

# Smart Contract Security Audit V1

## WARGAH Smart Contract

1/3/2022



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# Table of Contents

## **Table of Contents**

## **Background**

## **Project Information**

Token Information

Executive Summary

## **File and Function Level Report**

**File in Scope:**

## **Issues Checking Status**

Severity Definitions

Audit Findings

## **Automatic testing**

Testing proves

Inheritance graph

Call graph

## **Unified Modeling Language (UML)**

**Functions signature**

**Automatic general report**

## **Conclusion**

## **Disclaimer**

# Background

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

## Project Information

- **Platform:** Binance Smart Chain
- **Contract Address:** 0xb61D3B706120475a34E005F5CF50fEC9BaA1e9fF
- **Code Source:**

<https://testnet.bscscan.com/address/0x7bfA49911eA8b6cc0e54BC3f5fD7Fa4D850D2B24#code>

## Token Information

- Name: WRG
- Total Supply: 1,00,000,000
- Holders:
- Total transactions:

## Contracts address deployed to test net (BSC)

WARGAH smart contract on testnet.bsc by the auditor to test every function (BSC Test Net)

<https://testnet.bscscan.com/address/0xb61d3b706120475a34e005f5cf50fec9baa1e9ff>

## Executive Summary

According to our assessment, the customer`s solidity smart contract is **Secured**.

Well Secured	
<b>Secured</b>	✓
Poor Secured	
Insecure	

Automated checks are with remix IDE. All issues were performed by the team, which included the analysis of code functionality, manual audit found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the audit overview section. The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

Team found 0 critical, 0 high, 0 medium, 2 low, 0 very low-level issues and 3 notes in all solidity files of the contract

The files:

WARGAH.sol

# File and Function Level Report

## File in Scope:

Contract Name	SHA 256 hash	Contract Address
WARGAH.sol	0f2d92ab94bdb375d153e4a f70a2294126104b6ab6f870 a2529ed0a7d5845217	0xb61D3B706120475a34E005F5CF50fEC9Ba A1e9fF

- Contract: WARGAH
- Inherit: Context, IERC20, Ownable
- Observation: All passed including security check
- Test Report: passed
- Score: passed
- Conclusion: passed

Function	Test Result	Type / Return Type	Score
name	✓	Read / public	<b>Passed</b>
symbol	✓	Read / public	<b>Passed</b>
decimals	✓	Read / public	<b>Passed</b>
totalSupply	✓	Read / public	<b>Passed</b>
allowance	✓	Read / public	<b>Passed</b>
balanceOf	✓	Read / public	<b>Passed</b>
Owner	✓	Read / public	<b>Passed</b>
_developmentTax	✓	Read / public	<b>Passed</b>
uniswapV2Router	✓	Read / public	<b>Passed</b>
uniswapV2Pair	✓	Read / public	<b>Passed</b>
tokenFromReflection	✓	Read / public	<b>Passed</b>
totalFees	✓	Read / public	<b>Passed</b>

sellFees	✓	Read / public	<b>Passed</b>
buyFees	✓	Read / public	<b>Passed</b>
isExcludedFromReward	✓	Read / public	<b>Passed</b>
isExcludedFromFees	✓	Read / public	<b>Passed</b>
_wargahmarketingTax	✓	Read / public	<b>Passed</b>
_wargahTax	✓	Read / public	<b>Passed</b>
approve	✓	Write / public	<b>Passed</b>
transferFrom	✓	Write / public	<b>Passed</b>
transfer	✓	Write / public	<b>Passed</b>
excludeFromReward	✓	Write / public	<b>Passed</b>
excludeFromFee	✓	Write / public	<b>Passed</b>
includeInReward	✓	Write / public	<b>Passed</b>
includeInFee	✓	Write / public	<b>Passed</b>
renounceOwnership	✓	Write / public	<b>Passed</b>
transferOwnership	✓	Write / public	<b>Passed</b>
setBuyFees	✓	Write / public	<b>Passed</b>
setSellFees	✓	Write / public	<b>Passed</b>
decreaseAllowance	✓	Write / public	<b>Passed</b>
updateWargahmarketingTaxAddress	✓	Write / public	<b>Passed</b>
updateWargahTaxAddress	✓	Write / public	<b>Passed</b>
updateDevelopmentTaxAddress	✓	Write / public	<b>Passed</b>
increaseAllowance	✓	Write / public	<b>Passed</b>

# Issues Checking Status

No.	Issue Description	Checking Status
1	Compiler warnings.	Passed
2	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3	Possible delays in data delivery.	Passed
4	Oracle calls.	Passed
5	Design Logic.	Passed
6	Timestamp dependence.	Passed with notes
7	Integer Overflow and Underflow.	Passed
8	DoS with Revert.	Passed
9	DoS with block gas limit.	Passed with notes
10	Methods execution permissions.	Passed
11	Economy model. If application logic is based on an incorrect economic model, the application would not function correctly and participants would incur financial losses. This type of issue is most often found in bonus rewards systems, Staking and Farming contracts, Vault and Vesting contracts, etc.	Passed
12	The impact of the exchange rate on the logic.	Passed
13	Private user data leaks.	Passed
14	Malicious Event log.	Passed
15	Scoping and Declarations.	Passed
16	Uninitialized storage pointers.	Passed
17	Arithmetic accuracy.	Passed

## Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
High	High-level vulnerabilities are difficult to exploit; however, they also have significant impact on smart contract execution, e.g. public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can't have significant impact on execution
Note	Lowest-level vulnerabilities, code style violations and info statements can't affect smart contract execution and can be ignored.



## Audit Findings

### Critical:

No critical severity vulnerabilities were found.

### High:

No High severity vulnerabilities were found

### Medium:

No Medium severity vulnerabilities were found.

### Low:

#### #Use of block.timestamp for comparisons

##### Description

The value of block.timestamp can be manipulated by the miner.  
And conditions with strict equality is difficult to achieve -  
block.timestamp

##### Remediation

Avoid use of block.timestamp

Status: **Acknowledged**

#### #Owner privileges (In the period when the owner isn't renounced)

##### Description

Owner can change buy and sell Fees or make it = zero.  
Owner can include / exclude any address from Fees or Reward.

```
function excludeFromReward(address account) public onlyOwner {
    require(!_isExcluded[account], "Account is already excluded");
    if (_rOwned[account] > 0) {
        _tOwned[account] = tokenFromReflection(_rOwned[account]);
    }
    _isExcluded[account] = true;
    _excluded.push(account);
}
```

```
function includeInReward(address account) external onlyOwner {
    require(_isExcluded[account], "Account is not excluded");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
        }
    }
}
```

```

        _tOwned[account] = 0;
        _isExcluded[account] = false;
        _excluded.pop();
        break;
    }
}

function excludeFromFee(address account) public onlyOwner {
    _isExcludedFromFee[account] = true;
}

function includeInFee(address account) public onlyOwner {
    _isExcludedFromFee[account] = false;
}

```

### Remediation

Make these functions internal in next version or the team should announce the investors before change the fees and give them time if they want to use the old fees.

P.S: This issue is common to the majority of rewards smart contracts.

Status: **Acknowledged**.

### Very Low:

No Very Low severity vulnerabilities were found.

### Notes:

#### #Unnecessary use of SafeMath

##### Description

Solidity version 0.8 was released with SafeMath checks inbuilt, we can avoid using an explicit safe math library.

##### Remediation

Remove SafeMath Library to save gas fees.

Status: **Acknowledged**

#### #Naming Conventions

##### Description

The contract follows a consistent naming convention where we are private variables with leading "\_" and public variables without it. But we have missed to comply to the condition for certain variable names "\_\_wargahmarketingTax" which is public.

## Remediation

Remove "\_" from external variable names and add it to private variable names.

Status: **Acknowledged**

### # Constant calculations in the contract

#### Description

recalculated initialization will save 2847 units of gas in deployment

```
uint256 internal _tokenTotal = 100* 10**6 * 10**9;
```

#### Recommendation

Replace the initialization as

```
uint256 internal _tokenTotal = 100000000000000000;
```

Status: **Acknowledged**

# Automatic Testing

## 1- Check for security

0f2d92ab94bdb375d153e4af70a2294126104b6ab6f870a2529ed0a7d5845...

File: WARG... | Language: solidity | Size: 46697 bytes | Date: 2022-03-01T05:26:46.311Z

Critical	High	Medium	Low	Note
0	0	0	0	0

## 2- SOLIDITY STATIC ANALYSIS

SOLIDITY STATIC ANALYSIS

☒ Select all ☒ Autorun 

Run

Security

☒ Select Security

- ☒ Transaction origin:  
'tx.origin' used
- ☒ Check-effects-interaction:  
Potential reentrancy bugs
- ☒ Inline assembly:  
Inline assembly used
- ☒ Block timestamp:  
Can be influenced by miners
- ☒ Low level calls:  
Should only be used by experienced devs
- ☒ Block hash:  
Can be influenced by miners
- ☒ Selfdestruct:  
Contracts using destructed contract can be broken

Gas & Economy

☒ Select Gas & Economy

- ☒ Gas costs:  
Too high gas requirement of functions
- ☒ This on local calls:  
Invocation of local functions via 'this'
- ☒ Delete dynamic array:  
Use require/assert to ensure complete deletion
- ☒ For loop over dynamic array:  
Iterations depend on dynamic array's size
- ☒ Ether transfer in loop:  
Transferring Ether in a for/while/do-while loop

SOLIDITY STATIC ANALYSIS

ERC

☒ Select ERC

- ☒ ERC20:  
'decimals' should be 'uint8'

Miscellaneous

☒ Select Miscellaneous

- ☒ Constant/View/Pure functions:  
Potentially constant/view/pure functions
- ☒ Similar variable names:  
Variable names are too similar
- ☒ No return:  
Function with 'returns' not returning
- ☒ Guard conditions:  
Ensure appropriate use of require/assert
- ☒ Result not used:  
The result of an operation not used
- ☒ String length:  
Bytes length != String length
- ☒ Delete from dynamic array:  
'delete' leaves a gap in array
- ☒ Data truncated:  
Division on int/uint values truncates the result

## 3- Inheritance graph

```
graph TD; WARGAH --> IERC20; WARGAH --> Ownable; WARGAH --> Context; SafeMath; Address; IUniswapV2Factory; IUniswapV2Pair; IUniswapV2Router02 --> IUniswapV2Router01;
```

## 4- SOLIDITY UNIT TESTING

### SOLIDITY UNIT TESTING

Test your smart contract in Solidity.

Select directory to load and generate test files.

Test directory:

☒ Select all

☒ tests/WARGAH\_test.sol

Progress: 1 finished (of 1)

**PASS testSuite**  
**(tests/WARGAH\_test.sol)**

✓ Before all

✖

✓ Check success

✖

✓ Check success2

✖

✓ Check failure

✖

✓ Check sender and value

✖

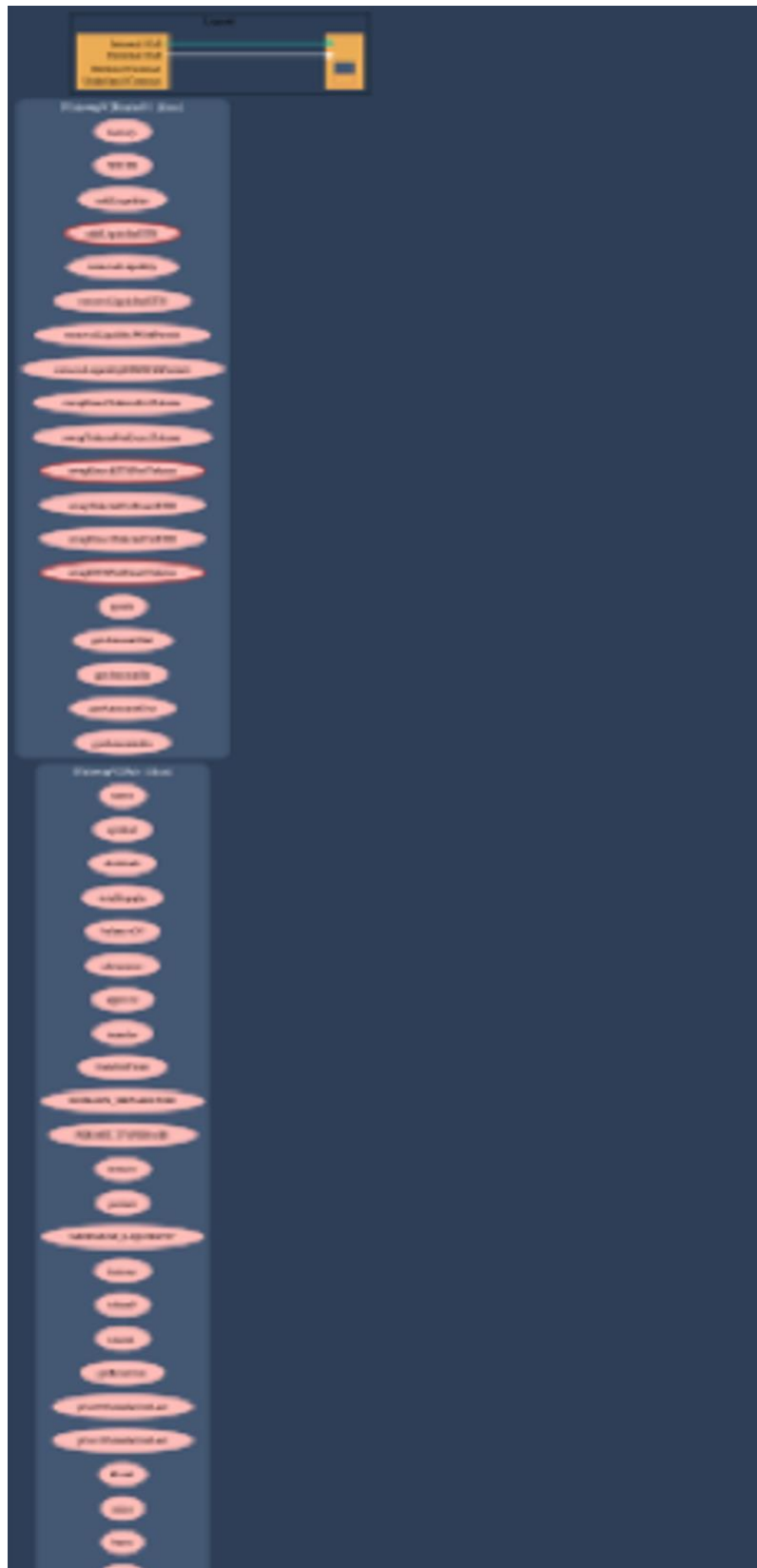
**Result for tests/WARGAH\_test.sol**

Passed: 5

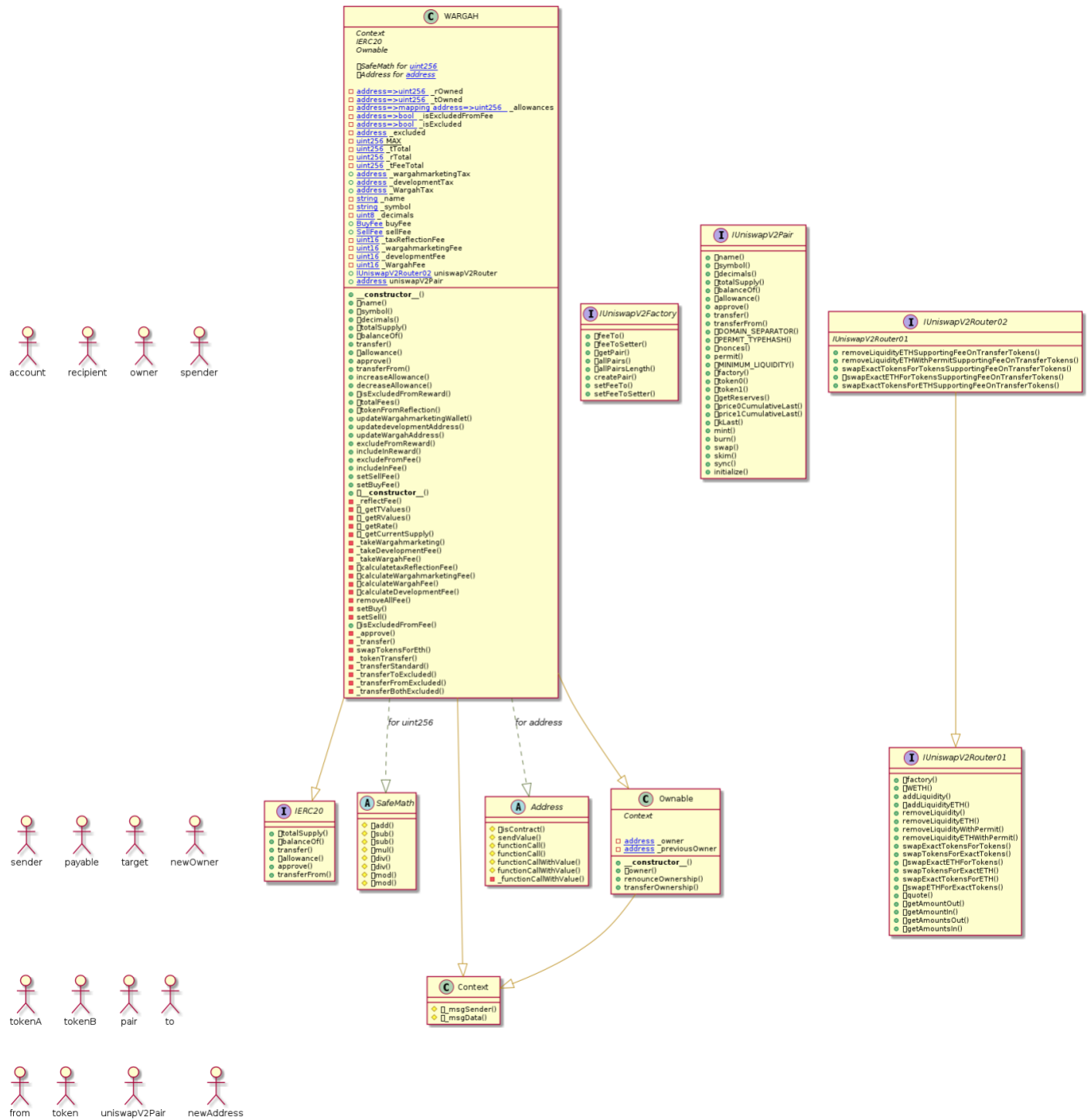
Failed: 0

Time Taken: 0.45s

## 5- Call graph



# Unified Modeling Language (UML)



## Functions signature

Sighash	Function Signature
=====	
11902160	=> _getTVValues(uint256)
16279055	=> isContract(address)
39509351	=> increaseAllowance(address,uint256)
18160ddd	=> totalSupply()
70a08231	=> balanceOf(address)
a9059cbb	=> transfer(address,uint256)
dd62ed3e	=> allowance(address,address)
095ea7b3	=> approve(address,uint256)
23b872dd	=> transferFrom(address,address,uint256)
771602f7	=> add(uint256,uint256)
b67d77c5	=> sub(uint256,uint256)
e31bdc0a	=> sub(uint256,uint256,string)
c8a4ac9c	=> mul(uint256,uint256)
a391c15b	=> div(uint256,uint256)
b745d336	=> div(uint256,uint256,string)
f43f523a	=> mod(uint256,uint256)
71af23e8	=> mod(uint256,uint256,string)
119df25f	=> _msgSender()
8b49d47e	=> _msgData()
24a084df	=> sendValue(address,uint256)
a0b5ffb0	=> functionCall(address,bytes)
241b5886	=> functionCall(address,bytes,string)
2a011594	=> functionCallWithValue(address,bytes,uint256)
d525ab8a	=> functionCallWithValue(address,bytes,uint256,string)
36455e42	=> _functionCallWithValue(address,bytes,uint256,string)
8da5cb5b	=> owner()
715018a6	=> renounceOwnership()
f2fde38b	=> transferOwnership(address)
017e7e58	=> feeTo()
094b7415	=> feeToSetter()
e6a43905	=> getPair(address,address)
1e3dd18b	=> allPairs(uint256)
574f2ba3	=> allPairsLength()
c9c65396	=> createPair(address,address)
f46901ed	=> setFeeTo(address)
a2e74af6	=> setFeeToSetter(address)
06fdde03	=> name()
95d89b41	=> symbol()
313ce567	=> decimals()
3644e515	=> DOMAIN_SEPARATOR()
30adf81f	=> PERMIT_TYPEHASH()
7ecebe00	=> nonces(address)
d505accf	=> permit(address,address,uint256,uint256,uint8,bytes32,bytes32)
ba9a7a56	=> MINIMUM_LIQUIDITY()
c45a0155	=> factory()
0dfe1681	=> token0()
d21220a7	=> token1()
0902f1ac	=> getReserves()
5909c0d5	=> price0CumulativeLast()
5a3d5493	=> price1CumulativeLast()
7464fc3d	=> kLast()
6a627842	=> mint(address)
89afcb44	=> burn(address)
022c0d9f	=> swap(uint256,uint256,address,bytes)



```

bc25cf77 => skim(address)
fff6cae9 => sync()
485cc955 => initialize(address,address)
ad5c4648 => WETH()
e8e33700 =>
addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256)
f305d719 => addLiquidityETH(address,uint256,uint256,uint256,address,uint256)
baa2abde =>
removeLiquidity(address,address,uint256,uint256,uint256,address,uint256)
02751cec => removeLiquidityETH(address,uint256,uint256,uint256,address,uint256)
2195995c =>
removeLiquidityWithPermit(address,address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)
ded9382a =>
removeLiquidityETHWithPermit(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)
38ed1739 => swapExactTokensForTokens(uint256,uint256,address[],address,uint256)
8803dbee => swapTokensForExactTokens(uint256,uint256,address[],address,uint256)
7ff36ab5 => swapExactETHForTokens(uint256,address[],address,uint256)
4a25d94a => swapTokensForExactETH(uint256,uint256,address[],address,uint256)
18cbafe5 => swapExactTokensForETH(uint256,uint256,address[],address,uint256)
fb3bdb41 => swapETHForExactTokens(uint256,address[],address,uint256)
ad615dec => quote(uint256,uint256,uint256)
054d50d4 => getAmountOut(uint256,uint256,uint256)
85f8c259 => getAmountIn(uint256,uint256,uint256)
d06ca61f => getAmountsOut(uint256,address[])
1f00ca74 => getAmountsIn(uint256,address[])
af2979eb =>
removeLiquidityETHSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256)
5b0d5984 =>
removeLiquidityETHWithPermitSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)
5c11d795 =>
swapExactTokensForTokensSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)
b6f9de95 =>
swapExactETHForTokensSupportingFeeOnTransferTokens(uint256,address[],address,uint256)
791ac947 =>
swapExactTokensForETHSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)
a457c2d7 => decreaseAllowance(address,uint256)
88f82020 => isExcludedFromReward(address)
13114a9d => totalFees()
2d838119 => tokenFromReflection(uint256)
b648338d => updateWargahmarketingWallet(address)
b2e9b5d5 => updatedevelopmentAddress(address)
7f6c0da9 => updateWargahAddress(address)
52390c02 => excludeFromReward(address)
3685d419 => includeInReward(address)
437823ec => excludeFromFee(address)
ea2f0b37 => includeInFee(address)
5bcbe877 => setSellFee(uint16,uint16,uint16,uint16)
8dc64439 => setBuyFee(uint16,uint16,uint16,uint16)
184d894e => _reflectFee(uint256,uint256)
99c872a6 => _getRValues(uint256,uint256,uint256,uint256,uint256,uint256)
94e10784 => _getRate()
97a9d560 => _getCurrentSupply()

```

```
8fd47257 => _takeWargahmarketing(uint256)
0196c491 => _takeDevelopmentFee(uint256)
f3e00c1e => _takeWargahFee(uint256)
f11bb032 => calculatetaxReflectionFee(uint256)
92354d3e => calculateWargahmarketingFee(uint256)
680bf56b => calculateWargahFee(uint256)
044cb047 => calculateDevelopmentFee(uint256)
301370af => removeAllFee()
e2437408 => setBuy()
a2b1f062 => setSell()
5342acb4 => isExcludedFromFee(address)
104e81ff => _approve(address,address,uint256)
30e0789e => _transfer(address,address,uint256)
b28805f4 => swapTokensForEth(uint256)
b09bbc79 => _tokenTransfer(address,address,uint256,bool)
2852df65 => _transferStandard(address,address,uint256)
16f1cc83 => _transferToExcluded(address,address,uint256)
c7d9be66 => _transferFromExcluded(address,address,uint256)
6ff6cdf4 => _transferBothExcluded(address,address,uint256)
```

# Automatic general report

## Files Description Table

File Name	SHA-1 Hash
/Users/macbook/Desktop/smart contracts/WARGAH.sol	02a56353b73383943f4ad6739bec48bbce5b6e58

## Contracts Description Table

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

```

| L | feeToSetter | External ! | | NO! |
| L | getPair | External ! | | NO! |
| L | allPairs | External ! | | NO! |
| L | allPairsLength | External ! | | NO! |
| L | createPair | External ! | ● NO! |
| L | setFeeTo | External ! | ● NO! |
| L | setFeeToSetter | External ! | ● NO! |
| | | |
| **IUniswapV2Pair** | Interface | | |
| L | name | External ! | | NO! |
| L | symbol | External ! | | NO! |
| L | decimals | External ! | | NO! |
| L | totalSupply | External ! | | NO! |
| L | balanceOf | External ! | | NO! |
| L | allowance | External ! | | NO! |
| L | approve | External ! | ● NO! |
| L | transfer | External ! | ● NO! |
| L | transferFrom | External ! | ● NO! |
| L | DOMAIN_SEPARATOR | External ! | | NO! |
| L | PERMIT_TYPEHASH | External ! | | NO! |
| L | nonces | External ! | | NO! |
| L | permit | External ! | ● NO! |
| L | MINIMUM_LIQUIDITY | External ! | | NO! |
| L | factory | External ! | | NO! |
| L | token0 | External ! | | NO! |
| L | token1 | External ! | | NO! |
| L | getReserves | External ! | | NO! |
| L | price0CumulativeLast | External ! | | NO! |
| L | price1CumulativeLast | External ! | | NO! |
| L | kLast | External ! | | NO! |
| L | mint | External ! | ● NO! |
| L | burn | External ! | ● NO! |
| L | swap | External ! | ● NO! |
| L | skim | External ! | ● NO! |
| L | sync | External ! | ● NO! |
| L | initialize | External ! | ● NO! |
| | | |
| **IUniswapV2Router01** | Interface | | |
| L | factory | External ! | | NO! |
| L | WETH | External ! | | NO! |
| L | addLiquidity | External ! | ● NO! |
| L | addLiquidityETH | External ! | 11 NO! |
| L | removeLiquidity | External ! | ● NO! |
| L | removeLiquidityETH | External ! | ● NO! |
| L | removeLiquidityWithPermit | External ! | ● NO! |
| L | removeLiquidityETHWithPermit | External ! | ● NO! |
| L | swapExactTokensForTokens | External ! | ● NO! |
| L | swapTokensForExactTokens | External ! | ● NO! |
| L | swapExactETHForTokens | External ! | 11 NO! |
| L | swapTokensForExactETH | External ! | ● NO! |
| L | swapExactTokensForETH | External ! | ● NO! |
| L | swapETHForExactTokens | External ! | 11 NO! |
| L | quote | External ! | | NO! |
| L | getAmountOut | External ! | | NO! |
| L | getAmountIn | External ! | | NO! |
| L | getAmountsOut | External ! | | NO! |
| L | getAmountsIn | External ! | | NO! |
| | | |

```



```

| **IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
| L | removeLiquidityETHSupportingFeeOnTransferTokens | External ! |  | NO! |
| L | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ! |  |
| NO! |
| L | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! |  | NO! |
|
| L | swapExactETHForTokensSupportingFeeOnTransferTokens | External ! |  | NO! |
| L | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! |  | NO! |
| |||||
| **WARGAH** | Implementation | Context, IERC20, Ownable |||
| L | <Constructor> | Public ! |  | NO! |
| L | 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 | increaseAllowance | Public ! |  | NO! |
| L | decreaseAllowance | Public ! |  | NO! |
| L | isExcludedFromReward | Public ! | NO! |
| L | totalFees | Public ! | NO! |
| L | tokenFromReflection | Public ! | NO! |
| L | updateWargahmarketingWallet | External ! |  | onlyOwner |
| L | updatedevelopmentAddress | External ! |  | onlyOwner |
| L | updateWargahAddress | External ! |  | onlyOwner |
| L | excludeFromReward | Public ! |  | onlyOwner |
| L | includeInReward | External ! |  | onlyOwner |
| L | excludeFromFee | Public ! |  | onlyOwner |
| L | includeInFee | Public ! |  | onlyOwner |
| L | setSellFee | External ! |  | onlyOwner |
| L | setBuyFee | External ! |  | onlyOwner |
| L | <Receive Ether> | External ! |  | NO! |
| L | _reflectFee | Private  |  |
| L | _getTValues | Private  |
| L | _getRValues | Private  |
| L | _getRate | Private  |
| L | _getCurrentSupply | Private  |
| L | _takeWargahmarketing | Private  |  |
| L | _takeDevelopmentFee | Private  |  |
| L | _takeWargahFee | Private  |  |
| L | calculatetaxReflectionFee | Private  |
| L | calculateWargahmarketingFee | Private  |
| L | calculateWargahFee | Private  |
| L | calculateDevelopmentFee | Private  |
| L | removeAllFee | Private  |  |
| L | setBuy | Private  |  |
| L | setSell | Private  |  |
| L | isExcludedFromFee | Public ! | NO! |
| L | _approve | Private  |  |
| L | _transfer | Private  |  |
| L | swapTokensForEth | Private  |  |
| L | _tokenTransfer | Private  |  |
| L | _transferStandard | Private  |  |
| L | _transferToExcluded | Private  |  |
| L | _transferFromExcluded | Private  |  |

```

```
| L | _transferBothExcluded | Private  |  | |
```

### Legend

Symbol	Meaning
:-----:	-----
	Function can modify state
	Function is payable

# Conclusion

The contracts are written systematically. Team found no critical issues. So, it is good to go for production and no need for redeploy the contract.

Since possible test cases can be unlimited and developer level documentation (code flow diagram with function level description) not provided, for such an extensive smart contract protocol, we provide no such guarantee of future outcomes. We have used all the latest static tools and manual observations to cover maximum possible test cases to scan Everything.

Security state of the reviewed contract is “secured”.

- ✓ No mint function.
- ✓ No volatile code.
- ✓ Not many high severity issues were found.

# Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against the team on the basis of what it says or doesn't say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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