auditace.tech

AuditAce
FROM INCEPTION TO SUCCESS

# Smart Contract Audit

FOR

# SHIKOKUCEO

DATED : 08 Mar 23'

# AUDIT SUMMARY

**Project name** – SHIKOKUCEO

**Date**: 08 March, 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 | 0 | 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 done on BSC Test network, each test has its transaction has attached to it.

**3- Slither : Static Analysis**

**Testnet Link:** all tests were done using this contract, tests are done on BSC Testnet

https://testnet.bscscan.com/token/0xe8472dae5ff7a0db66bf891fa68656de958f87f0

# Token Information

**Token Name** : SHIKOKUCEO

**Token Symbol**: SUCEO

**Decimals:** 9

**Token Supply**: 420,000,000,000,000,000

**Token Address:**
0x828AbCca698a2988Fad35590fb266D5c85732fD5

**Checksum:**
3c5ca3afa9cb0ff79b203c27d40e3d06f08b9bc9

**Owner:**
0xf153B0a6FbB4a091320b3d8a6A7F14a5e4Ef3eB3
**(at time of writing the audit)**

# TOKEN OVERVIEW

**Fees:**

Buy Fees: 10%

Sell Fees: 10%

Transfer Fees: 10%

**Fees Privilige:** None

**Ownership** : Owned

**Minting:** No mint function

**Max Tx Amount/ Max Wallet Amount:** No

**Blacklist:** No

**Other Priviliges**: including and excluding from fees and rewards

# 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

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

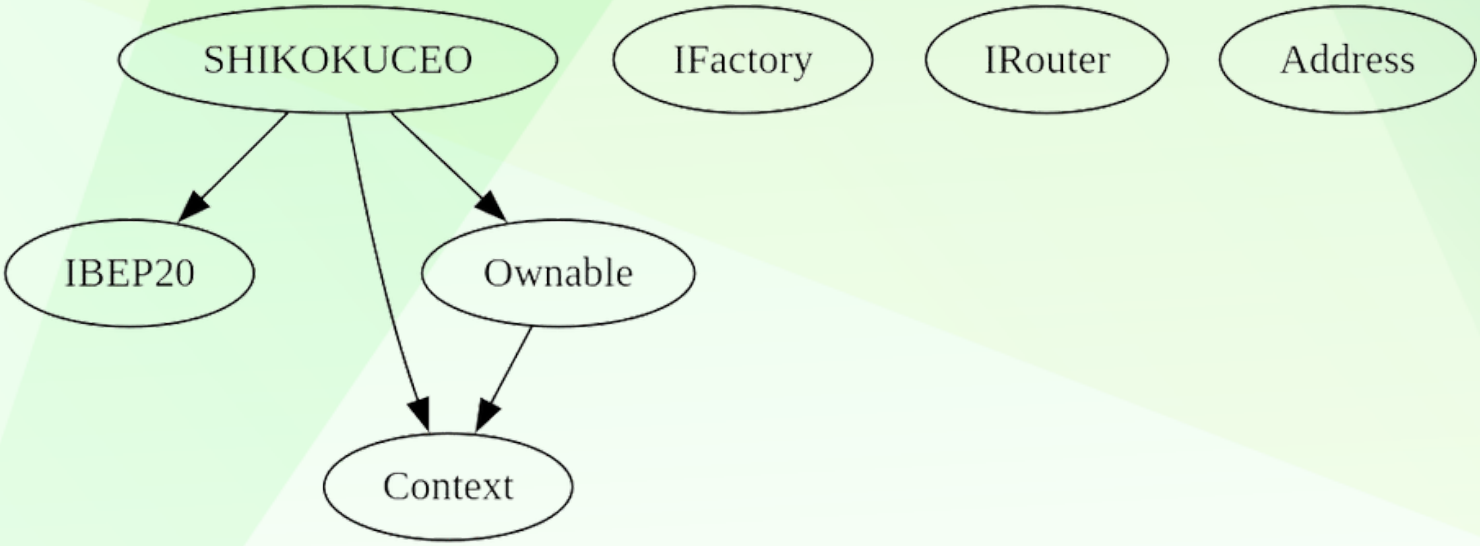
# CLASSIFICATION OF RISK

| 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 | 0 |
| Low-Risk | 1 |
| Gas Optimization / Suggestions | 0 |

# INHERITANCE TREE



# POINTS TO NOTE

- Owner is not able to change fees (10% for buy/sell/transfers static)
- Owner is not able to set max buy/sell/transfer/hold 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

# CONTRACT ASSESMENT

| Contract | Type | Bases | | |
|:----------:|:-------------------:|:----------------:|:----------------:|:---------------:|
| └ | **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
| | | | | |
| **IBEP20** | Interface | | | |
| └ | totalSupply | External ❗ | | NO❗ |
| └ | balanceOf | External ❗ | | NO❗ |
| └ | transfer | External ❗ | 🛑 | NO❗ |
| └ | allowance | External ❗ | | NO❗ |
| └ | approve | External ❗ | 🛑 | NO❗ |
| └ | transferFrom | External ❗ | 🛑 | NO❗ |
| | | | | |
| **Context** | Implementation | | | |
| └ | _msgSender | Internal 🔒 | | |
| └ | _msgData | Internal 🔒 | | |
| | | | | |
| **Ownable** | Implementation | Context | | |
| └ | <Constructor> | Public ❗ | 🛑 | NO❗ |
| └ | owner | Public ❗ | | NO❗ |
| └ | renounceOwnership | Public ❗ | 🛑 | onlyOwner |
| └ | _setOwner | Private 🔐 | 🛑 | |
| | | | | |
| **IFactory** | Interface | | | |
| └ | createPair | External ❗ | 🛑 | NO❗ |
| | | | | |
| **IRouter** | Interface | | | |
| └ | factory | External ❗ | | NO❗ |
| └ | WETH | External ❗ | | NO❗ |
| └ | addLiquidityETH | External ❗ | 💵 | NO❗ |
| └ | swapExactTokensForETHSupportingFeeOnTransferTokens | External ❗ | 🛑 | NO❗ |
| | | | | |
| **Address** | Library | | | |
| └ | sendValue | Internal 🔒 | 🛑 | |
| | | | | |
| **SHIKOKUCEO** | Implementation | Context, IBEP20, Ownable | | |
| └ | <Constructor> | Public ❗ | 🛑 | NO❗ |
| └ | name | Public ❗ | | NO❗ |
| └ | symbol | Public ❗ | | NO❗ |
| └ | decimals | Public ❗ | | NO❗ |
| └ | totalSupply | Public ❗ | | NO❗ |
| └ | balanceOf | Public ❗ | | NO❗ |
| └ | allowance | Public ❗ | | NO❗ |

# CONTRACT ASSESMENT

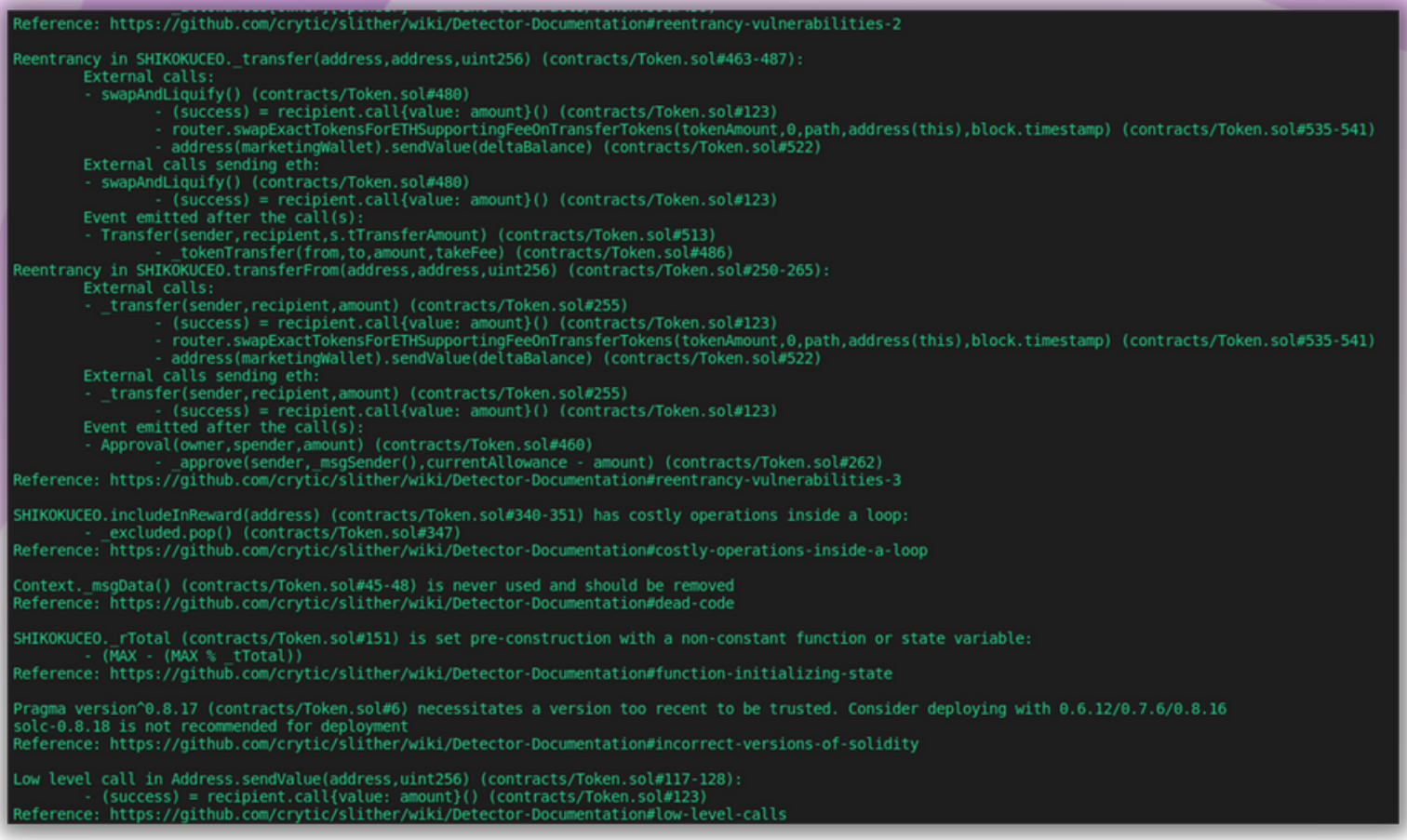
| └ | approve | Public ❗ | 🛑 | NO❗ |
| --- | --- | --- | --- | --- |
| └ | transferFrom | Public ❗ | 🛑 | NO❗ |
| └ | increaseAllowance | Public ❗ | 🛑 | NO❗ |
| └ | decreaseAllowance | Public ❗ | 🛑 | NO❗ |
| └ | transfer | Public ❗ | 🛑 | NO❗ |
| └ | isExcludedFromReward | Public ❗ | | NO❗ |
| └ | reflectionFromToken | Public ❗ | | NO❗ |
| └ | tokenFromReflection | Public ❗ | | NO❗ |
| └ | excludeFromReward | Public ❗ | 🛑 | onlyOwner |
| └ | includeInReward | External ❗ | 🛑 | onlyOwner |
| └ | excludeFromFee | Public ❗ | 🛑 | onlyOwner |
| └ | includeInFee | Public ❗ | 🛑 | onlyOwner |
| └ | isExcludedFromFee | Public ❗ | | NO❗ |
| └ | _reflectRfi | Private 🔐 | 🛑 | |
| └ | _takeMarketing | Private 🔐 | 🛑 | |
| └ | _getValues | Private 🔐 | | |
| └ | _getTValues | Private 🔐 | | |
| └ | _getRValues | Private 🔐 | | |
| └ | _getRate | Private 🔐 | | |
| └ | _getCurrentSupply | Private 🔐 | | |
| └ | _approve | Private 🔐 | 🛑 | |
| └ | _transfer | Private 🔐 | 🛑 | |
| └ | _tokenTransfer | Private 🔐 | 🛑 | |
| └ | swapAndLiquify | Private 🔐 | 🛑 | lockTheSwap |
| └ | swapTokensForBNB | Private 🔐 | 🛑 | |
| └ | bulkExcludeFee | External ❗ | 🛑 | onlyOwner |
| └ | <Receive Ether> | External ❗ | 💵 | NO❗ |

| Symbol | Meaning |
| --- | --- |
| 🛑 | Function can modify state |
| 💵 | Function is payable |

# TOKEN DISTRIBUTION

It should be noted that the owner currently holds 100% of the total supply. However, information about the distribution of these tokens is not available, and it is recommended that investors exercise caution when considering this aspect.

# STATIC ANALYSIS



```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-2

Reentrancy in SHIKOKUCEO._transfer(address,address,uint256) (contracts/Token.sol#463-487):
        External calls:
        - swapAndLiquify() (contracts/Token.sol#480)
                - (success) = recipient.call{value: amount}() (contracts/Token.sol#123)
                - router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),block.timestamp) (contracts/Token.sol#535-541)
                - address(marketingWallet).sendValue(deltaBalance) (contracts/Token.sol#522)
        External calls sending eth:
        - swapAndLiquify() (contracts/Token.sol#480)
                - (success) = recipient.call{value: amount}() (contracts/Token.sol#123)
        Event emitted after the call(s):
        - Transfer(sender,recipient,s.tTransferAmount) (contracts/Token.sol#513)
                - _tokenTransfer(from,to,amount,takeFee) (contracts/Token.sol#486)
Reentrancy in SHIKOKUCEO.transferFrom(address,address,uint256) (contracts/Token.sol#250-265):
        External calls:
        - _transfer(sender,recipient,amount) (contracts/Token.sol#255)
                - (success) = recipient.call{value: amount}() (contracts/Token.sol#123)
                - router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),block.timestamp) (contracts/Token.sol#535-541)
                - address(marketingWallet).sendValue(deltaBalance) (contracts/Token.sol#522)
        External calls sending eth:
        - _transfer(sender,recipient,amount) (contracts/Token.sol#255)
                - (success) = recipient.call{value: amount}() (contracts/Token.sol#123)
        Event emitted after the call(s):
        - Approval(owner,spender,amount) (contracts/Token.sol#460)
                - _approve(sender,_msgSender(),currentAllowance - amount) (contracts/Token.sol#262)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3

SHIKOKUCEO.includeInReward(address) (contracts/Token.sol#340-351) has costly operations inside a loop:
        - _excluded.pop() (contracts/Token.sol#347)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#costly-operations-inside-a-loop

Context._msgData() (contracts/Token.sol#45-48) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

SHIKOKUCEO._rTotal (contracts/Token.sol#151) is set pre-construction with a non-constant function or state variable:
        - (MAX - (MAX % _tTotal))
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#function-initializing-state

Pragma version^0.8.17 (contracts/Token.sol#6) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.18 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Low level call in Address.sendValue(address,uint256) (contracts/Token.sol#117-128):
        - (success) = recipient.call{value: amount}() (contracts/Token.sol#123)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
```

**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/0xd2183cb1416d7478c523ca038f45762e79ff4cad266f0e06135e884b8300cc13

**2- Buying when excluded (0% tax) (passed):**
https://testnet.bscscan.com/tx/0x972b9cf1edc6debee2b0b12fb2da50e766e425f76da9461cae09241a52233fed

**3- Selling when excluded (0% tax) (passed):**
https://testnet.bscscan.com/tx/0x9b751a1e09eb44de0a93350354d2c77259975a531ea638b07fded59296d6f7ec

**4- Transferring when excluded (0% tax) (passed):**
https://testnet.bscscan.com/tx/0xd0814ae62338bcb6c0f99f9168748f154839a6a6c4a5a934dc1ccde5c76ce077

# FUNCTIONAL TESTING

**5- Buying when not excluded from fees (10% tax) (passed):**
https://testnet.bscscan.com/tx/0xd7adf8923c0fce977e351d81f80e9d53b0dad7e9d5dda3f0bcd0016895d453ce

**6- Selling when not excluded from fees (10% tax) (passed):**
https://testnet.bscscan.com/tx/0xe122550cceb5894e3bac024682bfbb9ec0f46007a2bde1404e39c1f5c6fa0fbd

**7- Transferring when not excluded from fees (10% tax) (passed):**
https://testnet.bscscan.com/tx/0x41996c1e9d4f51d2334366561355 6ef631a6da35270148b9b73f1b637ac53fc3

**8-Internal swap (passed):**
**marketing wallet received ETH**
https://testnet.bscscan.com/address/0xd8999a98dc6e17dc7713ecc2c6b6f55ed7f965a7

# MANUAL TESTING

## Low Risk Issue

---

IIssue: **no transferOwnership Function**
Type : Logical
Function: ---
Line: 42-69
Severity: Low

**Overview:** the contract does not have a **transferOwnership** function, which means that the ownership of the contract cannot be transferred to another address. This can be a problem if the original owner loses control of their private keys or if they are no longer able to manage the contract for any reason

### Recommendations

To address the issue identified in this audit, we recommend the following:

1.Implement a **TransferOwnership** Function The contract should be updated to include a transferOwnership function that allows the current owner to transfer ownership of the contract to another address. This function should include proper access control to prevent unauthorized transfers of ownership.

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