

Smart Contract Audit

FOR

Spare Inu

DATED: 5 May 23'



AUDIT SUMMARY

Project name - Spare Inu

Date: 5 May, 2023

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	0
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/token/0xa92ff917437835 91494f80d947cd47d73ae6ffed



Token Information

Token Name: Spare Inu

Token Symbol: Spare Inu

Decimals: 18

Token Supply: 1,000,000,000

Token Address:

0xd8E5E55838c6FD402464F5E085ea7a9659fa835D

Checksum:

36552580df187046a7c9f54d1f604aee2936f4e8

Owner:

0x3862f88396a0b50Db96B8beFF0d8A4B2Af3E5702 (at time of writing the audit)

Deployer:

0xf24539CfD9dFfBD40b78beEd25eDb40ad4b3306A



TOKEN OVERVIEW

Fees:

Buy Fees: up to 10%

Sell Fees: up to 10%

Transfer Fees: up to 10%

Fees Privilege: Owner

Ownership: Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: Yes

Blacklist: No

Other Privileges: updating fee - excluding from fees -

including in fees



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-byline 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





CLASSIFICATION OF RISK

Severity

- 🔷 Critical
- High-Risk
- Medium-Risk
- Low-Risk
- Gas Optimization
 /Suggestion

Description

These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.

A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.

A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.

A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.

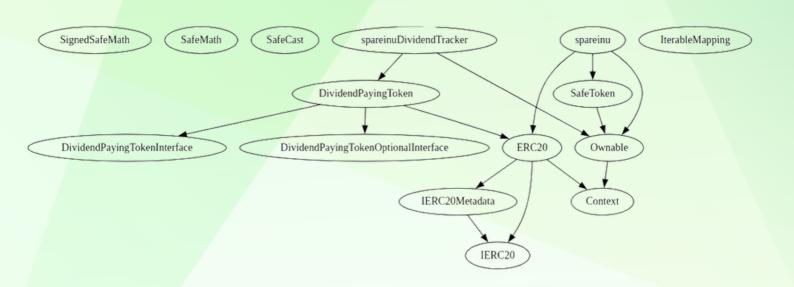
A vulnerability that has an informational character but is not affecting any of the code.

Findings

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



INHERITANCE TREE





POINTS TO NOTE

- Owner is not able to set buy/sell/transfer taxes over
 10%
- Owner is not able to set a max buy/transfer/wallet/sell amount
- Owner is not able to blacklist an arbitrary wallet
- Owner is not able to disable trades
- Owner is not able to mint new tokens



```
Bases
Contract |
            Type
       **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
**IUniswapV2Router01** | Interface | |||
| factory | External | NO | |
WETH | External | | | NO | |
| addLiquidity | External | | | NO | |
| addLiquidityETH | External | | 1 NO | |
removeLiquidity | External | | NO | |
 removeLiquidityWithPermit | External | | NO | |
| removeLiquidityETHWithPermit | External | | | NO | |
 L | swapExactTokensForTokens | External | | | NO |
L | swapTokensForExactTokens | External | | | NO |
L | swapExactTokensForETH | External | | | NO |
 | | swapETHForExactTokens | External | | | | | | | | | | | | | | |
L | quote | External | | NO | |
L | getAmountOut | External | | NO | |
L | getAmountIn | External | | | NO | |
L | getAmountsOut | External | | NO | |
L | getAmountsIn | External | | NO | |
**IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
□ | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External | | ● | NO | |
□ | swapExactTokensForTokensSupportingFeeOnTransferTokens | External | | ● | NO | |
| swapExactETHForTokensSupportingFeeOnTransferTokens | External | NO | |
| **IUniswapV2Factory** | Interface | |||
L | feeTo | External | | NO | |
L | feeToSetter | External | | NO | |
L | getPair | External | | NO | |
L | allPairs | External | | NO | |
L | allPairsLength | External | | NO | |
L | setFeeTo | External | | NO | |
| **SignedSafeMath** | Library | |||
```



```
L | mul | Internal 🔒 | | |
 L | div | Internal 🔒 | ||
 L | sub | Internal | | | |
 L | add | Internal 🔒 | | |
| **SafeMath** | Library | |||
 L | tryAdd | Internal 🔒 | | |
 L | trySub | Internal | | | |
 L | tryMul | Internal 🔒 | | |
 └ | tryDiv | Internal 🔒 | ||
 L | tryMod | Internal | | | |
 L | add | Internal 🔒 | | |
 L | sub | Internal 🔒 | | |
 L | mul | Internal 🔒 | ||
 └ | div | Internal 🔒 | | |
 L | mod | Internal 🔒 | | |
 └ | mod | Internal 🔒 | ||
**SafeCast** | Library | |||
 └ | toUint128 | Internal 🔒 | | |
 L | toUint96 | Internal 🔒 | | |
 L | toUint64 | Internal 🔒 | | |
 L | toUint32 | Internal 🔒 | | |
 L | toUint16 | Internal 🔒 | | |
 └ | toUint8 | Internal 🔓 | | |
└ | toInt128 | Internal 🔒 | ||
 └ | toInt64 | Internal 🔒 | ||
 └ | toInt32 | Internal 🔒 | ||
 └ | toInt8 | Internal 🔒 | | |
 L | toInt256 | Internal 🔒 | | |
| **Context** | Implementation | |||
| L | msgSender | Internal 🔒 | ||
 L | msgData | Internal 🔒 | ||
| **IERC20** | Interface | |||
 L | totalSupply | External | | | NO | |
| L | balanceOf | External | | NO | |
```



```
L | transfer | External | | NO | |
 | allowance | External | NO | |
 | approve | External | | | NO | |
 L | transferFrom | External | | | NO | |
**IERC20Metadata** | Interface | IERC20 |||
| L | name | External | | NO | |
L | symbol | External | | NO | |
| L | decimals | External | | NO | |
**ERC20** | Implementation | Context, IERC20, IERC20Metadata ||
 Constructor> | Public | | NO | |
 I 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! |
 L | decreaseAllowance | Public | | | NO | |
 └ | transfer | Internal 🔓 | 🛑 | |
 └ | mint | Internal 🔒 | ● | |
 L | approve | Internal 🔒 | 🛑 | |
| L | beforeTokenTransfer | Internal 🔒 | 🛑 | |
L | afterTokenTransfer | Internal 🔒 | 🛑 | |
| **Ownable** | Implementation | Context |||
 L | owner | Public | | NO | |
L | renounceOwnership | Public | | | onlyOwner |
L | transferOwnership | Public ! | • | onlyOwner |
 L | setOwner | Private | | | |
**IterableMapping** | Library | |||
└ | get | Internal 🔒 | | |
L | getIndexOfKey | Internal 🔒 | | |
 | L | set | Internal 🔒 | 🛑 | |
```



```
| L | remove | Internal | | | | | |
**DividendPayingTokenOptionalInterface** | Interface | ||
 | withdrawableDividendOf | External | | NO | |
 | withdrawnDividendOf | External | NO | |
 L | accumulative Dividend Of | External | | | NO | |
**DividendPayingTokenInterface** | Interface | |||
L | dividendOf | External | | NO | |
| L | distributeDividends | External | | 1 | NO | |
| withdrawDividend | External | | | NO | |
**DividendPayingToken** | Implementation | ERC20, DividendPayingTokenInterface,
DividendPayingTokenOptionalInterface |||
 L | < Receive Ether > | External | | | | | | | | | | | | |
 | withdrawDividend | Public | | | NO | |
 L | dividendOf | Public | | NO | |
 L | withdrawableDividendOf | Public | | NO | |
 | withdrawnDividendOf | Public | NO | |
 L | accumulativeDividendOf | Public | | NO | |
 L | transfer | Internal 🔒 | 🛑 | |
 └ setBalance | Internal 🔒 | ● ||
**spareinuDividendTracker** | Implementation | DividendPayingToken, Ownable |||
L | < Constructor > | Public | Dividend Paying Token |
 L | transfer | Internal | | | |
 L | withdrawDividend | Public | | NO | |
 L | excludeFromDividends | External | | | onlyOwner |
 L | updateClaimWait | External | | | onlyOwner |
 L | getLastProcessedIndex | External | | NO | |
L | getNumberOfTokenHolders | External | NO | |
 L | getAccount | Public | | NO | |
 L | getAccountAtIndex | Public | | NO | |
 L | canAutoClaim | Private 🦸 | | |
 L | process | Public | | | NO | |
L | processAccount | Public | | | onlyOwner |
```



```
**SafeToken** | Implementation | Ownable |||
| withdraw | External | | | NO | |
| withdrawBNB | External | | | NO | |
**spareinu** | Implementation | ERC20, Ownable, SafeToken ||
| setFee | Public | onlyOwner |
L | excludeMultipleAccountsFromFees | Public | | • | onlyOwner |
L | setAutomatedMarketMakerPair | Public ! | • | onlyOwner |
L | setSWapTokensAtAmount | Public | | | onlyOwner |
└ | setAutomatedMarketMakerPair | Private 🔐 | ● | |
L | updateGasForProcessing | Public | | • | onlyOwner |
L | getClaimWait | External | | NO | |
L | getTotalDividendsDistributed | External | | NO | |
L | isExcludedFromFees | Public | | NO |
L | isExcludedFromMaxTx | Public | | NO |
| withdrawableDividendOf | Public | NO | |
L | dividendTokenBalanceOf | Public | | NO | |
L | getAccountDividendsInfo | External | | | NO | |
L | getAccountDividendsInfoAtIndex | External | | NO | |
L | processDividendTracker | External | | NO | |
L | claim | External | | | NO | |
L | getLastProcessedIndex | External | | NO | |
L | getNumberOfDividendTokenHolders | External | | NO | |
| excludeFromDividends | External | | | onlyOwner |
L | transfer | Internal 🔒 | 🛑 | |
└ | swapAndLiquify | Private 🔐 | 🌑 | lockTheSwap |
L | swapTokensForBnb | Private 🦸 | 🛑 | |
L | addLiquidity | Private 🔐 | 🛑 | |
```



Legend



STATIC ANALYSIS

```
External calls:
- mapked_inglfy(contractFokenBalance) (contracts/GFT.sol#2080)
- mapked_inglfy(contractFokenBalance) (contracts/GFT.sol#2080)
- market_ingle_let_transfer(market_ingle.contracts/GFT.sol#2080)
- market_ingle_let_transfer(market_ingle.contracts/GFT.sol#2080)
- market_ingle_let_transfer(market_ingle.contracts/GFT.sol#2080)
- market_ingle_let_transfer(market_ingle.contracts/GFT.sol#2180)
- market_ingle_let_transfer(market_ingle.contracts/GFT.sol#2180)
- market_ingle_let_transfer(market_ingle.contracts/GFT.sol#2180)
- market_ingle_let_transfer(market_ingle.contracts/GFT.sol#2180)
- super_transfer(from_address(this)_fees) (contracts/GFT.sol#2180)
- super_transfer(from_address(this)_fees) (contracts/GFT.sol#2020)
- super_transfer(from_to,monut) (contracts/GFT.sol#2020)
- processol_indenfrace(from_to,monut) (contracts/GFT.sol#2020)
- market_ingle_let_transfer(market_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle_ingle
```

Result => A static analysis of contract's source code has been performed using slither,

No major issues were found in the output



FUNCTIONAL TESTING

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

All the functionalities have been tested, no issues were found

1- Adding liquidity (passed):

https://testnet.bscscan.com/tx/0x84a76510bfa1dde78153ccf80b8feea41e747883c 7e095a3035e9a9863ffb6f1

2- Buying when excluded (0% tax) (passed):

https://testnet.bscscan.com/tx/0x6363a1fda181b235d8aa8fb67f4a0a871134d7b83c968ab01b881407962ff3c0

3- Selling when excluded (0% tax) (passed):

https://testnet.bscscan.com/tx/0x9c7f915d14e26c6c17ff21834e5a406d747b45a3149f5519c84432b2e9deb7e9

4- Transferring when excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0xad192abd79112daa9e14c05323eabdbc320731d53e47bbf987ebeca7f15550a8

5- Buying when not excluded from fees (up to 10% tax) (passed):

https://testnet.bscscan.com/tx/0x934fbc7e0f162818ac902c9a1eb2c3ffa00505acf3 966a36f21476149329eb3f

6- Selling when not excluded from fees (up to 0% tax) (passed):

https://testnet.bscscan.com/tx/0xf13cdd3bb8abcf431dcd0025309e611fe96e2782e 5569d2d85024e7f6495676a



FUNCTIONAL TESTING

7- Transferring when not excluded from fees (up to 10% tax)(passed):

https://testnet.bscscan.com/tx/0x9c4f1d351f7dce24fedad425a66c36b 91fdbf470b4f25eb37972f38aae198939

8- Internal swap (passed):

Auto-liquidty & Reflections & fee wallets receiving BNB

https://testnet.bscscan.com/tx/0xf13cdd3bb8abcf431dcd0025309e611fe96e2782e5569d2d85024e7f6495676a



MANUAL TESTING

Centralization – LP tokens sent to an EOA

Severity: Medium Function: addLiquidity Status: Not Resolved

Overview:

The contract owner's wallet (an EOA or Externally Owned Account) receives auto-generated liquidity pool share tokens. Over time, these tokens will accumulate and could potentially be used to remove a significant portion of liquidity, negatively impacting the token's liquidity and price.

function addLiquidity(uint256 tokenAmount, uint256 ethAmount) private {

```
// add the liquidity
uniswapV2Router.addLiquidityETH{value: ethAmount}(
   address(this),
   tokenAmount,
   0, // slippage is unavoidable
   0, // slippage is unavoidable
   owner(),
   block.timestamp
);
```

Recommendation:

}

To mitigate this issue, consider the following options:

- · Burn new LP tokens.
- · Lock new LP tokens.
- Renounce ownership of the contract, which would result in LP tokens being burned automatically.



MANUAL TESTING

Logical – 0 Swapthreshold can disable some sells and transfers or increase slippage if is set to a high value

Severity: Low

Function: setSWapTokensAtAmount - swapAndLiquify

Lines: 2188

Status: Not Resolved

Overview:

Setting the **swapTokensAtAmount** to 0 can disable some sell/transfer operations if the contract's token balance is 0. This is because swapAndLiquify does not check whether the contract token balance is greater than 0 and attempts to swap 0 tokens for BNB. Additionally, setting the swap threshold to a very high value can increase slippage on sell/transfer operations, potentially exposing traders' tokens to front-runner bots.

```
function setSWapTokensAtAmount(uint256 _newAmount) public onlyOwner {
   swapTokensAtAmount = _newAmount;
}
```

Recommendation:

there are several ways to mitigate this issue

- Ensure that the new swap threshold cannot be set to an unreasonably low or high value.
- Renounce ownership of the contract, which would prevent the swap threshold from being changed arbitrarily.



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