

Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

MAGGIESIMPSON



TOKEN OVERVIEW

Risk Findings

Severity	Found	
High	0	
Medium	1	
Low	0	
Informational	0	

Centralization Risks

Owner Privileges	Description	
Can Owner Set Taxes >25%?	Not Detected	
Owner needs to enable trading?	Not Detected	
Can Owner Disable Trades ?	Not Detected	
Can Owner Mint?	Not Detected	
Can Owner Blacklist ?	Not Detected	
Can Owner set Max Wallet amount?	Not Detected	
Can Owner Set Max TX amount?	Not Detected	



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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	16 June 2023



CONTRACT DETAILS

Token Name: MaggieSimpson

Symbol: Maggie

Network: Binance Smart Chain

Language: Solidity

Contract Address:

0x90f0Ef7261138152A656c6d014f3fc5A689DAdFA

Total Supply: 420,000,000,000

Owner's Wallet:

0xd0099CC1D1FC0D272478E363B9B0316C9180a903

Deployer's Wallet:

0xd0099CC1D1FC0D272478E363B9B0316C9180a903

Testnet.

https://testnet.bscscan.com/address/0xfabC5c382C3D20e

FE97Ed77Bec8f2e4613f5caac#code



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

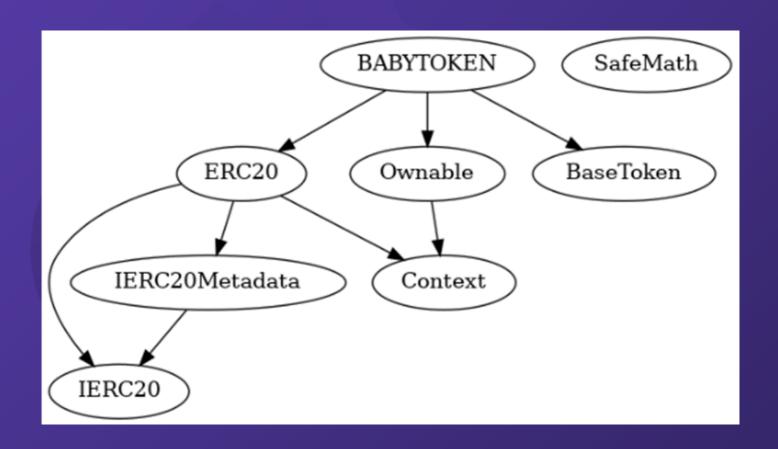
Issues on this level are minor details and warning that can remain unfixed.

Informational

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



INHERITANCE TREES





```
Contract
                          Bases
       | **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
**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 | |
| **IERC20Metadata** | Interface | IERC20 |||
 L | name | External | | NO | |
 L | symbol | External | | NO | |
 | decimals | External | | NO | |
 **Context** | Implementation | |||
 L | msgSender | Internal 🔒 | | |
 L | msgData | Internal 🔒 | | |
**ERC20** | Implementation | Context, IERC20, IERC20Metadata ||
 └ | <Constructor> | Public | | ● | NO | |
 L | name | Public | | NO | |
 L | symbol | Public | | NO | |
 L | decimals | Public | | NO |
 L | totalSupply | Public | | NO | |
 | balanceOf | Public | NO |
 L | transfer | Public | | | NO | |
 L | allowance | Public | | NO | |
 | approve | Public | | | NO | |
 L | transferFrom | Public | | | NO | |
 L | decreaseAllowance | Public | | | NO | |
 📙 transfer | Internal 🔒 | 🛑
 L | mint | Internal 🔒 | 🛑 | |
 L | burn | Internal 🔒 | 🛑 | |
 L | approve | Internal 🔒 | 🛑 | |
 L | beforeTokenTransfer | Internal 🔒 | 🛑 | |
 L | afterTokenTransfer | Internal 🔒 | 🛑 | |
**Ownable** | Implementation | Context |||
 L | owner | Public | | NO | |
 L | transferOwnership | Public | | | onlyOwner |
 L | setOwner | Private 🔐 | 🛑 | |
```



```
**SafeMath** | Library | ||
 L | tryAdd | Internal 🔒 | | |
 L | trySub | Internal 🔒 | ||
 L | tryMul | Internal 🔒 | | |
 L | tryDiv | Internal 🔒 | ||
 L | tryMod | Internal 🔒 | | |
 L | add | Internal 🔒 | | |
 L | sub | Internal 🔒 | ||
 L | mul | Internal 🔒 | ||
 L | div | Internal 🔒 | | |
 L | mod | Internal 🔒 | | |
 L | sub | Internal 🔒 | | |
 L | div | Internal 🔒 | ||
 L | mod | Internal 🔒 | | |
**Clones** | Library | ||
 L | clone | Internal 🔒 | 🛑 | |
 L | cloneDeterministic | Internal 🔒 | 🛑 | |
 | predictDeterministicAddress | Internal 🔒 | | |
 | predictDeterministicAddress | Internal 🔒 | | |
 **Address** | Library | |||
 L | isContract | Internal 🔒 | | |
 L | sendValue | Internal 🔒 | 🛑 | |
 └ | functionCall | Internal 🔒 | ● | |
 L | functionCall | Internal 🔒 | 🛑 | |
 └ | functionCallWithValue | Internal 🔒 | 🛑 | |
 L | functionCallWithValue | Internal 🔒 | 🛑 | |
 | | functionStaticCall | Internal 🔒 | | |
 L | functionStaticCall | Internal 🔒 | | |
 └ | functionDelegateCall | Internal 🔒 | 🛑 | |
 L | functionDelegateCall | Internal 🔒 | 🛑 | |
 L | verifyCallResult | Internal 🔒 | | |
**IUniswapV2Factory** | Interface | ||
 | feeTo | External | | NO | | |
 | | feeToSetter | External | | NO | |
 | getPair | External | NO | |
 | allPairs | External | NO
 L | allPairsLength | External | | NO |
 | createPair | External | | | NO | |
 L | setFeeTo | External | | | NO | |
 └ | setFeeToSetter | External | | ● | NO | |
| **IUniswapV2Router01** | Interface | ||
```



```
L | factory | External |
 | WETH | External | | NO |
 L | addLiquidity | External | | | NO | |
 L | addLiquidityETH | External | | III | NO | |
 | removeLiquidity | External | | | NO | |
 | removeLiquidityETH | External | | | | NO |
 └ | removeLiquidityWithPermit | External | | ● | NO ! |
 └ | removeLiquidityETHWithPermit | External | | ● | NO | |
 | swapExactTokensForTokens | External | | | NO | |
 | swapTokensForExactTokens | External | | | NO | |
 L | swapExactETHForTokens | External | NO |
 | swapTokensForExactETH | External | | | NO |
 L | quote | External | | NO | |
 | getAmountOut | External | NO | |
 L | getAmountIn | External | NO | |
 L | getAmountsOut | External | NO | |
 L | getAmountsIn | External | NO | |
**IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
 | swapExactTokensForTokensSupportingFeeOnTransferTokens | External | | | | NO | |
 | | swapExactTokensForETHSupportingFeeOnTransferTokens | External | | | | NO | |
**IERC20Upgradeable** | 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 |
**IERC20MetadataUpgradeable** | Interface | IERC20Upgradeable |||
L | name | External | | | NO | |
 L | symbol | External | | NO | |
 | decimals | External | | NO | |
| **Initializable** | Implementation | |||
**ContextUpgradeable** | Implementation | Initializable |||
└ | Context init | Internal 🔒 | ● | initializer |
 L | Context_init_unchained | Internal 🔒 | 🛑 | initializer |
 L | msgSender | Internal 🔒 | | |
```



```
| L | msgData | Internal 🔒 | | |
**ERC20Upgradeable** | Implementation | Initializable, ContextUpgradeable,
IERC20Upgradeable, IERC20MetadataUpgradeable |||
 L | ERC20_init | Internal 🔒 | 🌑 | initializer |
 □ ERC20 init unchained | Internal  | ● | initializer |
 | name | Public | NO | |
 L | symbol | Public | | NO |
 L | decimals | Public | | NO | |
 L | totalSupply | Public | | NO | |
 L | balanceOf | Public | | NO |
 L | transfer | Public | | | NO |
 L | allowance | Public | | NO | |
 L | approve | Public | | | NO | |
 L | transferFrom | Public | | | NO |
 | increaseAllowance | Public | | | NO | |
 L | decreaseAllowance | Public | | | NO | |
 📙 transfer | Internal 🔒 | 🛑 | |
 L | mint | Internal 🔒 | 🛑 | |
 L | burn | Internal 🔒 | 🛑 | |
 L | approve | Internal 🔒 | 🛑 | |
 L | beforeTokenTransfer | Internal 🔒 | 🛑 | |
 L | afterTokenTransfer | Internal 🔒 | 🛑 | |
**OwnableUpgradeable** | Implementation | Initializable, ContextUpgradeable |||
 U Ownable init | Internal 🔒 | 🛑 | initializer |
 Ul Ownable init unchained | Internal 🔒 | 🛑 | initializer |
 | owner | Public | | NO | |
 L | transferOwnership | Public | | | onlyOwner |
 L | setOwner | Private 🔐 | 🛑 | |
**IUniswapV2Pair** | Interface | ||
 L | name | External | | NO | |
 L | symbol | External | | NO | |
 L | decimals | External | | NO
 L | totalSupply | External | NO |
 L | balanceOf | External | | NO | |
 | allowance | External | NO | |
 | approve | External | | | NO | |
 L | transfer | External | | | NO | |
 L | transferFrom | External | | | NO | |
 L | DOMAIN SEPARATOR | External | | | NO | |
 L | PERMIT TYPEHASH | External | | | NO | |
 I nonces | External | NO
 L | permit | External | | | NO |
```



```
| MINIMUM LIQUIDITY | External | | | | NO | |
 | factory | External | NO | |
 L | token0 | External | | NO |
 L | token1 | External | | NO
 | getReserves | External | NO | |
 | price0CumulativeLast | External | NO | |
 price1CumulativeLast | External | NO | |
 L | kLast | External | | | NO |
 └ | mint | External | | ● | NO |
 L | burn | External | | | NO |
 └ | swap | External | | ● | NO |
 └ | skim | External | | ● |NO |
 L | sync | External | | | NO | |
 L | initialize | External | | | NO | |
**SafeMathInt** | Library | ||
 L | mul | Internal 🔒 | | |
 L | div | Internal 🔒 | ||
 L | sub | Internal 🔒 | | |
 L | add | Internal 🔒 | ||
 L | abs | Internal 🔒 | ||
 L | toUint256Safe | Internal 🔒 | | |
**SafeMathUint** | Library | ||
 L | toInt256Safe | Internal 🔒 | | |
**IterableMapping** | Library | |||
 L | get | Internal 🔒 | | |
 L | getIndexOfKey | Internal 🔒 | | |
 L | getKeyAtIndex | Internal 🔒 | | |
 L | size | Internal 🔒 | ||
 L | set | Internal 🔒 | 🛑 | |
 | remove | Internal 🔒 | 🛑 | |
**DividendPayingTokenInterface** | Interface | |||
 | dividendOf | External | NO | |
 | withdrawDividend | External | | | NO | |
**DividendPayingTokenOptionalInterface** | Interface | |||
 | withdrawableDividendOf | External | NO | | |
 | withdrawnDividendOf | External | NO | |
 | accumulativeDividendOf | External | | NO | |
**DividendPayingToken** | Implementation | ERC20Upgradeable, OwnableUpgradeable,
DividendPayingTokenInterface, DividendPayingTokenOptionalInterface ||
 └ | DividendPayingToken init | Internal 🔒 | ● | initializer |
```



```
| withdrawDividend | Public | | | NO | |
 📙 withdrawDividendOfUser | Internal 🔒 | 🛑 | |
L | dividendOf | Public | | NO | |
 | withdrawableDividendOf | Public | NO | |
 | withdrawnDividendOf | Public | NO | |
 | accumulativeDividendOf | Public | NO | |
 L | _transfer | Internal 🔒 | 🛑 | |
 L | mint | Internal 🔒 | 🛑 | |
 L | burn | Internal 🔒 | 🛑 | |
L | setBalance | Internal 🔒 | 🛑 | |
**BABYTOKENDividendTracker** | Implementation | OwnableUpgradeable,
DividendPayingToken |||
└ | initialize | External | | ● | initializer |
 L | transfer | Internal 🔒 | | |
 | withdrawDividend | Public | NO | |
 L | excludeFromDividends | External | | | | onlyOwner |
 | isExcludedFromDividends | Public | NO | |
 └ | updateClaimWait | External | | ● | onlyOwner |
 | getLastProcessedIndex | External | NO |
 | getNumberOfTokenHolders | External | NO | |
 L | getAccount | Public | | NO | |
 | getAccountAtIndex | Public | NO | |
 L | canAutoClaim | Private 🔐 | ||
 └ | setBalance | External | | ● | onlyOwner |
 | process | Public | | | NO | |
 | processAccount | Public | | | | onlyOwner |
**BaseToken** | Implementation | |||
**BABYTOKEN** | Implementation | ERC20, Ownable, BaseToken |||
| <Receive Ether> | External | | | NO | |
 L | excludeFromFees | External | | | onlyOwner |
 L | excludeMultipleAccountsFromFees | External | | | | onlyOwner |
 └ | setMarketingWallet | External | | ● | onlyOwner |
 └ | setTokenRewardsFee | External | | ● | onlyOwner |
 | setLiquiditFee | External | | | onlyOwner |
 L | setMarketingFee | External | | | onlyOwner |
 💄 setAutomatedMarketMakerPair | Private 🔐 | 🛑 | |
 | getClaimWait | External | NO | |
```



```
L getMinimumTokenBalanceForDividends | External | NO | |
 L | getTotalDividendsDistributed | External |
 | isExcludedFromFees | Public | NO | | | |
 | withdrawableDividendOf | Public | NO |
 | dividendTokenBalanceOf | Public | | NO |
 | excludeFromDividends | External | | | | onlyOwner |
 isExcludedFromDividends | Public | NO | |
 | getAccountDividendsInfo | External | NO | |
 | getAccountDividendsInfoAtIndex | External | NO | |
 processDividendTracker | External | | | NO |
 L | claim | External | | NO |
 | getLastProcessedIndex | External | NO | |
 | getNumberOfDividendTokenHolders | External | NO | |
 L | transfer | Internal 🔒 | 🛑 | |
 L | swapAndSendToFee | Private 🔐 | 🛑 | |
 L | swapAndLiquify | Private 🔐 | 🛑 | |
 L | swapTokensForEth | Private 🔐 | 🛑 | |
 L | swapTokensForCake | Private 🔐 | 🛑 | |
 L | addLiquidity | Private 🔐 | 🛑 | |
| L | swapAndSendDividends | Private 🔐 | 🛑 | |
### Legend
| Symbol | Meaning |
|:-----
     | Function can modify state |
       | Function is payable |
```



TESTNET VERSION

Adding Liquidity Tx: https://testnet.bscscan.com/tx/0xf3f84c81f8a5f85164662ea9f036cc575e671541d4 55c0b6d837a7dcc20b0b
Buying from a fee excluded wallet Tx (0% tax): https://testnet.bscscan.com/tx/0x1a622b3df0a7534fc5dd531283c22d0eff04cbc49 53afd8991a334e8070fd5
Selling from a fee excluded wallet \(\subseteq \) Tx (0% tax): https://testnet.bscscan.com/tx/0x6df98d477e7982bc266ff80ae2edcd54d3965ce7 b5364e72d92249a50ccdbc
Transferring using a fee excluded wallet Tx (0% tax): https://testnet.bscscan.com/tx/0x34986db3e7b0b953e11fd4502edc5a269c313334944268b4bbed04cb3a2d354
Buying from a regular wallet



https://testnet.bscscan.com/tx/0x406b1b1cfb6976f8ea06f125b36a34d679341b4035a fbacb849fed63ce674d75



TESTNET VERSION

Setting from a regular wall	let	
Tx (0-25% tax):		
https://testnet.bscscan.co	om/tx/0x68eacb93ddf640863bdb3588f7f256	c4cef8e977fe1
e3c74705ca5a79d9df27f		

Transferring a regular wallet Tx (0-25%):

https://testnet.bscscan.com/tx/0x3f8b608660387c29fbc0e67cfde8060bfbebc449bb 928c344da8f4f65c99485f

Internal swap (marketing BNB, Auto-liquidity, rewards distribution)



https://testnet.bscscan.com/tx/0x68eacb93ddf640863bdb3588f7f256c4cef8e977fe1 e3c74705ca5a79d9df27f



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			



MEDIUM RISK FINDING

Excessive Fees

Category: Centralization

Status: Open

Severity: Medium

Overview:

Owner is able to set up to 25% tax for buy/sell/transfers separately.

```
function setTokenRewardsFee(uint256 value) external
onlyOwner {
   tokenRewardsFee = value;
   totalFees =
tokenRewardsFee.add(liquidityFee).add(marketingFee);
   require(totalFees <= 25, "Total fee is over 25%");
}

function setLiquiditFee(uint256 value) external
onlyOwner {
   liquidityFee = value;
   totalFees =
tokenRewardsFee.add(liquidityFee).add(marketingFee);
   require(totalFees <= 25, "Total fee is over 25%");
}</pre>
```



MEDIUM RISK FINDING

```
function setMarketingFee(uint256 value) external
onlyOwner {
  marketingFee = value;
  totalFees =
  tokenRewardsFee.add(liquidityFee).add(marketingFee);
  require(totalFees <= 25, "Total fee is over 25%");
}</pre>
```

Suggestion:

Ensure that fees follow bellow scheme, this amounts are suggested by pinksale safu criteria:

0 <= buy fees <= 10%

0 <= sell fees <= 10%

0 <= transfer fees <= 10%



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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