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AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

Meme King Inu

DATED : 17 June 23'

AUDIT SUMMARY

Project name – Meme King Inu

Date: 17 June, 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	1	0	0	0
Acknowledged	0	0	0	0	0
Resolved	0	1	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/0xEcbC1a39E473ACF3a9A4106B22Cd2a19D839449F#readContract

Token Information

Token Name : Meme King Inu

Token Symbol: MKI

Decimals: 9

Token Supply:1,000,000,000

Token Address:
0x42De50c3a3195671e252BA1204EEf9D8F688232b

Checksum:
3cec57ec2ca99f405405ad19398e141ad397d9b7

Owner:
0x4EC29e7604aDfe7D4008fd8e2ac3Cdb749f64515

TOKEN OVERVIEW

Fees:

Buy Fees: 8%

Sell Fees: 8%

Transfer Fees: 8%

Fees Privilige: Static Fees

Ownership : Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: none

Blacklist: No

Other Priviliges:

- Initial distribution of the tokens
- Enabling trades

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

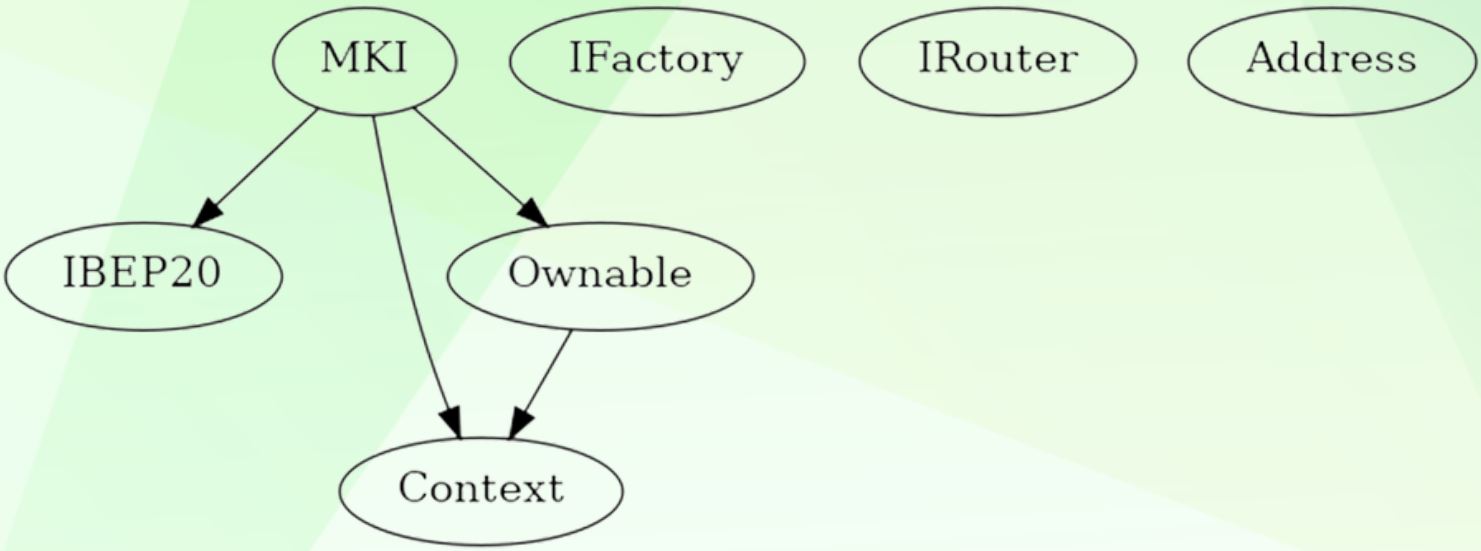
CLASSIFICATION OF RISK

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	1(Resolved)
Medium-Risk	0
Low-Risk	0
Gas Optimization / Suggestions	0

INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to change buy/sell/transfer fees (8/8/8)
- Owner is not able to blacklist an arbitrary address.
- Owner is not able to disable trades
- Owner is not able to limit buy/sell/transfer/wallet amounts
- Owner is not able to mint new tokens
- Owner must enable trades manually

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
└	transferOwnership	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 🔒	🛑	
MKI	Implementation	Context, IBEP20, Ownable		
└	<Constructor>	Public ❗	🛑	NO❗
└	name	Public ❗		NO❗
└	symbol	Public ❗		NO❗
└	decimals	Public ❗		NO❗
└	totalSupply	Public ❗		NO❗
└	balanceOf	Public ❗		NO❗

CONTRACT ASSESMENT

└	allowance	Public ❗		|NO❗
└	approve	Public ❗	🛑	|NO❗
└	transferFrom	Public ❗	🛑	|NO❗
└	increaseAllowance	Public ❗	🛑	|NO❗
└	decreaseAllowance	Public ❗	🛑	|NO❗
└	transfer	Public ❗	🛑	|NO❗
└	isExcludedFromReward	Public ❗		|NO❗
└	reflectionFromToken	Public ❗		|NO❗
└	EnableTrading	External ❗	🛑	onlyOwner
└	updatedeadline	External ❗	🛑	onlyOwner
└	tokenFromReflection	Public ❗		|NO❗
└	excludeFromReward	Public ❗	🛑	onlyOwner
└	includeInReward	External ❗	🛑	onlyOwner
└	excludeFromFee	Public ❗	🛑	onlyOwner
└	includeInFee	Public ❗	🛑	onlyOwner
└	isExcludedFromFee	Public ❗		|NO❗
└	_reflectRfi	Private 🔐	🛑		
└	_takeLiquidity	Private 🔐	🛑		
└	_takeMarketing	Private 🔐	🛑		
└	_takeOps	Private 🔐	🛑		
└	_takeDev	Private 🔐	🛑		
└	_getValues	Private 🔐			
└	_getTValues	Private 🔐			
└	_getRValues1	Private 🔐			
└	_getRValues2	Private 🔐			
└	_getRate	Private 🔐			
└	_getCurrentSupply	Private 🔐			
└	_approve	Private 🔐	🛑		
└	_transfer	Private 🔐	🛑		
└	_tokenTransfer	Private 🔐	🛑		
└	swapAndLiquify	Private 🔐	🛑	lockTheSwap
└	addLiquidity	Private 🔐	🛑		
└	swapTokensForBNB	Private 🔐	🛑		
└	bulkExcludeFee	External ❗	🛑	onlyOwner
└	updateMarketingWallet	External ❗	🛑	onlyOwner
└	updateDevWallet	External ❗	🛑	onlyOwner
└	updateOpsWallet	External ❗	🛑	onlyOwner
└	updateSwapTokensAtAmount	External ❗	🛑	onlyOwner
└	updateSwapEnabled	External ❗	🛑	onlyOwner
└	rescueBNB	External ❗	🛑	onlyOwner
└	rescueAnyBEP20Tokens	Public ❗	🛑	onlyOwner

CONTRACT ASSESMENT

| └ | <Receive Ether> | External ❗ | 💵 |NO❗ |

Legend

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

STATIC ANALYSIS

```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3

MKI.includeInReward(address) (contracts/Token.sol#334-345) has costly operations inside a loop:
        - _excluded.pop() (contracts/Token.sol#341)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#costly-operations-inside-a-loop

Context._msgData() (contracts/Token.sol#44-47) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

MKI._rTotal (contracts/Token.sol#145) 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#19) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.20 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#112-117):
        - (success) = recipient.call{value: amount}() (contracts/Token.sol#115)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IRouter.WETH() (contracts/Token.sol#91) is not in mixedCase
Struct MKI.valuesFromGetValues (contracts/Token.sol#182-196) is not in CapWords
Function MKI.EnableTrading() (contracts/Token.sol#305-310) is not in mixedCase
Parameter MKI.updatedeadline(uint256)._deadline (contracts/Token.sol#312) is not in mixedCase
Parameter MKI.updateSwapEnabled(bool)._enabled (contracts/Token.sol#649) is not in mixedCase
Parameter MKI.rescueAnyBEP20Tokens(address,address,uint256)._tokenAddr (contracts/Token.sol#660) is not in mixedCase
Parameter MKI.rescueAnyBEP20Tokens(address,address,uint256)._to (contracts/Token.sol#660) is not in mixedCase
Parameter MKI.rescueAnyBEP20Tokens(address,address,uint256)._amount (contracts/Token.sol#660) is not in mixedCase
Constant MKI._decimals (contracts/Token.sol#141) is not in UPPER_CASE_WITH_UNDERSCORES
Variable MKI.genesis_block (contracts/Token.sol#149) is not in mixedCase
Constant MKI._name (contracts/Token.sol#157) is not in UPPER_CASE_WITH_UNDERSCORES
Constant MKI._symbol (contracts/Token.sol#158) is not in UPPER_CASE_WITH_UNDERSCORES
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Token.sol#45)" inContext (contracts/Token.sol#39-48)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

MKI._lastSell (contracts/Token.sol#136) is never used in MKI (contracts/Token.sol#120-666)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable

MKI._tTotal (contracts/Token.sol#144) should be constant
MKI.deadWallet (contracts/Token.sol#152) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

MKI.pair (contracts/Token.sol#139) should be immutable
MKI.router (contracts/Token.sol#138) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
```

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/0x86d48e0ebfedd9fd54d16e8e180be01de8c622617bf9b381910eb938479b962d

2- Buying when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x94e97037b150fc3fdcaf0ba222f13856902ad0c42574dd95d7575cd57bcdd98a

3- Selling when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x5f16db236a6f1741f74686e3c823a7b1b5b49a1e8c6dfd5b6a04a42aa390cb88

4- Transferring when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0xeb69d2f9bd83f2f0b350f3dba5751dae196689f0b2b5dff6b832685a8ba2f4cd

5- Buying when not excluded from fees (8% tax) (passed):
https://testnet.bscscan.com/tx/0x319d040123a0526d669822787aba6beb315a1a47bc1b80229f27d89804304329

6- Selling when not excluded from fees (8% tax) (passed):
https://testnet.bscscan.com/tx/0xc64237d1632f27fa30edc332fc9ec7a9346628b3a5bf53d49a19c21faac86cca

FUNCTIONAL TESTING

7- Transferring when not excluded from fees (8% tax) (passed):
https://testnet.bscscan.com/tx/0x257c7813d216a4c65b9e057069b7c09eed4060b5fb2e2fb07a5ae33126a11cab

8-Internal swap & rewards distribution(passed):
- BNB sent to marketing wallet
- Auto liquidty
- Reflections

https://testnet.bscscan.com/tx/0x257c7813d216a4c65b9e057069b7c09eed4060b5fb2e2fb07a5ae33126a11cab

ISSUES FOUND

Centralization – Trades must be enabled

Severity: High

function: EnableTrading

Status: Resolved (owned by safu dev)

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be able to buy/sell/transfer tokens.

```
function EnableTrading() external onlyOwner {
    require(!tradingEnabled, "Cannot re-enable trading");
    tradingEnabled = true;
    swapEnabled = true;
    genesis_block = block.number;
}
```

Suggestion

To mitigate this centralization issue, we propose the following options:

1. Renounce Ownership: Consider relinquishing control of the smart contract by renouncing ownership. This would remove the ability for a single entity to manipulate the router, reducing centralization risks.
2. Multi-signature Wallet: Transfer ownership to a multi-signature wallet. This would require multiple approvals for any changes to the mainRouter, adding an additional layer of security and reducing the centralization risk.
3. Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades

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