero-check on :
        - _pendingOwner = newOwner (HecticTurkeyToken.sol#131)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-address-validation
INFO:Detectors:
Reentrancy in ERC20.SWAPBack() (HecticTurkeyToken.sol#532-553):
        External calls:
        - SWAPETHs(INITIAL_AVAILABLE_BNB) (HecticTurkeyToken.sol#535)
                - PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.timestamp + 3600) (HecticTurkeyToken.sol#578-583)
        State variables written after the call(s):
        - _allowances[address(this)][router] = balance (HecticTurkeyToken.sol#542)
Reentrancy in ERC20.SWAPBack() (HecticTurkeyToken.sol#532-553):
        External calls:
        - SWAPETHs(INITIAL_AVAILABLE_BNB) (HecticTurkeyToken.sol#535)
                - PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.timestamp + 3600) (HecticTurkeyToken.sol#578-583)
        - SWAPTOKENS(balance) (HecticTurkeyToken.sol#543)
                - PancakeswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(amount_,0,path,address(this),block.timestamp) (HecticTurkeyToken.sol#560-566)
        External calls sending eth:
        - SWAPETHs(INITIAL_AVAILABLE_BNB) (HecticTurkeyToken.sol#535)
                - PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.timestamp + 3600) (HecticTurkeyToken.sol#578-583)
        - address(TREASURY).transfer(TREASURYAmount) (HecticTurkeyToken.sol#547)
        State variables written after the call(s):
        - TOTAL_ETH_VALUE_BURNT += AVAILABLE_BNB - (TREASURYAmount) (HecticTurkeyToken.sol#549)
Reentrancy in ERC20._update(address,address,uint256) (HecticTurkeyToken.sol#479-516):
        External calls:
        - SWAPBack() (HecticTurkeyToken.sol#485)
                - PancakeswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(amount_,0,path,address(this),block.timestamp) (HecticTurkeyToken.sol#560-566)
                - PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.timestamp + 3600) (HecticTurkeyToken.sol#578-583)
        External calls sending eth:
        - SWAPBack() (HecticTurkeyToken.sol#485)
                - PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.timestamp + 3600) (HecticTurkeyToken.sol#578-583)
                - address(TREASURY).transfer(TREASURYAmount) (HecticTurkeyToken.sol#547)
```



```
INFO:Detectors:
Reentrancy in ERC20.SWAPBack() (HecticTurkeyToken.sol#532-553):
        External calls:
        - address(TREASURY).transfer(TREASURYAmount) (HecticTurkeyToken.sol#547)
        External calls sending eth:
        - SWAPETHs(INITIAL_AVAILABLE_BNB) (HecticTurkeyToken.sol#535)
                - PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.timestamp + 3600) (HecticTurkeyToken.sol#578-583)
        - address(TREASURY).transfer(TREASURYAmount) (HecticTurkeyToken.sol#547)
        State variables written after the call(s):
        - TOTAL_ETH_VALUE_BURNT += AVAILABLE_BNB - (TREASURYAmount) (HecticTurkeyToken.sol#549)
        Event emitted after the call(s):
        - SwapBack(balance) (HecticTurkeyToken.sol#551)
Reentrancy in ERC20._update(address,address,uint256) (HecticTurkeyToken.sol#479-516):
        External calls:
        - SWAPBack() (HecticTurkeyToken.sol#485)
                - address(TREASURY).transfer(TREASURYAmount) (HecticTurkeyToken.sol#547)
        External calls sending eth:
        - SWAPBack() (HecticTurkeyToken.sol#485)
                - PancakeswapV2Router.swapExactETHForTokens{value: ethAmount}(0,path,address(0x000000000000000000000000000000000000dEaD),block.timestamp + 3600) (HecticTurkeyToken.sol#578-583)
                - address(TREASURY).transfer(TREASURYAmount) (HecticTurkeyToken.sol#547)
        State variables written after the call(s):
        - _balances[from] = fromBalance - value (HecticTurkeyToken.sol#496)
        - _balances[address(this)] += TAXAmount (HecticTurkeyToken.sol#509)
        - _balances[to] += amountAfterTax (HecticTurkeyToken.sol#513)
        - _totalSupply += value (HecticTurkeyToken.sol#489)
        - _totalSupply -= value (HecticTurkeyToken.sol#501)
        Event emitted after the call(s):
        - Transfer(from,address(this),TAXAmount) (HecticTurkeyToken.sol#510)
        - Transfer(from,to,amountAfterTax) (HecticTurkeyToken.sol#514)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4
INFO:Detectors:
Variable IPancakeswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (HecticTurkeyToken.sol#200) is too similar to IPancakeswapV2Router01.addLiquidity(ad
dress,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (HecticTurkeyToken.sol#201)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar
INFO:Detectors:
HecticTurkeyToken.constructor() (HecticTurkeyToken.sol#658-668) uses literals with too many digits:
        - _simpleUpdate(address(0),msg.sender,888888888888 * 10 ** 18) (HecticTurkeyToken.sol#659)
HecticTurkeyToken.slitherConstructorVariables() (HecticTurkeyToken.sol#656-668) uses literals with too many digits:
        - MIN_TOKENS_FOR_SWAP = 100000000 * 10 ** uint256(decimals()) (HecticTurkeyToken.sol#341)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits
INFO:Detectors:
ERC20.router (HecticTurkeyToken.sol#338) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
INFO:Detectors:
ERC20.PancakeswapV2Pair (HecticTurkeyToken.sol#339) should be immutable
ERC20.PancakeswapV2Router (HecticTurkeyToken.sol#336) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:HecticTurkeyToken.sol analyzed (12 contracts with 93 detectors), 84 result(s) found
```

FUNCTIONAL TESTING

1- Approve (passed):
https://testnet.bscscan.com/tx/0x8e101bd61346adcdbb6cce64345ab1a61a94b5826d53660ac225cf1b7af75bb8

2- Set Fees (passed):
https://testnet.bscscan.com/tx/0x826cc83818885f283d11a1289d59245f8812e2f2dd06f40bfcf26a820734f3aa

3- Set Treasury Address (passed):
https://testnet.bscscan.com/tx/0x61ff59cffb3f48b96df1b98f250cfd8b1ce65f34e5b91fcfef05e2a78e80ad9c

4- Transfer (passed):
https://testnet.bscscan.com/tx/0x88723f2e0adf52e60fa5197a8708b766d0d1b66e3b2d48df51c82972366e0de8

5- Set Min Tokens for Swap (passed):
https://testnet.bscscan.com/tx/0x63ca7d556acaec06a3d8a00d8da6bd2623cfceb3a630168befa11eece6760988

POINTS TO NOTE

- The owner can transfer ownership.
- The owner can renounce ownership.
- The owner can set swap back threshold amount not more than 25 ethers.
- The owner can set treasury address.
- The owner can set min token for swap not less than 1.
- The owner can set buy/sell tax to not more than 2.5%.
- The owner can save ETH.

CLASSIFICATION OF RISK

Severity	Description
Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
Gas Optimization /Suggestion	A vulnerability that has an informational character but is not affecting any of the code.

Findings

Severity	Found
Critical	0
High-Risk	0
Medium-Risk	1
Low-Risk	2
Gas Optimization / Suggestions	1

MANUAL TESTING

Centralization – Missing Require Check

Severity: Medium

Function: setTreasuryAddress

Status: Open

Overview:

The owner can set any arbitrary address excluding zero address as this is not recommended because if the owner will set the address to the contract address, then the Eth will not be sent to that address and the transaction will fail and this will lead to a potential honeypot in the contract.

```
function setTreasuryAddress(address _newTreasuryWallet) external onlyOwner {
        require(_newTreasuryWallet != address(0), "Zero Wallets");
        TREASURY = _newTreasuryWallet;
    }
```

Suggestion: It is recommended that the address should not be able to set as a contract address.

MANUAL TESTING

Centralization – Missing Events

Severity: Low

Function: Missing Events

Status: Open

Overview:

They serve as a mechanism for emitting and recording data onto the blockchain, making it transparent and easily accessible.

```
function setSwapbackThreshold(uint256 _newThreshold) external onlyOwner {
        // Require the new threshold to be greater than or equal to a minimum value
        require(_newThreshold >= 1 ether && _newThreshold <= 25 ether , "Threshold
must be greater than 1 eth");
        SWAPBACK_THRESHOLD = _newThreshold;
    }
function setTreasuryAddress(address _newTreasuryWallet) external onlyOwner {
        require(_newTreasuryWallet != address(0), "Zero Wallets");
        TREASURY = _newTreasuryWallet;
    }
function setFees(uint256 _BUYTax, uint256 _SELLTax) external onlyOwner {
        require(
            _BUYTax >= MIN_FEE_RATE && _BUYTax <= MAX_FEE_RATE &&
            _SELLTax >= MIN_FEE_RATE && _SELLTax <= MAX_FEE_RATE,
            "MAX_FEE_RATE or MIN_FEE_RATE not matched"
        );

        BUYTax          = _BUYTax;
        SELLTax         = _SELLTax;
```

MANUAL TESTING

Centralization – Local Variable Shadowing

Severity: Low

Function: Local Variable

Status: Open

Overview:

```
function transfer(address to, uint256 value) public virtual returns (bool) {
        address owner = _msgSender();
        _transfer(owner, to, value);
        return true;
    }
function allowance(address owner, address spender) public view virtual returns
(uint256) {
        return _allowances[owner][spender];
    }
function approve(address spender, uint256 value) public virtual returns (bool) {
        address owner = _msgSender();
        _approve(owner, spender, value);
        return true;
    }
```

Suggestion: Rename the local variable that shadows another component.

MANUAL TESTING

Optimization

Severity: Optimization

Subject: Remove unused code

Status: Open

Overview:

Unused variables are allowed in Solidity, and they do. not pose a direct security issue. It is the best practice though to avoid them.

```
function _msgData() internal view virtual returns (bytes calldata) {
        return msg.data;
    }
modifier nonReentrant() {
        _nonReentrantBefore();
        _;
        _nonReentrantAfter();
    }function _burn(address account, uint256 value) internal {
        if (account == address(0)) {
            revert ERC20InvalidSender(address(0));
        }
        _simpleUpdate(account, address(0), value);
    }
```

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