expelee

Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

BONGO CAT

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OVERVIEW

The Expelee team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analysed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

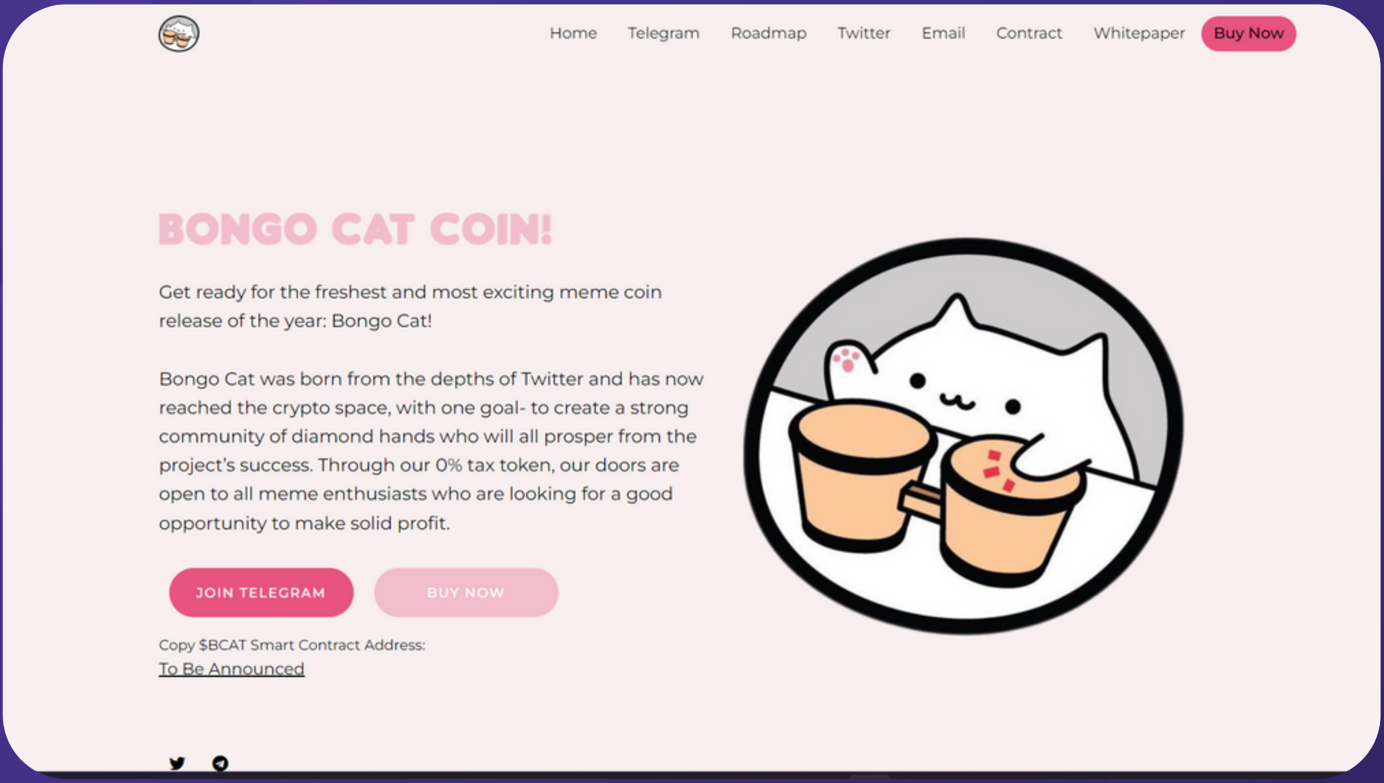
Audit Result	Passed
KYC Verification	-
Audit Date	22 May 2023

PROJECT DESCRIPTION

Bongo Cat was born from the depths of Twitter and has now reached the crypto space, with one goal- to create a strong community of diamond hands who will all prosper from the project's success. Through our 0% tax token, our doors are open to all meme enthusiasts who are looking for a good opportunity to make solid profit.

SOCIAL MEDIA PROFILES

BONGO CAT



BONGO CAT COIN!

Get ready for the freshest and most exciting meme coin release of the year: Bongo Cat!

Bongo Cat was born from the depths of Twitter and has now reached the crypto space, with one goal- to create a strong community of diamond hands who will all prosper from the project's success. Through our 0% tax token, our doors are open to all meme enthusiasts who are looking for a good opportunity to make solid profit.

Copy $BCAT Smart Contract Address:
To Be Announced

BongoCatCoinPortal

BongoCatCoinBSC

bongocat.vip

It's always good to check the social profiles of the project, before making your investment.

Team Expelee

CONTRACT DETAILS

Token Name: BongoCat

Symbol: $BCAT

Network: Binance Smart Chain

Language: Solidity

Contract Address:
0xD6731bd33521F5bCfD9380075E6888E7a85852d6

Total Supply: 1000000000

Owner's Wallet:
0x4E4eFA8636529E93AcFe943B5e813Eb62be16BC5

Deployer's Wallet:
0x4E4eFA8636529E93AcFe943B5e813Eb62be16BC5

Testnet Link:
https://testnet.bscscan.com/address/0x6bA850D443e60aE80935488D379989a9D8214065

OWNER PRIVILEGES

- Owner can change buy/sell fees max 10% and transfer fee max 5%
- Owner can exclude account from fees
- Owner can enable trading
- Owner can change swap token at amount within reasonable limit
- Owner can change swap setting
- Owner can withdraw stuck BNB
- Owner can withdraw stuck tokens
- Owner can update marketing wallet

AUDIT METHODOLOGY

Audit Details

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.

Audit Goals

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch , that lead to scams and rugpulls.

Code Quality

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability

Tools

- DE
- Open Zeppelin
- Code Analyzer
- Solidity Code
- Compiler
- Hardhat

VULNERABILITY CHECKS

Design Logic	Passed
Compiler warnings	Passed
Private user data leaks	Passed
Timestamps dependence	Passed
Integer overflow and underflow	Passed
Race conditions & reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front Running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zepplin module	Passed

RISK CLASSIFICATION

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and acces control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

High Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Medium Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

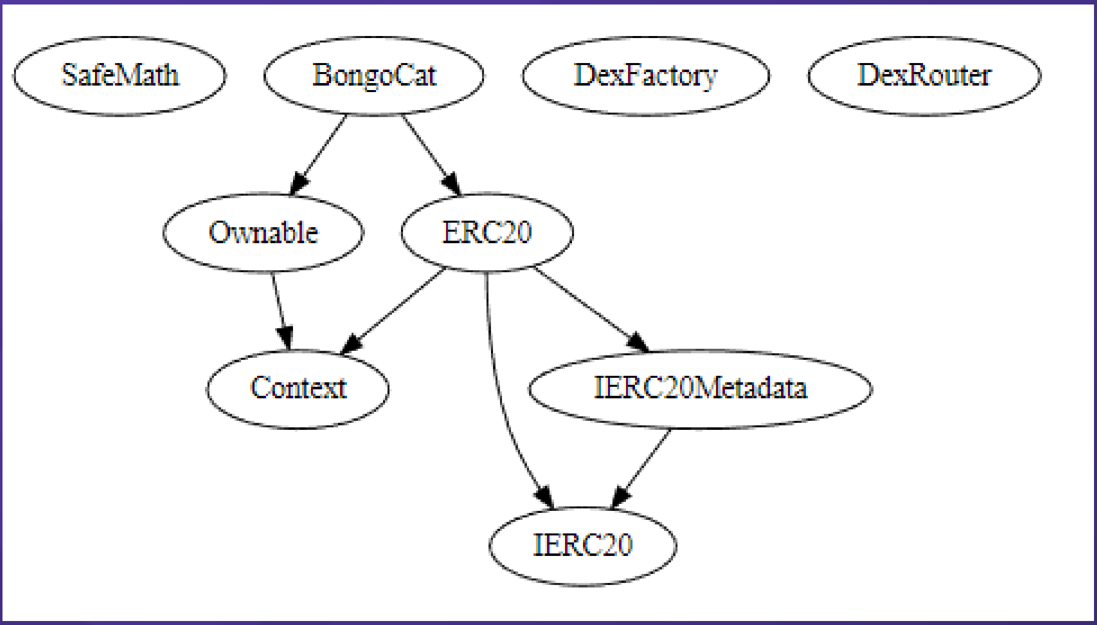
Low Risk

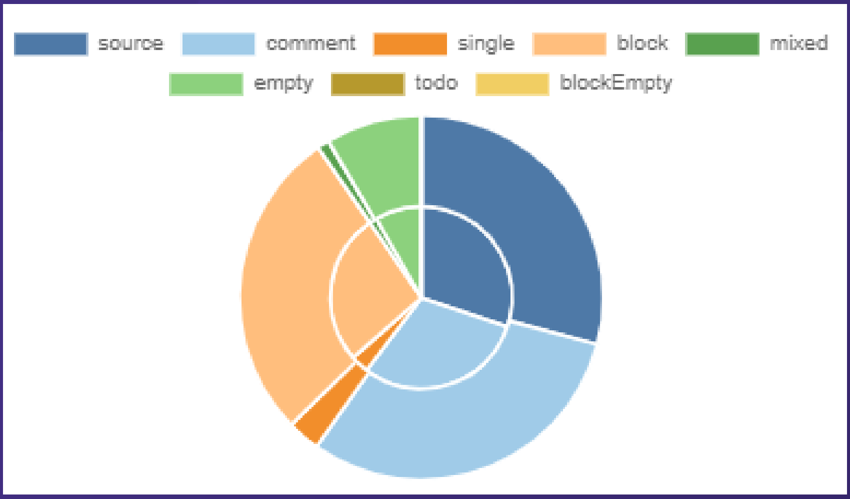
Issues on this level are minor details and warning that can remain unfixed.

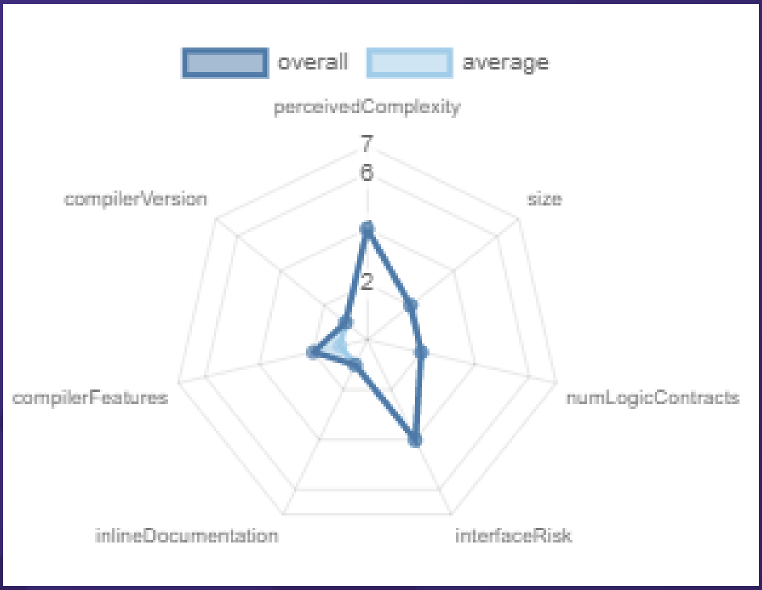
Informational

Issues on this level are minor details and warning that can remain unfixed.

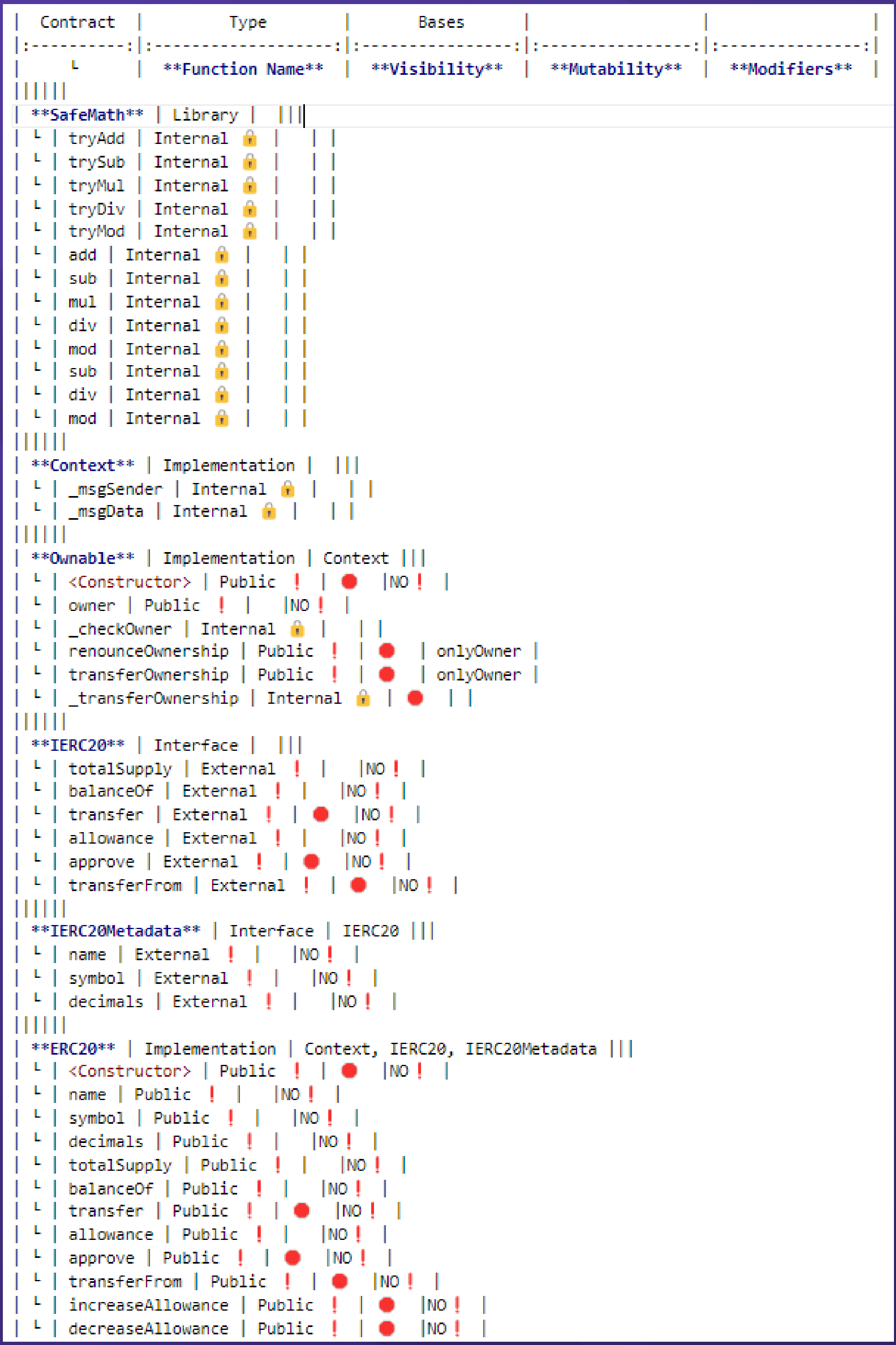
INHERITANCE TREES





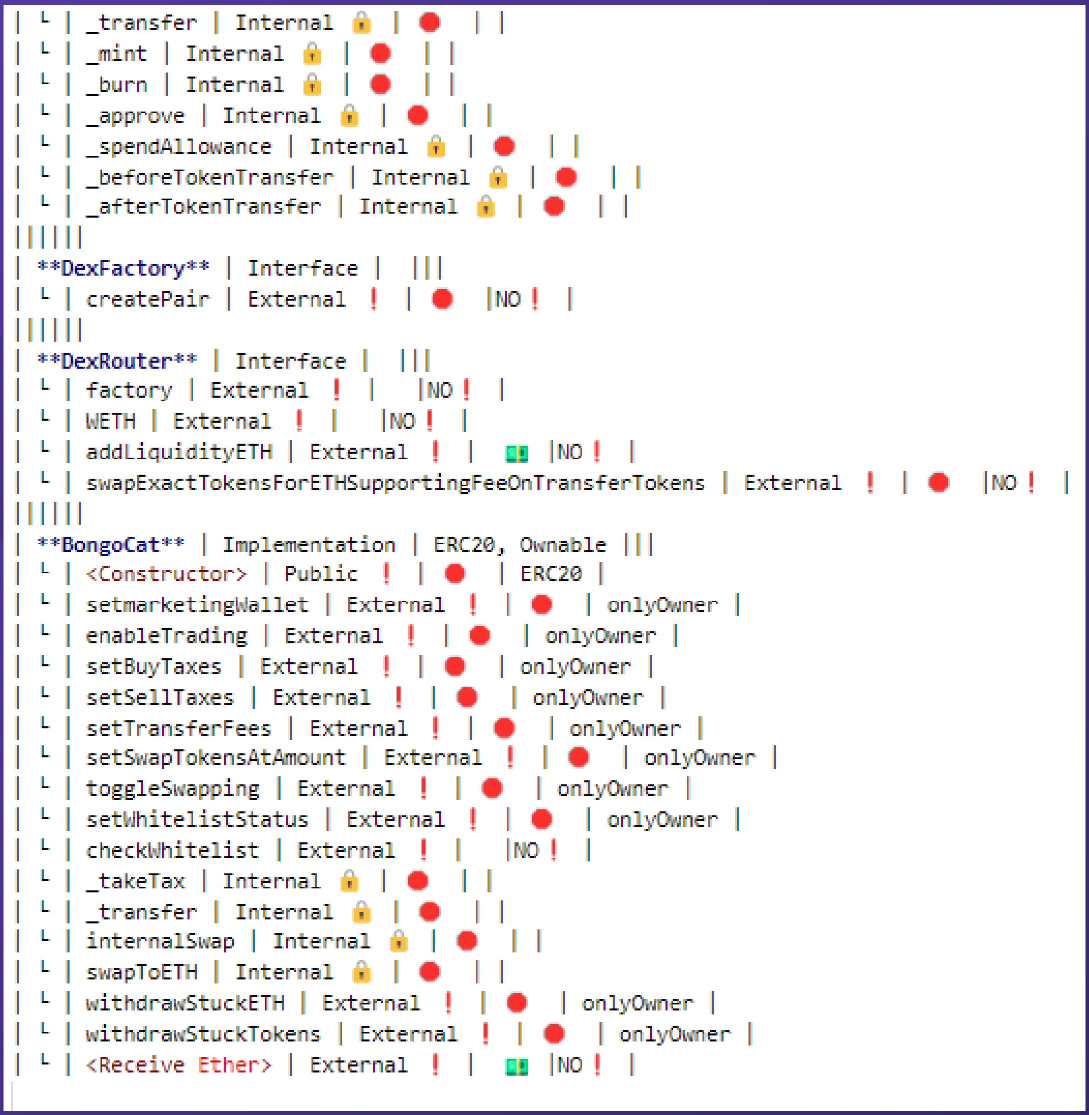


FUNCTION DETAILS



```
| Contract |        Type        |       Bases      |                  |                 |
|:----------:|:-------------------:|:----------------:|:----------------:|:---------------:|
|    └      |  **Function Name**  |  **Visibility**  |  **Mutability**  |  **Modifiers**  |
||||||
| **SafeMath** | Library |  |||
| └ | tryAdd | Internal 🔐 |   | |
| └ | trySub | Internal 🔐 |   | |
| └ | tryMul | Internal 🔐 |   | |
| └ | tryDiv | Internal 🔐 |   | |
| └ | tryMod | Internal 🔐 |   | |
| └ | add | Internal 🔐 |   | |
| └ | sub | Internal 🔐 |   | |
| └ | mul | Internal 🔐 |   | |
| └ | div | Internal 🔐 |   | |
| └ | mod | Internal 🔐 |   | |
| └ | sub | Internal 🔐 |   | |
| └ | div | Internal 🔐 |   | |
| └ | mod | Internal 🔐 |   | |
||||||
| **Context** | Implementation |  |||
| └ | _msgSender | Internal 🔐 |   | |
| └ | _msgData | Internal 🔐 |   | |
||||||
| **Ownable** | Implementation | Context |||
| └ | <Constructor> | Public ❗️ | 🛑  |NO❗️ |
| └ | owner | Public ❗️ |   |NO❗️ |
| └ | _checkOwner | Internal 🔐 |   | |
| └ | renounceOwnership | Public ❗️ | 🛑  | onlyOwner |
| └ | transferOwnership | Public ❗️ | 🛑  | onlyOwner |
| └ | _transferOwnership | Internal 🔐 | 🛑  | |
||||||
| **IERC20** | Interface |  |||
| └ | totalSupply | External ❗️ |   |NO❗️ |
| └ | balanceOf | External ❗️ |   |NO❗️ |
| └ | transfer | External ❗️ | 🛑  |NO❗️ |
| └ | allowance | External ❗️ |   |NO❗️ |
| └ | approve | External ❗️ | 🛑  |NO❗️ |
| └ | transferFrom | External ❗️ | 🛑  |NO❗️ |
||||||
| **IERC20Metadata** | Interface | IERC20 |||
| └ | name | External ❗️ |   |NO❗️ |
| └ | symbol | External ❗️ |   |NO❗️ |
| └ | decimals | External ❗️ |   |NO❗️ |
||||||
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata |||
| └ | <Constructor> | Public ❗️ | 🛑  |NO❗️ |
| └ | name | Public ❗️ |   |NO❗️ |
| └ | symbol | Public ❗️ |   |NO❗️ |
| └ | decimals | Public ❗️ |   |NO❗️ |
| └ | totalSupply | Public ❗️ |   |NO❗️ |
| └ | balanceOf | Public ❗️ |   |NO❗️ |
| └ | transfer | Public ❗️ | 🛑  |NO❗️ |
| └ | allowance | Public ❗️ |   |NO❗️ |
| └ | approve | Public ❗️ | 🛑  |NO❗️ |
| └ | transferFrom | Public ❗️ | 🛑  |NO❗️ |
| └ | increaseAllowance | Public ❗️ | 🛑  |NO❗️ |
| └ | decreaseAllowance | Public ❗️ | 🛑  |NO❗️ |
```

FUNCTION DETAILS



```
| └ | _transfer | Internal 🔒 | 🛑  | |
| └ | _mint | Internal 🔒 | 🛑  | |
| └ | _burn | Internal 🔒 | 🛑  | |
| └ | _approve | Internal 🔒 | 🛑  | |
| └ | _spendAllowance | Internal 🔒 | 🛑  | |
| └ | _beforeTokenTransfer | Internal 🔒 | 🛑  | |
| └ | _afterTokenTransfer | Internal 🔒 | 🛑  | |
||||||
| **DexFactory** | Interface |  |||
| └ | createPair | External ❗ | 🛑  |NO❗ |
||||||
| **DexRouter** | Interface |  |||
| └ | factory | External ❗ |   |NO❗ |
| └ | WETH | External ❗ |   |NO❗ |
| └ | addLiquidityETH | External ❗ |  💵 |NO❗ |
| └ | swapExactTokensForETHSupportingFeeOnTransferTokens | External ❗ | 🛑  |NO❗ |
||||||
| **BongoCat** | Implementation | ERC20, Ownable |||
| └ | <Constructor> | Public ❗ | 🛑  | ERC20 |
| └ | setmarketingWallet | External ❗ | 🛑  | onlyOwner |
| └ | enableTrading | External ❗ | 🛑  | onlyOwner |
| └ | setBuyTaxes | External ❗ | 🛑  | onlyOwner |
| └ | setSellTaxes | External ❗ | 🛑  | onlyOwner |
| └ | setTransferFees | External ❗ | 🛑  | onlyOwner |
| └ | setSwapTokensAtAmount | External ❗ | 🛑  | onlyOwner |
| └ | toggleSwapping | External ❗ | 🛑  | onlyOwner |
| └ | setWhitelistStatus | External ❗ | 🛑  | onlyOwner |
| └ | checkWhitelist | External ❗ |   |NO❗ |
| └ | _takeTax | Internal 🔒 | 🛑  | |
| └ | _transfer | Internal 🔒 | 🛑  | |
| └ | internalSwap | Internal 🔒 | 🛑  | |
| └ | swapToETH | Internal 🔒 | 🛑  | |
| └ | withdrawStuckETH | External ❗ | 🛑  | onlyOwner |
| └ | withdrawStuckTokens | External ❗ | 🛑  | onlyOwner |
| └ | <Receive Ether> | External ❗ |  💵 |NO❗ |
```

MANUAL REVIEW

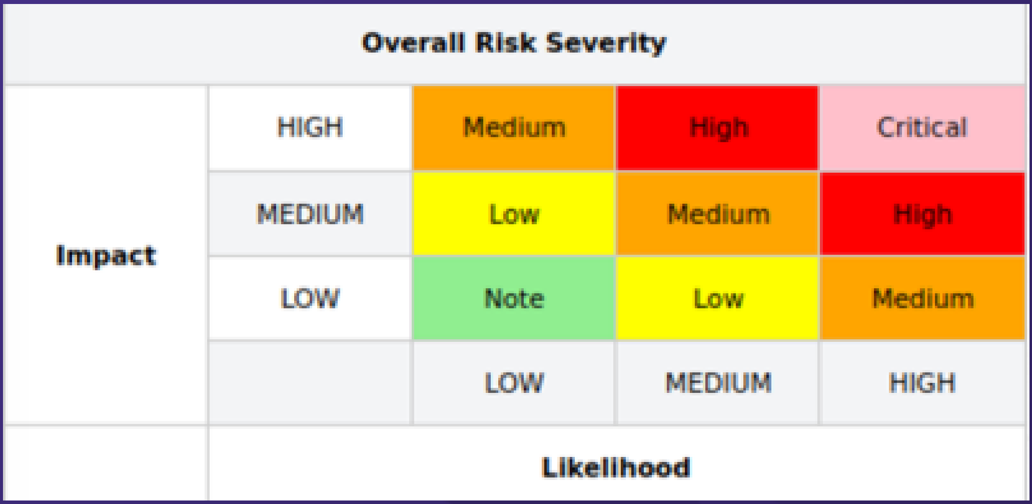
Severity Criteria

Expelee assesses the severity of disclosed vulnerabilities according to methodology based on OWASP standarts.

Vulnerabilities are dividend into three primary risk categroies:
High
Medium
Low

High-level considerations for vulnerabilities span the following key areas when conducting assessments:

- Malicious input handling
- Escalation of privileges
- Arithmetic
- Gas use



Overall Risk Severity				
Impact	HIGH	Medium	High	Critical
	MEDIUM	Low	Medium	High
	LOW	Note	Low	Medium
		LOW	MEDIUM	HIGH
	Likelihood			

FINDINGS

Findings	Severity	Found
High Risk	🔴 High	0
Medium Risk	🟠 Medium	0
Low Risk	🟡 Low	6
Suggestion & discussion	🔵 Informational	1
Gas Optimizations	🟣 Gas Opt.	0

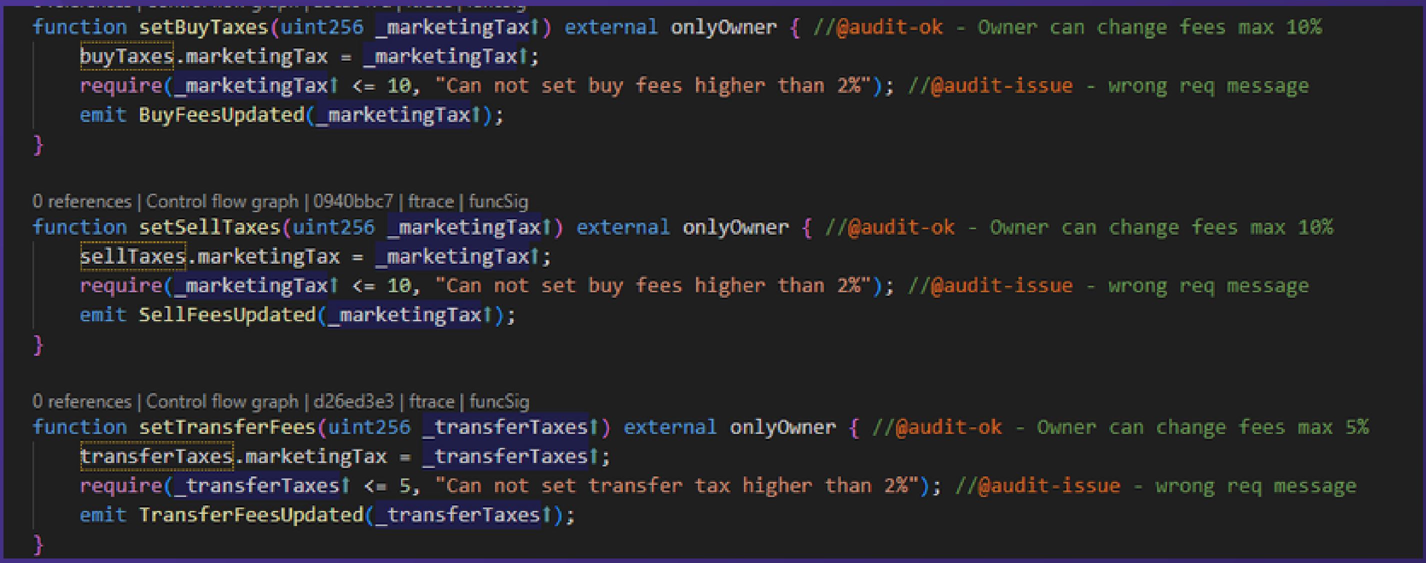
LOW RISK FINDING

Owner can change buy/sell fees max 10% and transfer fee max 5%

Severity : Low

Overview

Functions that allows the owner of the contract to update the buy/sell/transfer fees of the contract. These functions assumes that the input parameters are valid and do not exceed the maximum limit of 10% and transfer fees limit max 5%



```
function setBuyTaxes(uint256 _marketingTax↑) external onlyOwner { //@audit-ok - Owner can change fees max 10%
    buyTaxes.marketingTax = _marketingTax↑;
    require(_marketingTax↑ <= 10, "Can not set buy fees higher than 2%"); //@audit-issue - wrong req message
    emit BuyFeesUpdated(_marketingTax↑);
}

0 references | Control flow graph | 0940bbc7 | ftrace | funcSig
function setSellTaxes(uint256 _marketingTax↑) external onlyOwner { //@audit-ok - Owner can change fees max 10%
    sellTaxes.marketingTax = _marketingTax↑;
    require(_marketingTax↑ <= 10, "Can not set buy fees higher than 2%"); //@audit-issue - wrong req message
    emit SellFeesUpdated(_marketingTax↑);
}

0 references | Control flow graph | d26ed3e3 | ftrace | funcSig
function setTransferFees(uint256 _transferTaxes↑) external onlyOwner { //@audit-ok - Owner can change fees max 5%
    transferTaxes.marketingTax = _transferTaxes↑;
    require(_transferTaxes↑ <= 5, "Can not set transfer tax higher than 2%"); //@audit-issue - wrong req message
    emit TransferFeesUpdated(_transferTaxes↑);
}
```

Recommendation

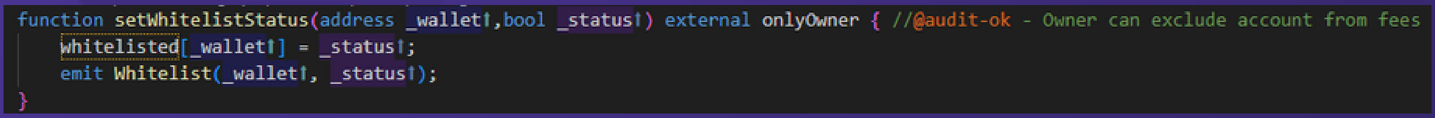
It is recommended to add additional access control measures, such as multi-factor authentication or time-based restrictions, to limit the number of authorized users who can call these functions. *Also check require message.*

LOW RISK FINDING

Owner can exclude accounts from fees

Severity : Low

Overview
Excludes/Includes an address from the collection of fees


```
function setWhitelistStatus(address _wallet,bool _status) external onlyOwner { //@audit-ok - Owner can exclude account from fees
    whitelisted[_wallet] = _status;
    emit Whitelist(_wallet, _status);
}
```

Recommendation
It is recommended to add additional access control measures, such as multi-factor authentication or time-based restrictions, to limit the number of authorized users who can call these functions. The contract owner account is well secured and only accessible by authorized parties.

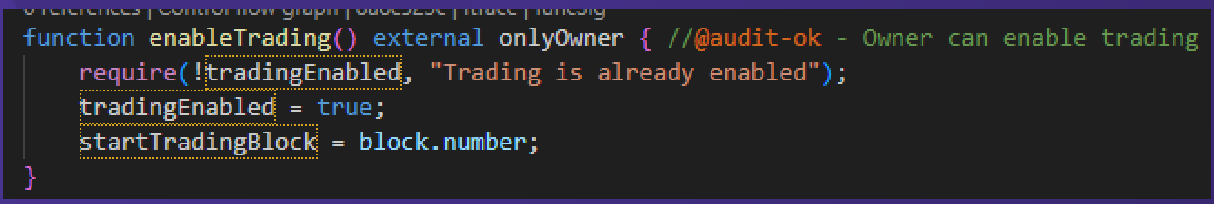
LOW RISK FINDING

Owner can enable trading

Severity : Low

Overview

Function enables trading by setting the **tradingEnabled** true



```
function enableTrading() external onlyOwner { //@audit-ok - Owner can enable trading
    require(!tradingEnabled, "Trading is already enabled");
    tradingEnabled = true;
    startTradingBlock = block.number;
}
```

Recommendation

It is recommended to add additional access control measures, such as multi-factor authentication or time-based restrictions, to limit the number of authorized users who can call these functions. The contract owner account is well secured and only accessible by authorized parties.

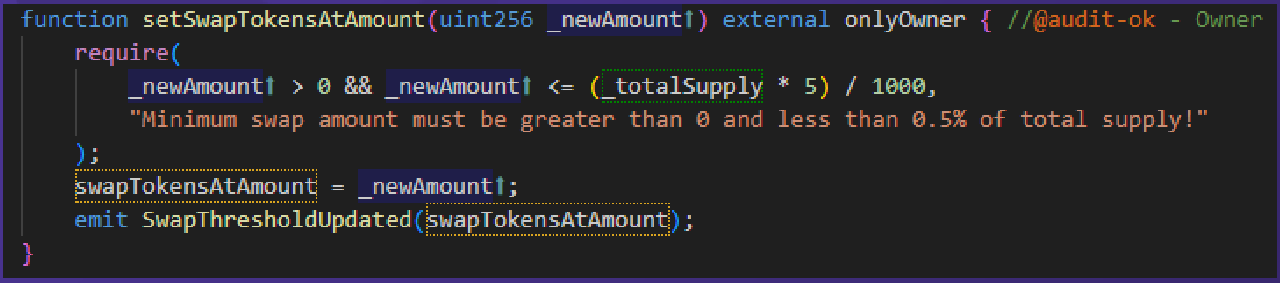
LOW RISK FINDING

Owner can change swap token at amount within reasonable limit

Severity : Low

Overview

setSwapTokensAtAmount function allows the owner of the contract to update the value of **swapTokensAtAmount**.



```
function setSwapTokensAtAmount(uint256 _newAmount) external onlyOwner { //@audit-ok - Owner
    require(
        _newAmount > 0 && _newAmount <= (_totalSupply * 5) / 1000,
        "Minimum swap amount must be greater than 0 and less than 0.5% of total supply!"
    );
    swapTokensAtAmount = _newAmount;
    emit SwapThresholdUpdated(swapTokensAtAmount);
}
```

Recommendation

If the threshold is set too low, it could result in frequent and unnecessary swaps, which would increase gas fees and potentially lead to losses due to slippage. On the other hand, if the threshold is set too high, it could result in liquidity being insufficient to handle large trades, which could negatively impact the token price and liquidity pool. Be ensure that the contract owner account is well secured and only accessible by authorized parties.

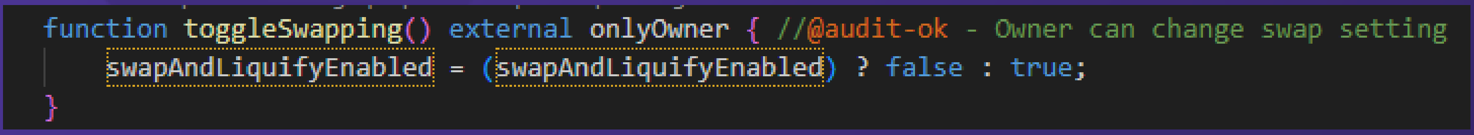
LOW RISK FINDING

Owner can change swap setting

Severity : Low

Overview

Functions allows the contract owner to enable or disable the automatic swapping.



```
function toggleSwapping() external onlyOwner { //@audit-ok - Owner can change swap setting
    swapAndLiquifyEnabled = (swapAndLiquifyEnabled) ? false : true;
}
```

Recommendation

It is recommended to ensure that the contract owner account is well secured and only accessible by authorized parties.

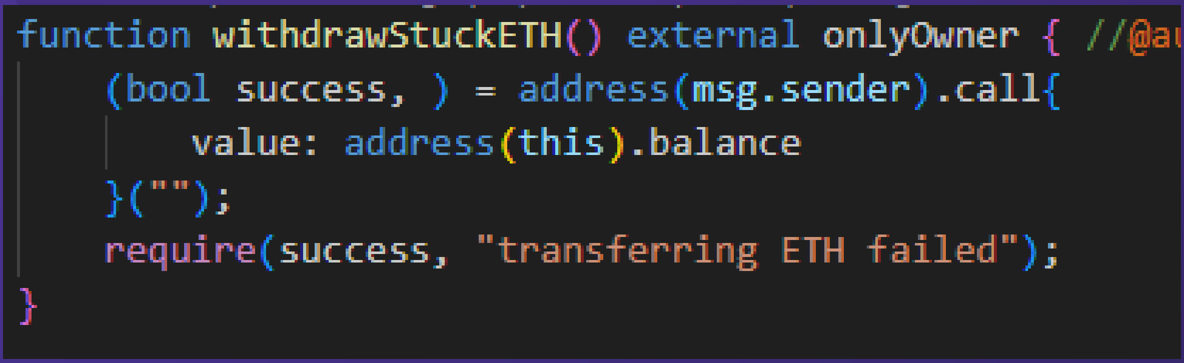
LOW RISK FINDING

Owner can withdraw stuck BNB and stuck tokens

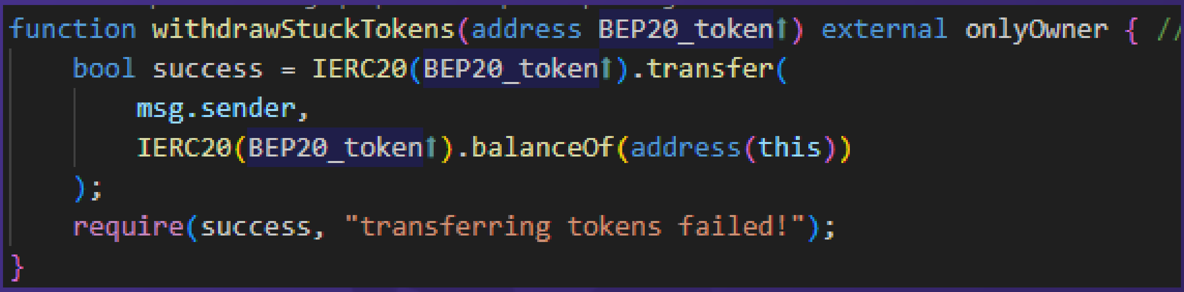
Severity : Low

Overview

withdrawStuckETH() and **withdrawStuckTokens()**, which allow the contract owner to withdraw locked or stuck ETH and ERC20 tokens from the contract. The functions are properly restricted to only be executed by the contract owner.



```
function withdrawStuckETH() external onlyOwner { //@au
    (bool success, ) = address(msg.sender).call{
        value: address(this).balance
    }("");
    require(success, "transferring ETH failed");
}
```



```
function withdrawStuckTokens(address BEP20_token) external onlyOwner { //
    bool success = IERC20(BEP20_token).transfer(
        msg.sender,
        IERC20(BEP20_token).balanceOf(address(this))
    );
    require(success, "transferring tokens failed!");
}
```

Recommendation

While the functions are currently restricted to only be called by the contract owner, it is recommended to consider implementing a more robust access control mechanism. Also Owner can withdraw native token you should add require and check should not receive native tokens.

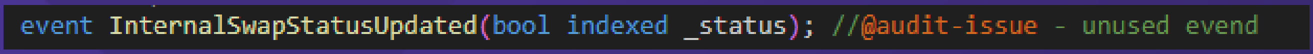
INFORMATIONAL FINDING

Unused usage event

Severity : Informational

Overview

InternalSwapStatusUpdated used unnecessarily. The event is defined but not utilized in any part of the contract's logic



```
event InternalSwapStatusUpdated(bool indexed _status); //@audit-issue - unused evend
```

Recommendation

I recommend removing the unused event **InternalSwapStatusUpdated** from the smart contract. Unused code and functionality can introduce unnecessary complexity and potentially confuse developers and users interacting with the contract. By removing unused code, the contract becomes more streamlined and easier to understand, reducing the risk of introducing bugs or security vulnerabilities. Additionally, removing unused events can help improve gas efficiency by reducing unnecessary storage and computation costs.

ABOUT EXPELEE

Expelee is a product-based aspirational Web3 start-up. Coping up with numerous solutions for blockchain security and constructing a Web3 ecosystem from deal making platform to developer hosting open platform, while also developing our own commercial and sustainable blockchain.

www.expelee.com

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Building the Futuristic Blockchain Ecosystem

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