AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

KFC

DATED : 23 MAY 23'

AUDIT SUMMARY

Project name – KFC

Date: 23 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	1	0	1	0	0
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0

USED TOOLS

Tools:

1.Manual Review: The code has undergone a line-by-line review by the **Ace** team.

2.ETH Test Network: All tests were conducted on the ETH 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/0x3CDed0726be6029fe2ab5d5906df5931C5eCe54F

Token Information

Name : KFC

Symbol : KFC

Decimals: 18

Network: BSC

Token Type:BEP20

Token Address:
0x96a48B8d5807909273D36ABAA06f7C8233bB58F
3

Owner:
0xCbfBC639dd2704d5b1205E4b49091A075E5b7784
(at time of writing the audit)

Deployer:0x4a38Fe94CD63B705Cb6a1d5E6d707808
a5019725

Token Information

Fees:

Buy Fees: 10%

Sell Fees: 10%

Transfer Fees: 11%

Fees Privilige: Owner

Ownership :

0xCbfBC639dd2704d5b1205E4b49091A075E5b7784

Minting: None

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Priviliges:- - including in fees

- excluding from fees

- initial distribution of the tokens

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

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

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

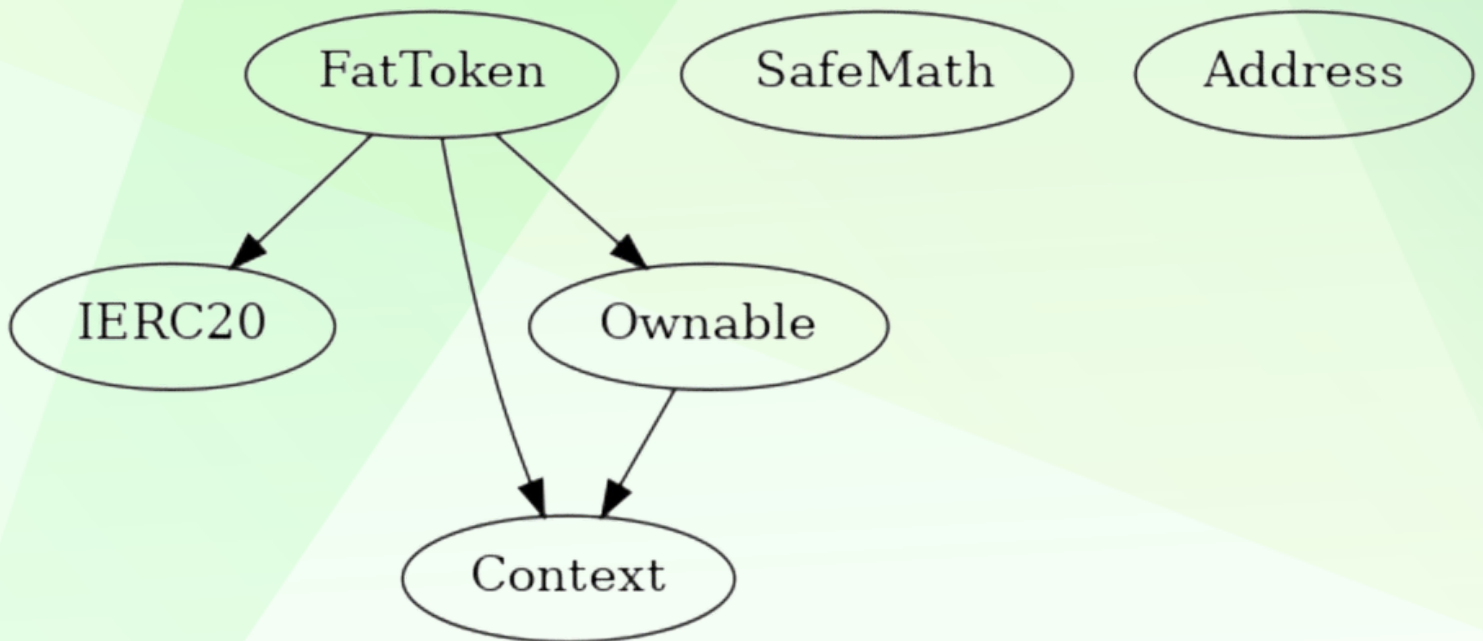| Severity	Found
◆ **Critical**	1
◆ **High-Risk**	0
◆ **Medium-Risk**	1
◆ **Low-Risk**	0
◆ **Gas Optimization / Suggestions**	0

INHERITANCE TREE

POINTS TO NOTE

- Owner is not able to change buy/sell/transfer taxes (static fees)
- 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

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
IERC20	Interface			
└	totalSupply	External ❗	|NO ❗	
└	balanceOf	External ❗	|NO ❗	
└	transfer	External ❗	🔴 |NO ❗	
└	allowance	External ❗	|NO ❗	
└	approve	External ❗	🔴 |NO ❗	
└	transferFrom	External ❗	🔴 |NO ❗	
SafeMath	Library			
└	add	Internal 🔒		
└	sub	Internal 🔒		
└	sub	Internal 🔒		
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
└	mod	Internal 🔒		
Context	Implementation			
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
Address	Library			
└	isContract	Internal 🔒		
└	sendValue	Internal 🔒	🔴	
└	functionCall	Internal 🔒	🔴	
└	functionCall	Internal 🔒	🔴	
└	functionCallWithValue	Internal 🔒	🔴	
└	functionCallWithValue	Internal 🔒	🔴	
└	_functionCallWithValue	Private 🔒	🔴	
Ownable	Implementation	Context		
└	<Constructor>	Public ❗	🔴 |NO ❗	
└	owner	Public ❗	|NO ❗	
└	renounceOwnership	Public ❗	🔴	onlyOwner
└	transferOwnership	Public ❗	🔴	onlyOwner
IUniswapV2Factory	Interface			
└	getPair	External ❗	|NO ❗	

CONTRACT ASSESMENT

└	createPair	External ❗	🔴	NO❗
IUniswapV2Router01	Interface			
└	factory	External ❗		NO❗
└	WETH	External ❗		NO❗
└	addLiquidity	External ❗	🔴	NO❗
└	addLiquidityETH	External ❗	💲	NO❗
IUniswapV2Router02	Interface	IUniswapV2Router01		
└	swapExactTokensForTokensSupportingFeeOnTransferTokens	External ❗	🔴	NO❗
└	swapExactETHForTokensSupportingFeeOnTransferTokens	External ❗	💲	NO❗
└	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗	🔴	NO❗
TokenDistributor	Implementation			
└	<Constructor>	Public ❗	🔴	NO❗
FatToken	Implementation	Context, IERC20, Ownable		
└	<Constructor>	Public ❗	🔴	NO❗
└	setFundAddress	External ❗	🔴	onlyOwner
└	totalSupply	Public ❗		NO❗
└	balanceOf	Public ❗		NO❗
└	transfer	Public ❗	🔴	NO❗
└	allowance	Public ❗		NO❗
└	approve	Public ❗	🔴	NO❗
└	transferFrom	Public ❗	🔴	NO❗
└	increaseAllowance	Public ❗	🔴	NO❗
└	decreaseAllowance	Public ❗	🔴	NO❗
└	isExcludedFromReward	Public ❗		NO❗
└	totalFees	Public ❗		NO❗
└	deliver	Public ❗	🔴	NO❗
└	reflectionFromToken	Public ❗		NO❗
└	tokenFromReflection	Public ❗		NO❗
└	excludeFromReward	Public ❗	🔴	onlyOwner
└	includeInReward	External ❗	🔴	onlyOwner
└	_transferBothExcluded	Private 🔐	🔴	
└	setSwapPairList	External ❗	🔴	onlyOwner
└	multi_bclist	Public ❗	🔴	onlyOwner
└	setFeeWhiteList	External ❗	🔴	onlyOwner
└	setCurrency	Public ❗	🔴	onlyOwner
└	completeCustoms	External ❗	🔴	onlyOwner
└	setNumTokensSellToAddToLiquidity	Public ❗	🔴	onlyOwner
└	setSwapAndLiquifyEnabled	Public ❗	🔴	onlyOwner

CONTRACT ASSESMENT

└	\<Receive Ether\>	External ❗	💵	NO❗
└	_reflectFee	Private 🔐	🔴	
└	_getValues	Private 🔐		
└	_getTValues	Private 🔐		
└	_getRValues	Private 🔐		
└	_getRate	Private 🔐		
└	_getCurrentSupply	Private 🔐		
└	_takeLiquidity	Private 🔐	🔴	
└	claimTokens	Public ❗	🔴	onlyOwner
└	calculateTaxFee_BUY	Private 🔐		
└	calculateTaxFee_SELL	Private 🔐		
└	calculateLiquidityFee_BUY	Private 🔐		
└	calculateLiquidityFee_SELL	Private 🔐		
└	removeAllFee	Private 🔐	🔴	
└	restoreAllFee	Private 🔐	🔴	
└	isExcludedFromFee	Public ❗		NO❗
└	_approve	Private 🔐	🔴	
└	isReward	Public ❗		NO❗
└	setkb	Public ❗	🔴	onlyOwner
└	launch	External ❗	🔴	onlyOwner
└	disableSwapLimit	Public ❗	🔴	onlyOwner
└	disableWalletLimit	Public ❗	🔴	onlyOwner
└	disableChangeTax	Public ❗	🔴	onlyOwner
└	setCurrency	Public ❗	🔴	onlyOwner
└	changeSwapLimit	External ❗	🔴	onlyOwner
└	changeWalletLimit	External ❗	🔴	onlyOwner
└	_transfer	Private 🔐	🔴	
└	swapAndLiquify	Private 🔐	🔴	lockTheSwap
└	swapTokensForEth_ETH	Private 🔐	🔴	
└	swapTokensForEth	Private 🔐	🔴	
└	addLiquidityETH	Private 🔐	🔴	
└	addLiquidity	Private 🔐	🔴	
└	_tokenTransfer	Private 🔐	🔴	
└	_transferStandard	Private 🔐	🔴	
└	_transferToExcluded	Private 🔐	🔴	
└	_transferFromExcluded	Private 🔐	🔴	

CONTRACT ASSESMENT

Legend

Symbol	Meaning
🔴	Function can modify state
💵	Function is payable

STATIC ANALYSIS

```
Variable FatToken._getValues(uint256,bool).rTransferAmount (contracts/Token.sol#1057) is too similar to FatToken._transferStandard(address,address,uint256).tTra
nsferAmount (contracts/Token.sol#1535)
Variable FatToken._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1578) is too similar to FatToken._transferBothExcluded(add
ress,address,uint256).tTransferAmount (contracts/Token.sol#946)
Variable FatToken._getValues(uint256,bool).rTransferAmount (contracts/Token.sol#1057) is too similar to FatToken._getValues(uint256,bool).tTransferAmount (contr
acts/Token.sol#1053)
Variable FatToken._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#1533) is too similar to FatToken._transferBothExcluded(address
,address,uint256).tTransferAmount (contracts/Token.sol#946)
Variable FatToken._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#944) is too similar to FatToken._getTValues(uint256,bool).
tTransferAmount (contracts/Token.sol#1086)
Variable FatToken.reflectionFromToken(uint256,bool,bool).rTransferAmount (contracts/Token.sol#895) is too similar to FatToken._transferToExcluded(address,addres
s,uint256).tTransferAmount (contracts/Token.sol#1557)
Variable FatToken.reflectionFromToken(uint256,bool,bool).rTransferAmount (contracts/Token.sol#895) is too similar to FatToken._transferBothExcluded(address,addr
ess,uint256).tTransferAmount (contracts/Token.sol#946)
Variable FatToken._getValues(uint256,bool).rTransferAmount (contracts/Token.sol#1057) is too similar to FatToken._getTValues(uint256,bool).tTransferAmount (cont
racts/Token.sol#1086)
Variable FatToken._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#944) is too similar to FatToken._transferFromExcluded(addr
ess,address,uint256).tTransferAmount (contracts/Token.sol#1580)
Variable FatToken._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#944) is too similar to FatToken._transferStandard(address,
address,uint256).tTransferAmount (contracts/Token.sol#1535)
Variable FatToken._getValues(uint256,bool).rTransferAmount (contracts/Token.sol#1057) is too similar to FatToken._transferFromExcluded(address,address,uint256).
tTransferAmount (contracts/Token.sol#1580)
Variable FatToken._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#1533) is too similar to FatToken._getTValues(uint256,bool).tTr
ansferAmount (contracts/Token.sol#1086)
Variable FatToken._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#944) is too similar to FatToken._transferToExcluded(addres
s,address,uint256).tTransferAmount (contracts/Token.sol#1557)
Variable FatToken._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#944) is too similar to FatToken._transferBothExcluded(addr
ess,address,uint256).tTransferAmount (contracts/Token.sol#946)
Variable FatToken._getValues(uint256,bool).rTransferAmount (contracts/Token.sol#1057) is too similar to FatToken._transferToExcluded(address,address,uint256).tT
ransferAmount (contracts/Token.sol#1557)
Variable FatToken._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#1533) is too similar to FatToken._transferFromExcluded(address
,address,uint256).tTransferAmount (contracts/Token.sol#1580)
Variable FatToken._getValues(uint256,bool).rTransferAmount (contracts/Token.sol#1057) is too similar to FatToken._transferBothExcluded(address,address,uint256).
tTransferAmount (contracts/Token.sol#946)
Variable FatToken._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#1099) is too similar to FatToken._transferToExcluded(address
,address,uint256).tTransferAmount (contracts/Token.sol#1557)
Variable FatToken._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#944) is too similar to FatToken._getValues(uint256,bool).t
TransferAmount (contracts/Token.sol#1053)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

FatToken.deadAddress (contracts/Token.sol#623) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

FatToken._tTotal (contracts/Token.sol#633) should be immutable
FatToken._tokenDistributor (contracts/Token.sol#630) should be immutable
FatToken.decimals (contracts/Token.sol#639) should be immutable
FatToken.enableKillBlock (contracts/Token.sol#644) should be immutable
FatToken.enableOffTrade (contracts/Token.sol#643) should be immutable
FatToken.enableRewardList (contracts/Token.sol#645) should be immutable
FatToken.name (contracts/Token.sol#637) should be immutable
FatToken.symbol (contracts/Token.sol#638) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
```

Static Analysis

an static analysis of the code were performed using slither. No issues were found

FUNCTIONAL TESTING

Router (PCS V2):
0xD99D1c33F9fC3444f8101754aBC46c52416550D1

1- Adding liquidity (passed):
https://testnet.bscscan.com/tx/0xd324710a7309fc8607c87bcb8d45d4d3b6f4d2a6d56b3dc2fc59a3594f3d523a

2- Buying when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x6690098aecce8f33a1655c5c70233e53fc02e6a2d63f6197276a531f342fc180

3- Selling when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0xec49e0eec0f8e1d877c2b5af5f79496539ae602d37ef57ddea7e1149eab5b946

4- Transferring when excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0xf3495d7ab1a5371f07fba9f168262f703ec22cbddeca6c400aa399d45ff2aead

5- Buying from a regular wallet (11% tax) (passed):
https://testnet.bscscan.com/tx/0x7f52081b6992d67efd171f25c09a3ad408b842954acae585a7b7ac5544cc0585

6- Selling from a regular wallet (10% tax) (passed):
https://testnet.bscscan.com/tx/0x2811c5652af5244e00eb33148f372f9d0c1932aed4f6e7217eb5ddb3e72dd7e8

7- Transferring from a regular wallet (11% tax) (passed):
https://testnet.bscscan.com/tx/0x4ab38ac90087054424511c2d479cde3618aa9e04278be597754a16131ce21866

FUNCTIONAL TESTING

7- Internal swap (bnb fee and auto-liquidity)(passed):
https://testnet.bscscan.com/tx/0x4ab38ac90087054424511c2d47
9cde3618aa9e04278be597754a16131ce21866

FUNCTIONAL TESTING

Issue: Ability to change the swap currency, affecting the swap and liquify mechanism

Severity: **Critical**
Function: setCurrency
Status: Not Resolved

Overview:
The owner can change the currency for swapping. This might affect the swap & liquify mechanism, potentially leading to unexpected behaviour or even reverted transactions.

Code:

```
function setCurrency(address _currency) public onlyOwner {
    currency = _currency;
    if (_currency == _swapRouter.WETH()) {
        currencyIsEth = true;
    } else {
        currencyIsEth = false;
    }
}
```

Suggestion:
Limit the owner's ability to change the swap currency or implement proper mechanisms to ensure the change doesn't affect the liquidity of the token adversely.

FUNCTIONAL TESTING

Issue: Owner receives LP tokens from auto-liquidity, potentially enabling removal of a portion of the liquidity pool

Severity: Medium
Function: addLiquidityETH
Status: Not Resolved

Overview:

The owner receives LP tokens generated from auto-liquidity. Accumulated tokens can be used for removing a portion of the Liquidity pool.

Code:

```
function addLiquidityETH(uint256 tokenAmount, uint256 ethAmount) private {
    if (tokenAmount == 0) return;

    // approve token transfer to cover all possible scenarios
    _approve(address(this), address(_swapRouter), tokenAmount);

    // add the liquidity
    try
        _swapRouter.addLiquidityETH{value: ethAmount}(
            address(this),
            tokenAmount,
            0, // slippage is unavoidable
            0, // slippage is unavoidable
            address(fundAddress),
            block.timestamp
        )
    {} catch {
        emit failed_swap(2);
    }
}
```

Suggestion:

To maintain the stability of the liquidity pool, consider limiting the owner's ability to receive LP tokens from auto-liquidity, or provide a transparent mechanism for the use of such tokens.

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