



# Smart Contract Audit

FOR  
**XFLOKI**

DATED : 27 July 23'



# MANUAL TESTING

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## Centralization – Enabling Trades

**Severity:** **High**

**function:** enableTrading

**Status:** Resolved (Contract is owned by safu developer)

### Overview:

Owner of the contract must enable trades manually for investors, otherwise no one would be able to buy/sell/transfer their tokens.

```
function enableTrading() external onlyOwner {  
    require(!tradingEnabled, "Cannot re-enable trading");  
    tradingEnabled = true;  
    providingLiquidity = true;  
}
```

### Suggestion

It's suggested to either enable trades prior to the presale, or transfer ownership of the contract to a certified pinsksale safu developer to guarantee enabling of trades.



# AUDIT SUMMARY

**Project name -XFLOKI**

**Date:** 27 July, 2023

**Scope of Audit-** Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

**Audit Status: Passed with High Risk**

## Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	0	0	0
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0



# USED TOOLS

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## 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/0x17f57FAc386b6923D744F5bC6ba074C7833a762E>

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# Token Information

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**Token Name :** X-Floki

**Token Symbol:** XFLOKI

**Decimals:** 18

**Token Supply:** 100,000,000

**Token Address:**

0x46aac59169084003Df6b2fF43Bb5984E34fc73d9

**Checksum:**

378d2f4a0a3311edde9ed10aa5f2fdb5e48fe6ef

**Owner:**

0xD28b0E54b0f2888aA7F25F0f45C177430043c2A0

**(at time of writing the audit)**

**Deployer:**

0xD28b0E54b0f2888aA7F25F0f45C177430043c2A0

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# TOKEN OVERVIEW

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## Fees:

Buy Fees: 0-10%

Sell Fees: 0-10%

Transfer Fees: 0-10%

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**Fees Privilege:** owner

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**Ownership:** owned

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**Minting:** No mint function

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**Max Tx Amount/ Max Wallet Amount:** no

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**Blacklist:** No

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**Other Privileges:** Initial distribution of the tokens  
modifying fees  
enabling trades

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# AUDIT METHODOLOGY

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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 is exercised 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 Limit and 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



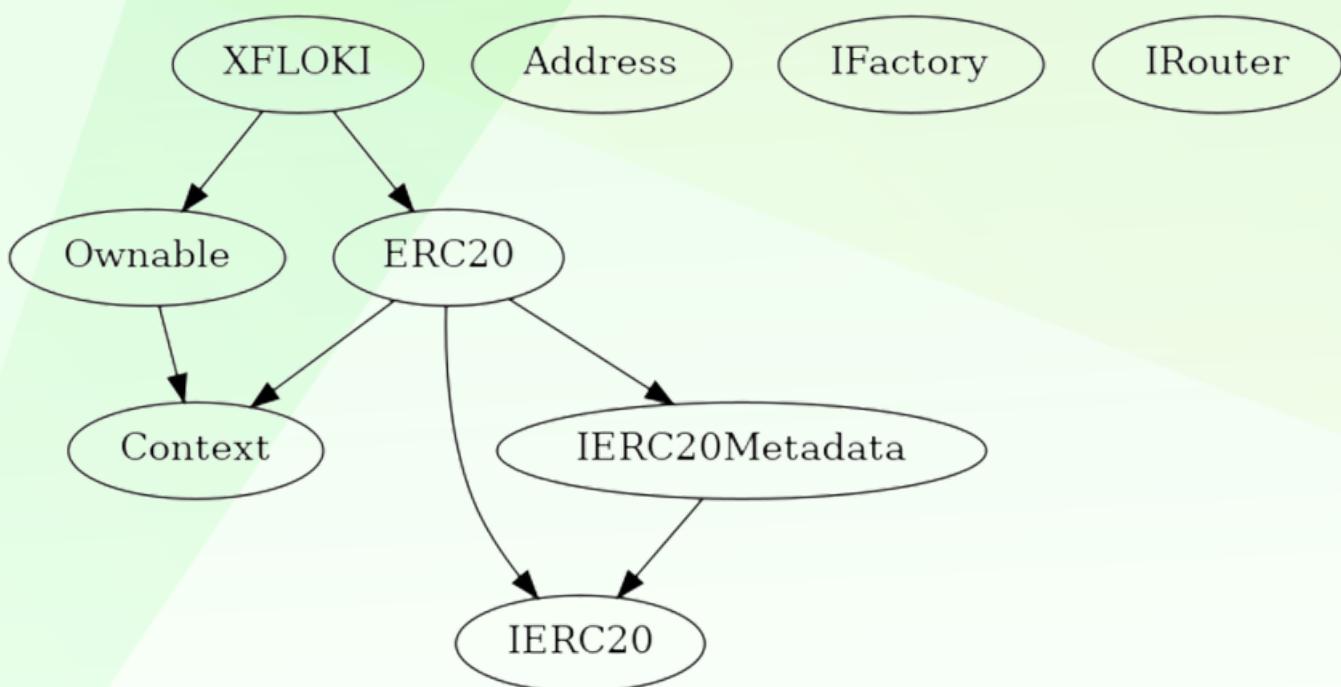
# CLASSIFICATION OF RISK

Severity	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
◆ Medium-Risk	0
◆ Low-Risk	0
◆ Gas Optimization / Suggestions	0

# INHERITANCE TREE





## POINTS TO NOTE

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- Owner is able to update fees within 0-10% for buy/sell/transfers
- Owner is not able to blacklist an address
- Owner is not able to disable buy/sell/transfers
- Owner is not able to set max wallet limit and minimum wallet limits
- Owner is not able to mint new tokens
- **Owner must enable trades manually**

# CONTRACT ASSESSMENT

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Contract	Type	Bases			
↳	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	
	**Context**   Implementation				
↳   _msgSender   Internal					
↳   _msgData   Internal					
	**IERC20**   Interface				
↳   totalSupply   External	!	NO !			
↳   balanceOf   External	!	NO !			
↳   transfer   External	!	NO !			
↳   allowance   External	!	NO !			
↳   approve   External	!	NO !			
↳   transferFrom   External	!	NO !			
	**IERC20Metadata**   Interface   IERC20				
↳   name   External	!	NO !			
↳   symbol   External	!	NO !			
↳   decimals   External	!	NO !			
	**ERC20**   Implementation   Context, IERC20, IERC20Metadata				
↳   <Constructor>   Public	!	NO !			
↳   name   Public	!	NO !			
↳   symbol   Public	!	NO !			

# CONTRACT ASSESSMENT

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```

| 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 | increaseAllowance | Public ! | 🔴 | NO ! |
| L | decreaseAllowance | Public ! | 🔴 | NO ! |
| L | _transfer | Internal 🔒 | 🔴 |||
| L | _tokengeneration | Internal 🔒 | 🔴 |||
| L | _approve | Internal 🔒 | 🔴 |||
|||||
| **Address** | Library | ||
| L | sendValue | Internal 🔒 | 🔴 |||
|||||
| **Ownable** | Implementation | Context ||
| L | <Constructor> | Public ! | 🔴 | NO ! |
| L | owner | Public ! | NO ! |
| L | renounceOwnership | Public ! | 🔴 | onlyOwner |
| L | transferOwnership | Public ! | 🔴 | onlyOwner |
| L | _setOwner | Private 🔒 | 🔴 |||
|||||
| **IFactory** | Interface | ||
| L | createPair | External ! | 🔴 | NO ! |
|||||
| **IRouter** | Interface | ||
| L | factory | External ! | NO ! |
| L | WETH | External ! | NO ! |
| L | addLiquidityETH | External ! | 💸 | NO ! |
| L | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! | 🔴 | NO ! |
|||||
| **XFLOKI** | Implementation | ERC20, Ownable ||
| L | <Constructor> | Public ! | 🔴 | ERC20 |
| L | approve | Public ! | 🔴 | NO ! |
| L | transferFrom | Public ! | 🔴 | NO ! |
| L | increaseAllowance | Public ! | 🔴 | NO ! |
| L | decreaseAllowance | Public ! | 🔴 | NO !

```

# CONTRACT ASSESSMENT

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```

| L | transfer | Public ! | 🔒 | NO ! |
| L | _transfer | Internal 🔒 | 🔒 || 
| L | Liquify | Private 🔒 | 🔒 | lockTheSwap |
| L | swapTokensForETH | Private 🔒 | 🔒 || 
| L | addLiquidity | Private 🔒 | 🔒 || 
| L | updateLiquidityProvide | External ! | 🔒 | onlyOwner |
| L | SetBuyTaxes | External ! | 🔒 | onlyOwner |
| L | SetSellTaxes | External ! | 🔒 | onlyOwner |
| L | UpdateMarketingWallet | External ! | 🔒 | onlyOwner |
| L | updateLiquidityTreshhold | External ! | 🔒 | onlyOwner |
| L | enableTrading | External ! | 🔒 | onlyOwner |
| L | excludeFromFee | External ! | 🔒 | onlyOwner |
| L | includeFromFee | External ! | 🔒 | onlyOwner |
| L | rescueBNB | External ! | 🔒 | NO ! |
| L | rescueBEP2020 | External ! | 🔒 | onlyOwner |
| L | <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>

XFLOKI.excludeFromFee(address) (contracts/Token.sol#703-707) compares to a boolean constant:  
- require(bool,string)(exemptFee[\_account] != true, Account is already excluded) (contracts/Token.sol#704)  
XFLOKI.includeFromFee(address) (contracts/Token.sol#709-713) compares to a boolean constant:  
- require(bool,string)(exemptFee[\_account] != false, Account is already included) (contracts/Token.sol#710)

Reference: <https://github.com/crytic/slither/wiki/Detector-Documentation#boolean-equality>

Context.\_msgData() (contracts/Token.sol#23-26) is never used and should be removed  
Reference: <https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code>

Pragma version^0.8.17 (contracts/Token.sol#16) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16  
solc-0.8.21 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#333-341):  
- (success) = recipient.call{value: amount}() (contracts/Token.sol#336)

Reference: <https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls>

Variable ERC20.\_balances (contracts/Token.sol#72) is not in mixedCase  
Variable ERC20.\_allowances (contracts/Token.sol#74) is not in mixedCase  
Function IRouter.WETH() (contracts/Token.sol#391) is not in mixedCase  
Event XFLOKI.includeFromFeeUpdated(address) (contracts/Token.sol#446) is not in CapWords  
Function XFLOKI.Liquify(uint256,XFLOKI.Taxes) (contracts/Token.sol#585-623) is not in mixedCase  
Function XFLOKI.SetBuyTaxes(uint256,uint256) (contracts/Token.sol#662-668) is not in mixedCase  
Parameter XFLOKI.SetBuyTaxes(uint256,uint256).\_marketing (contracts/Token.sol#663) is not in mixedCase  
Parameter XFLOKI.SetBuyTaxes(uint256,uint256).liquidity (contracts/Token.sol#664) is not in mixedCase  
Function XFLOKI.SetSellTaxes(uint256,uint256) (contracts/Token.sol#670-676) is not in mixedCase  
Parameter XFLOKI.SetSellTaxes(uint256,uint256).\_marketing (contracts/Token.sol#671) is not in mixedCase  
Parameter XFLOKI.SetSellTaxes(uint256,uint256).liquidity (contracts/Token.sol#672) is not in mixedCase  
Function XFLOKI.UpdateMarketingWallet(address) (contracts/Token.sol#678-683) is not in mixedCase  
Parameter XFLOKI.UpdateMarketingWallet(address).\_newWallet (contracts/Token.sol#678) is not in mixedCase  
Parameter XFLOKI.updateLiquidityThreshold(uint256).new\_amount (contracts/Token.sol#685) is not in mixedCase  
Parameter XFLOKI.excludeFromFee(address).\_account (contracts/Token.sol#703) is not in mixedCase  
Parameter XFLOKI.includeFromFee(address).\_account (contracts/Token.sol#709) is not in mixedCase  
Constant XFLOKI.Contract\_Version (contracts/Token.sol#427) is not in UPPER\_CASE\_WITH\_UNDERSCORES  
Constant XFLOKI.Contract\_Dev (contracts/Token.sol#428-429) is not in UPPER\_CASE\_WITH\_UNDERSCORES  
Constant XFLOKI.Contract\_Edition (contracts/Token.sol#430) is not in UPPER\_CASE\_WITH\_UNDERSCORES  
Constant XFLOKI.deadWallet (contracts/Token.sol#433-434) 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#24)" inContext (contracts/Token.sol#18-27)  
Reference: <https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements>

XFLOKI.pair (contracts/Token.sol#418) should be immutable  
XFLOKI.router (contracts/Token.sol#417) 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

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## 1- Adding liquidity (**passed**):

<https://testnet.bscscan.com/tx/0xd3e20006a55dc78fa1b925c569a6d1974b35267b96b030dd264f81406ab32fef>

## 2- Buying when excluded from fees (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0xb18ba7ef183ddf9e643a48e97ee5747c4b9c448ce0a0da43e2e39c3663a59788>

## 3- Selling when excluded from fees (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x9d455304deaa9abbc440b4112e47522c026fcff836caefdfdf5b55a986dfd7af>

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

<https://testnet.bscscan.com/tx/0x79c0ada92729c6b667ab445d9dc7a64f1984d4329d21eec83d021f9442b2e67f>

## 5- Buying when not excluded from fees (0-10% tax) (**passed**):

<https://testnet.bscscan.com/tx/0xe2299aa1a531a7aa2c40cfa9fde8486352e11235aac2994c7f28247c007faf5>

## 6- Selling when not excluded from fees (0-10% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x51773e95c9f367fafc6cf5ac6c487042b55cf82d5a54f24ba1394f803d05a8e1>



# FUNCTIONAL TESTING

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## 7- Transferring (0-10% tax) (passed):

<https://testnet.bscscan.com/tx/0x504f5667c10871ecb0ffb48aa63a72550bb01dbe90139505f9fe60cca4937161>

## 8- Internal swap(ETH sent to marketing wallet) (passed):

<https://testnet.bscscan.com/tx/0x7c49c998f901bf8791010da7fa15258e07f52b9609e3b33accbe800e965ef5a6>



# MANUAL TESTING

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## Centralization – Enabling Trades

**Severity:** High

**function:** enableTrading

**Status:** Resolved (Contract is owned by safu developer)

### Overview:

Owner of the contract must enable trades manually for investors, otherwise no one would be able to buy/sell/transfer their tokens.

```
function enableTrading() external onlyOwner {  
    require(!tradingEnabled, "Cannot re-enable trading");  
    tradingEnabled = true;  
    providingLiquidity = true;  
}
```

### Suggestion

It's suggested to either enable trades prior to the presale, or transfer ownership of the contract to a certified pinsksale safu developer to guarantee enabling of trades.



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We specialize in providing thorough and reliable audits for Web3 projects. With a team of experienced professionals, we use cutting-edge technology and rigorous methodologies to evaluate the security and integrity of blockchain systems. We are committed to helping our clients ensure the safety and transparency of their digital assets and transactions.



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