AuditAce

FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

PEPEBULL

DATED : 2 March, 2024

AUDIT SUMMARY

Project name – PEPEBULL

Date: 2 March, 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	1	2
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/0x72e19b9748d5b4f6532fdf62dd84038040a159d6#code

Token Information

Token Name : PEPEBULL

Token Symbol: PEPEBULL

Decimals: 18

Total Supply: 1000000000

Network: Binance smart chain

Token Type: BEP-20

Token Address:
0x9B6F23c9bfe27dfb41e6025f39e7303631Cd0d27

Checksum:
B67acbefe2a12642d388659dffd20713

Owner:
0xC30555dF47CF9A7e8EAa486CF19001D4950569E5
(at time of writing the audit)

Deployer:
0xC30555dF47CF9A7e8EAa486CF19001D4950569E5

TOKEN OVERVIEW

Fees:
BuyBack Tax: 3%
Sell Tax: 3%
Transfer Tax: 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.

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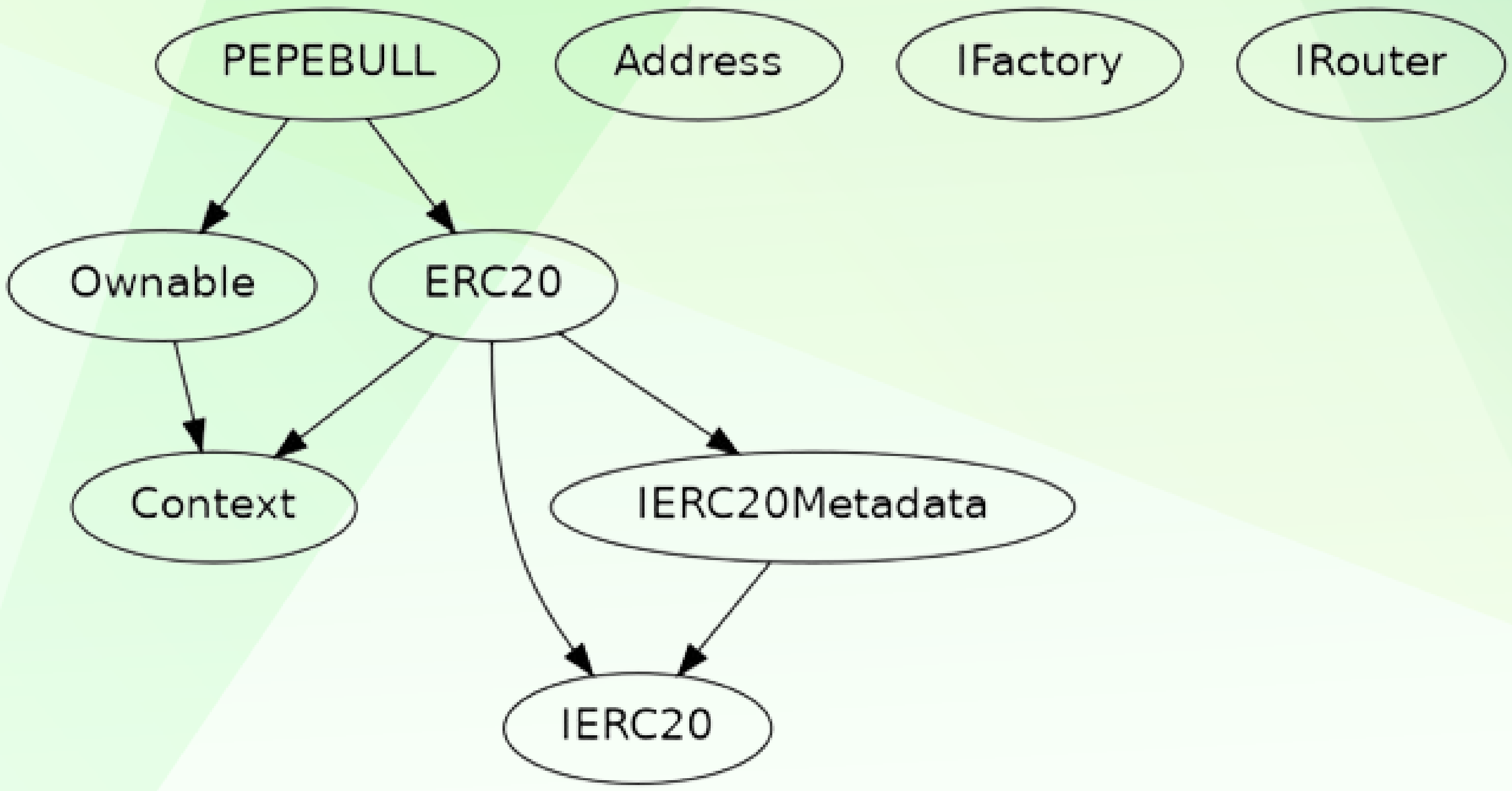
VULNERABILITY CHECKLIST

- ✓ 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

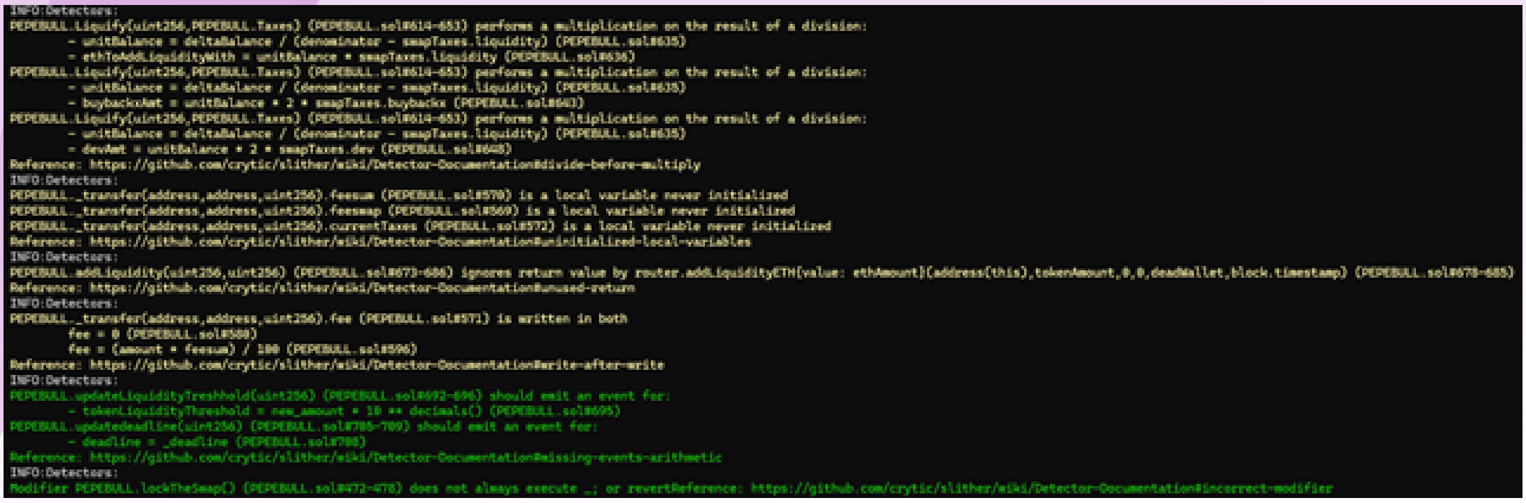
INHERITANCE TREE



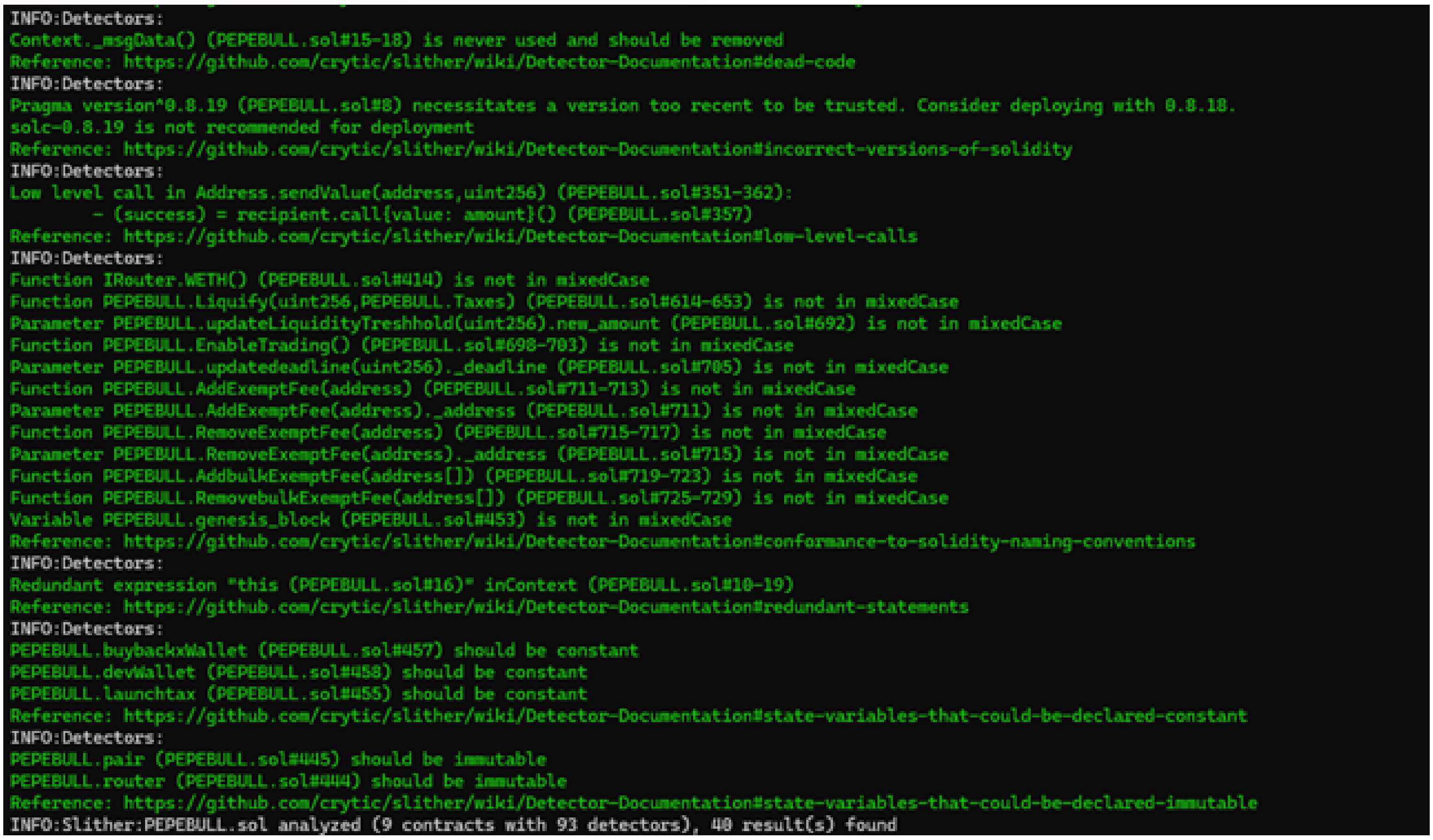
STATIC ANALYSIS

A static analysis of the code was performed using Slither.

No issues were found.



```
INFO:Detectors:
PEPEBULL.Liquify(uint256,PEPEBULL.Taxes) (PEPEBULL.sol#614-653) performs a multiplication on the result of a division:
        - unitBalance = deltaBalance / (denominator - swapTaxes.liquidity) (PEPEBULL.sol#635)
        - ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity (PEPEBULL.sol#636)
PEPEBULL.Liquify(uint256,PEPEBULL.Taxes) (PEPEBULL.sol#614-653) performs a multiplication on the result of a division:
        - unitBalance = deltaBalance / (denominator - swapTaxes.liquidity) (PEPEBULL.sol#635)
        - buybackAmt = unitBalance * 2 * swapTaxes.buyback (PEPEBULL.sol#643)
PEPEBULL.Liquify(uint256,PEPEBULL.Taxes) (PEPEBULL.sol#614-653) performs a multiplication on the result of a division:
        - unitBalance = deltaBalance / (denominator - swapTaxes.liquidity) (PEPEBULL.sol#635)
        - devAmt = unitBalance * 2 * swapTaxes.dev (PEPEBULL.sol#648)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#divide-before-multiply
INFO:Detectors:
PEPEBULL._transfer(address,address,uint256).feesum (PEPEBULL.sol#570) is a local variable never initialized
PEPEBULL._transfer(address,address,uint256).feeswap (PEPEBULL.sol#569) is a local variable never initialized
PEPEBULL._transfer(address,address,uint256).currentTaxes (PEPEBULL.sol#572) is a local variable never initialized
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#uninitialized-local-variables
INFO:Detectors:
PEPEBULL.addLiquidity(uint256,uint256) (PEPEBULL.sol#673-686) ignores return value by router.addLiquidityETH{value: ethAmount}(address(this),tokenAmount,0,0,deadWallet,block.timestamp) (PEPEBULL.sol#678-685)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-return
INFO:Detectors:
PEPEBULL._transfer(address,address,uint256).fee (PEPEBULL.sol#571) is written in both
        fee = 0 (PEPEBULL.sol#580)
        fee = (amount * feesum) / 100 (PEPEBULL.sol#596)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#write-after-write
INFO:Detectors:
PEPEBULL.updateLiquidityTreshhold(uint256) (PEPEBULL.sol#692-696) should emit an event for:
        - tokenLiquidityThreshold = new_amount * 10 ** decimals() (PEPEBULL.sol#695)
PEPEBULL.updatedeadline(uint256) (PEPEBULL.sol#705-709) should emit an event for:
        - deadline = _deadline (PEPEBULL.sol#708)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-events-arithmetic
INFO:Detectors:
Modifier PEPEBULL.lockTheSwap() (PEPEBULL.sol#472-478) does not always execute _; or revertReference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-modifier
```



```
INFO:Detectors:
Context._msgData() (PEPEBULL.sol#15-18) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version^0.8.19 (PEPEBULL.sol#8) necessitates a version too recent to be trusted. Consider deploying with 0.8.18.
solc-0.8.19 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Low level call in Address.sendValue(address,uint256) (PEPEBULL.sol#351-362):
        - (success) = recipient.call{value: amount}() (PEPEBULL.sol#357)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
INFO:Detectors:
Function IRouter.WETH() (PEPEBULL.sol#414) is not in mixedCase
Function PEPEBULL.Liquify(uint256,PEPEBULL.Taxes) (PEPEBULL.sol#614-653) is not in mixedCase
Parameter PEPEBULL.updateLiquidityTreshhold(uint256).new_amount (PEPEBULL.sol#692) is not in mixedCase
Function PEPEBULL.EnableTrading() (PEPEBULL.sol#698-703) is not in mixedCase
Parameter PEPEBULL.updatedeadline(uint256)._deadline (PEPEBULL.sol#705) is not in mixedCase
Function PEPEBULL.AddExemptFee(address) (PEPEBULL.sol#711-713) is not in mixedCase
Parameter PEPEBULL.AddExemptFee(address)._address (PEPEBULL.sol#711) is not in mixedCase
Function PEPEBULL.RemoveExemptFee(address) (PEPEBULL.sol#715-717) is not in mixedCase
Parameter PEPEBULL.RemoveExemptFee(address)._address (PEPEBULL.sol#715) is not in mixedCase
Function PEPEBULL.AddbulkExemptFee(address[]) (PEPEBULL.sol#719-723) is not in mixedCase
Function PEPEBULL.RemovebulkExemptFee(address[]) (PEPEBULL.sol#725-729) is not in mixedCase
Variable PEPEBULL.genesis_block (PEPEBULL.sol#453) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Redundant expression "this (PEPEBULL.sol#16)" inContext (PEPEBULL.sol#10-19)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements
INFO:Detectors:
PEPEBULL.buybackWallet (PEPEBULL.sol#457) should be constant
PEPEBULL.devWallet (PEPEBULL.sol#458) should be constant
PEPEBULL.launchtax (PEPEBULL.sol#455) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
INFO:Detectors:
PEPEBULL.pair (PEPEBULL.sol#445) should be immutable
PEPEBULL.router (PEPEBULL.sol#444) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:PEPEBULL.sol analyzed (9 contracts with 93 detectors), 40 result(s) found
```

FUNCTIONAL TESTING

1- Approve (passed):
https://testnet.bscscan.com/tx/0x8b69d6abc3b630da2b847e55b72435f6a5e4fc8670ad94f854e013f1f1be1435

2- Add Exempt Fee (passed):
https://testnet.bscscan.com/tx/0x1b2255736d724de9b6299730b3fd77ce6b4a22aa81af9c24a5194beb613bd4ed

3- Remove Exempt Fee (passed):
https://testnet.bscscan.com/tx/0x7bbd70b3dfae44cd1d23f20ac1a6b4751941724e48973bda083b0ff5ab362ab4

4- Addbulk Exempt Fee (passed):
https://testnet.bscscan.com/tx/0x4823342473af258d2c8a4210987e59af4e091d4eb1454838d13c728a34ed10b1

5- Removebulk Exempt Fee (passed):
https://testnet.bscscan.com/tx/0xe9ffcccf5c075a5633b19f4ea14ce0648feb4c217c99a7df44da6bf74516bb80

6- Update Liquidity Provide (passed):
https://testnet.bscscan.com/tx/0xf87cff294c92259228d603f85b43c3a0e0d9a8e5d5939836ffe36e2417e4a7f8

POINTS TO NOTE

- The owner can transfer ownership.
- The owner can renounce ownership.
- The owner can update Liquidity threshold.
- The owner can Enable trading.
- The owner can update the deadline.
- The owner can add/remove address from exempt fees.
- The owner can rescue BEP20.

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.

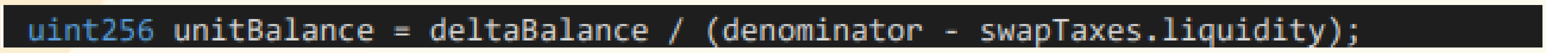
Findings

Severity	Found
🟥 **Critical**	0
🟫 **High-Risk**	0
🟧 **Medium-Risk**	1
🟨 **Low-Risk**	1
🟦 **Gas Optimization / Suggestions**	2

MANUAL TESTING

Centralization: Divide before multiply
Severity: Medium
Status: Open

Overview:
Solidity's integer division truncates. Thus, performing division before multiplication can lead to precision loss.



```
uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);
```

Suggestion:
Consider ordering multiplication before division.

MANUAL TESTING

Centralization – Missing Events

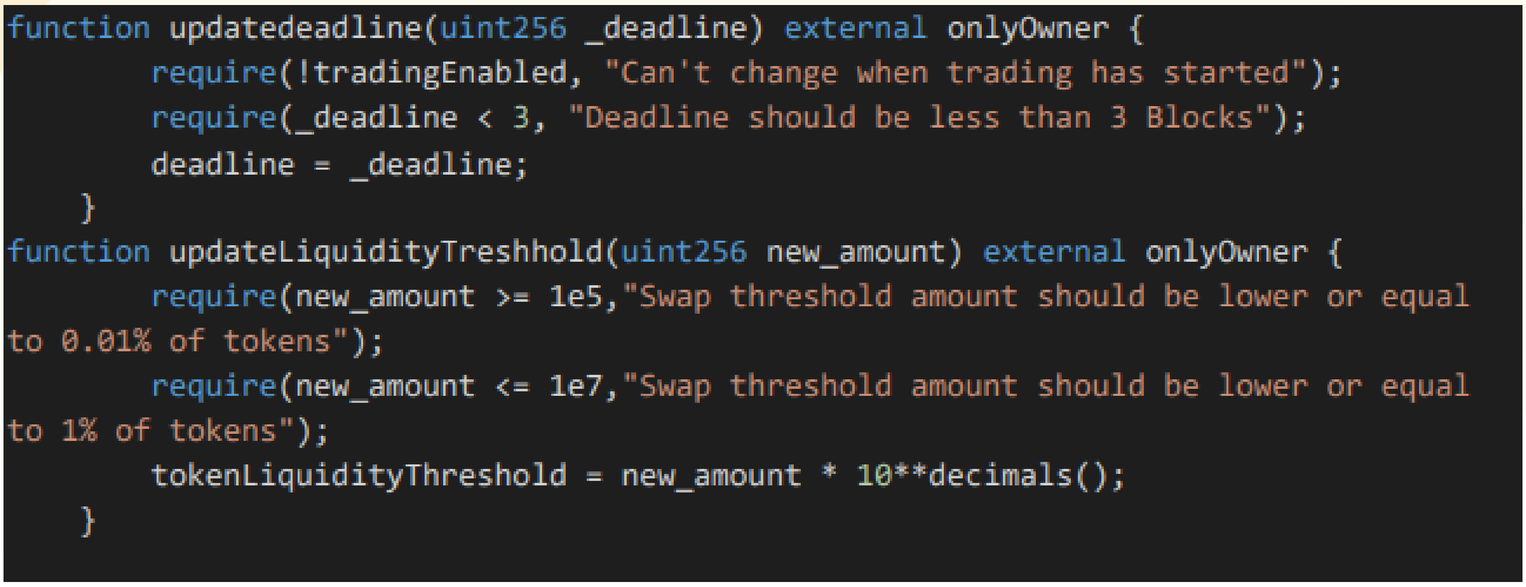
Severity: Low

Subject: 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 updatedeadline(uint256 _deadline) external onlyOwner {
        require(!tradingEnabled, "Can't change when trading has started");
        require(_deadline < 3, "Deadline should be less than 3 Blocks");
        deadline = _deadline;
    }
function updateLiquidityTreshhold(uint256 new_amount) external onlyOwner {
        require(new_amount >= 1e5,"Swap threshold amount should be lower or equal
to 0.01% of tokens");
        require(new_amount <= 1e7,"Swap threshold amount should be lower or equal
to 1% of tokens");
        tokenLiquidityThreshold = new_amount * 10**decimals();
    }
```

MANUAL TESTING

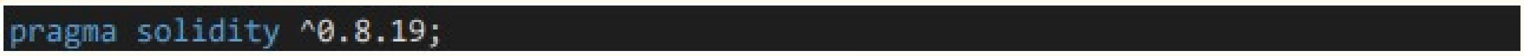
Optimization

Severity: Informational

Subject: Floating Pragma Solidity version

Status: Open

Overview:
It is considered best practice to pick one compiler version and stick with it. With a floating pragma, contracts may accidentally be deployed using an outdated.



```
pragma solidity ^0.8.19;
```

Suggestion:
Adding the latest constant version of solidity is recommended, as this prevents the unintentional deployment of a contract with an outdated compiler that contains unresolved bugs.

MANUAL TESTING

Optimization

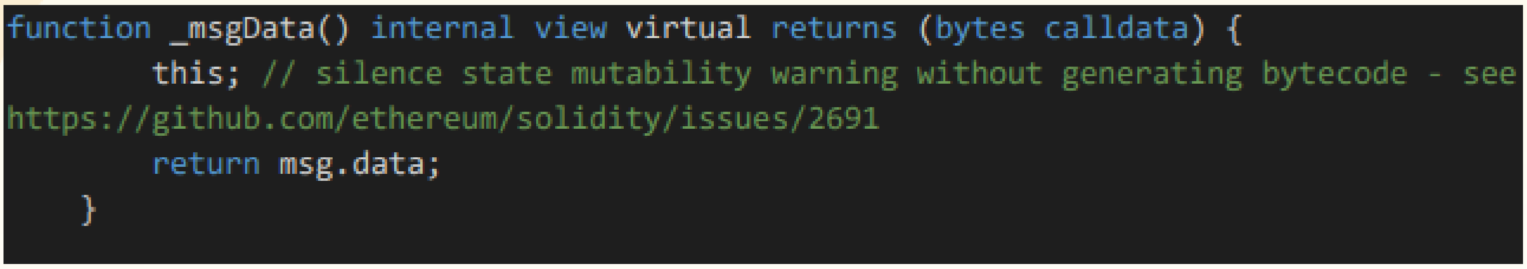
Severity: Optimization

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) {
        this; // silence state mutability warning without generating bytecode - see
https://github.com/ethereum/solidity/issues/2691
        return msg.data;
    }
```

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