AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

Stich Inu

DATED : 20 May 23'

AUDIT SUMMARY

Project name – Stich Inu

Date: 20 May, 2023

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

Audit Status: **Passed with Critical Risk**

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	3	0	0	0	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/0x0aFA75d3FA82071FB1698672B52935693c4Bd6CC

Token Information

Token Name : Stitch Inu

Token Symbol: StitchInu

Decimals: 9

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

Token Address:
0x47488a33DF28378a39d632B372E5a868750eb545

Checksum:
955db480be344842251103209eebcfc7002637d6

Owner:
0xBAD8426a1A868115F996fF9DA11DCEfD5B0786Ed

TOKEN OVERVIEW

Fees:

Buy Fees: 0-100%

Sell Fees: 0-100 %

Transfer Fees: 0-100%

Fees Privilige: owner

Ownership : owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: 0-100%

Blacklist: No

Other Priviliges: changing swap threshold - changing fees - changing trade limits

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

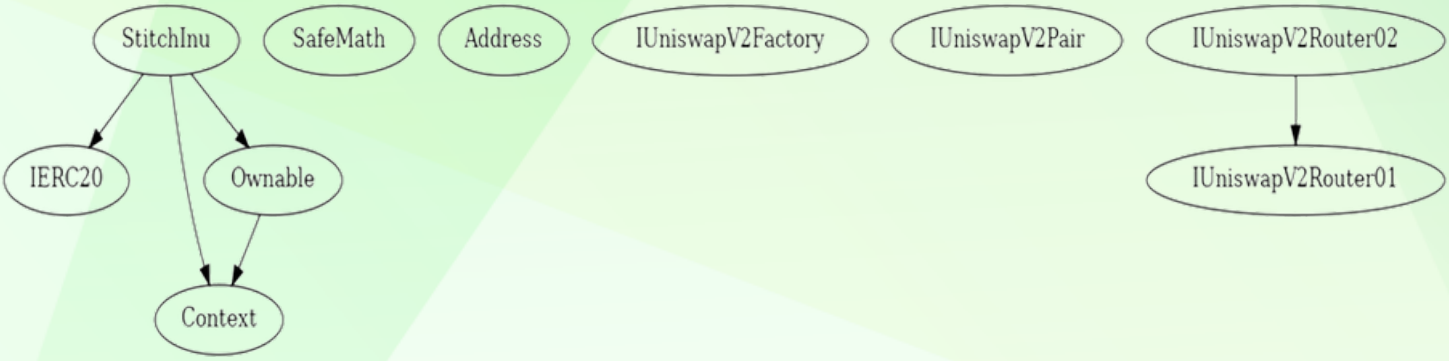
CLASSIFICATION OF RISK

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	3
High-Risk	0
Medium-Risk	0
Low-Risk	0
Gas Optimization / Suggestions	0

INHERITANCE TREE



POINTS TO NOTE

- Tax fee is initially set to 3%
- Development fee is initially set to 3%
- Liquidity fee is initially set to 0%
- Contract owner can exclude and include addresses from rewards
- Contract owner can exclude and include addresses from fees
- Contract owner can set tax fee, development fee, and liquidity fee percentages
- Contract owner can set the maximum transaction amount
- Contract owner can enable or disable swap and liquify functionality
- Swap and liquify is enabled by default
- Maximum transaction amount is initially set to 1,000,000,000,000 tokens
- Number of tokens to sell to add to liquidity is initially set to 1,000,000,000 tokens
- Uniswap V2 router address is set to 0x10ED43C718714eb63d5aA57B78B54704E256024E
- Development wallet address is set to 0x5A3018e513a929A6aa248dD3890573B6a2284a31

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			
└	tryAdd	Internal 🔒		
└	trySub	Internal 🔒		
└	tryMul	Internal 🔒		
└	tryDiv	Internal 🔒		
└	tryMod	Internal 🔒		
└	add	Internal 🔒		
└	sub	Internal 🔒		
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
└	sub	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
Context	Implementation			
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
Address	Library			
└	isContract	Internal 🔒		
└	sendValue	Internal 🔒	🛑	
└	functionCall	Internal 🔒	🛑	
└	functionCall	Internal 🔒	🛑	
└	functionCallWithValue	Internal 🔒	🛑	
└	functionCallWithValue	Internal 🔒	🛑	
└	functionStaticCall	Internal 🔒		
└	functionStaticCall	Internal 🔒		
└	functionDelegateCall	Internal 🔒	🛑	
└	functionDelegateCall	Internal 🔒	🛑	

CONTRACT ASSESMENT

└	_verifyCallResult	Private 🔐		
Ownable	Implementation	Context		
└	<Constructor>	Public ❗	🛑	NO❗
└	owner	Public ❗		NO❗
└	renounceOwnership	Public ❗	🛑	onlyOwner
└	transferOwnership	Public ❗	🛑	onlyOwner
IUniswapV2Factory	Interface			
└	feeTo	External ❗		NO❗
└	feeToSetter	External ❗		NO❗
└	getPair	External ❗		NO❗
└	allPairs	External ❗		NO❗
└	allPairsLength	External ❗		NO❗
└	createPair	External ❗	🛑	NO❗
└	setFeeTo	External ❗	🛑	NO❗
└	setFeeToSetter	External ❗	🛑	NO❗
IUniswapV2Pair	Interface			
└	name	External ❗		NO❗
└	symbol	External ❗		NO❗
└	decimals	External ❗		NO❗
└	totalSupply	External ❗		NO❗
└	balanceOf	External ❗		NO❗
└	allowance	External ❗		NO❗
└	approve	External ❗	🛑	NO❗
└	transfer	External ❗	🛑	NO❗
└	transferFrom	External ❗	🛑	NO❗
└	DOMAIN_SEPARATOR	External ❗		NO❗
└	PERMIT_TYPEHASH	External ❗		NO❗
└	nonces	External ❗		NO❗
└	permit	External ❗	🛑	NO❗
└	MINIMUM_LIQUIDITY	External ❗		NO❗
└	factory	External ❗		NO❗
└	token0	External ❗		NO❗
└	token1	External ❗		NO❗
└	getReserves	External ❗		NO❗
└	price0CumulativeLast	External ❗		NO❗
└	price1CumulativeLast	External ❗		NO❗
└	kLast	External ❗		NO❗
└	mint	External ❗	🛑	NO❗

CONTRACT ASSESMENT

└	burn	External ❗	🛑	NO❗
└	swap	External ❗	🛑	NO❗
└	skim	External ❗	🛑	NO❗
└	sync	External ❗	🛑	NO❗
└	initialize	External ❗	🛑	NO❗
IUniswapV2Router01	Interface			
└	factory	External ❗		NO❗
└	WETH	External ❗		NO❗
└	addLiquidity	External ❗	🛑	NO❗
└	addLiquidityETH	External ❗	💵	NO❗
└	removeLiquidity	External ❗	🛑	NO❗
└	removeLiquidityETH	External ❗	🛑	NO❗
└	removeLiquidityWithPermit	External ❗	🛑	NO❗
└	removeLiquidityETHWithPermit	External ❗	🛑	NO❗
└	swapExactTokensForTokens	External ❗	🛑	NO❗
└	swapTokensForExactTokens	External ❗	🛑	NO❗
└	swapExactETHForTokens	External ❗	💵	NO❗
└	swapTokensForExactETH	External ❗	🛑	NO❗
└	swapExactTokensForETH	External ❗	🛑	NO❗
└	swapETHForExactTokens	External ❗	💵	NO❗
└	quote	External ❗		NO❗
└	getAmountOut	External ❗		NO❗
└	getAmountIn	External ❗		NO❗
└	getAmountsOut	External ❗		NO❗
└	getAmountsIn	External ❗		NO❗
IUniswapV2Router02	Interface	IUniswapV2Router01		
└	removeLiquidityETHSupportingFeeOnTransferTokens	External ❗	🛑	NO❗
└	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External ❗	🛑	NO❗
└	swapExactTokensForTokensSupportingFeeOnTransferTokens	External ❗	🛑	NO❗
└	swapExactETHForTokensSupportingFeeOnTransferTokens	External ❗	💵	NO❗
└	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗	🛑	NO❗
StitchInu	Implementation	Context, IERC20, Ownable		
└	<Constructor>	Public ❗	🛑	NO❗
└	name	Public ❗		NO❗
└	symbol	Public ❗		NO❗
└	decimals	Public ❗		NO❗
└	totalSupply	Public ❗		NO❗
└	balanceOf	Public ❗		NO❗

CONTRACT ASSESMENT

└	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 🔐	🛑	
└	excludeFromFee	Public ❗	🛑	onlyOwner
└	includeInFee	Public ❗	🛑	onlyOwner
└	setTaxFeePercent	External ❗	🛑	onlyOwner
└	setDevelopmentFeePercent	External ❗	🛑	onlyOwner
└	setLiquidityFeePercent	External ❗	🛑	onlyOwner
└	setMaxTxPercent	External ❗	🛑	onlyOwner
└	setSwapAndLiquifyEnabled	Public ❗	🛑	onlyOwner
└	<Receive Ether>	External ❗	💵	NO❗
└	_reflectFee	Private 🔐	🛑	
└	_getValues	Private 🔐		
└	_getTValues	Private 🔐		
└	_getRValues	Private 🔐		
└	_getRate	Private 🔐		
└	_getCurrentSupply	Private 🔐		
└	_takeLiquidity	Private 🔐	🛑	
└	_takeDevelopment	Private 🔐	🛑	
└	calculateTaxFee	Private 🔐		
└	calculateDevelopmentFee	Private 🔐		
└	calculateLiquidityFee	Private 🔐		
└	removeAllFee	Private 🔐	🛑	
└	restoreAllFee	Private 🔐	🛑	
└	isExcludedFromFee	Public ❗		NO❗
└	_approve	Private 🔐	🛑	
└	_transfer	Private 🔐	🛑	
└	swapAndLiquify	Private 🔐	🛑	lockTheSwap
└	swapTokensForEth	Private 🔐	🛑	
└	addLiquidity	Private 🔐	🛑	

CONTRACT ASSESMENT

└	_tokenTransfer	Private 🔐	🛑	
└	_transferStandard	Private 🔐	🛑	
└	_transferToExcluded	Private 🔐	🛑	
└	_transferFromExcluded	Private 🔐	🛑	

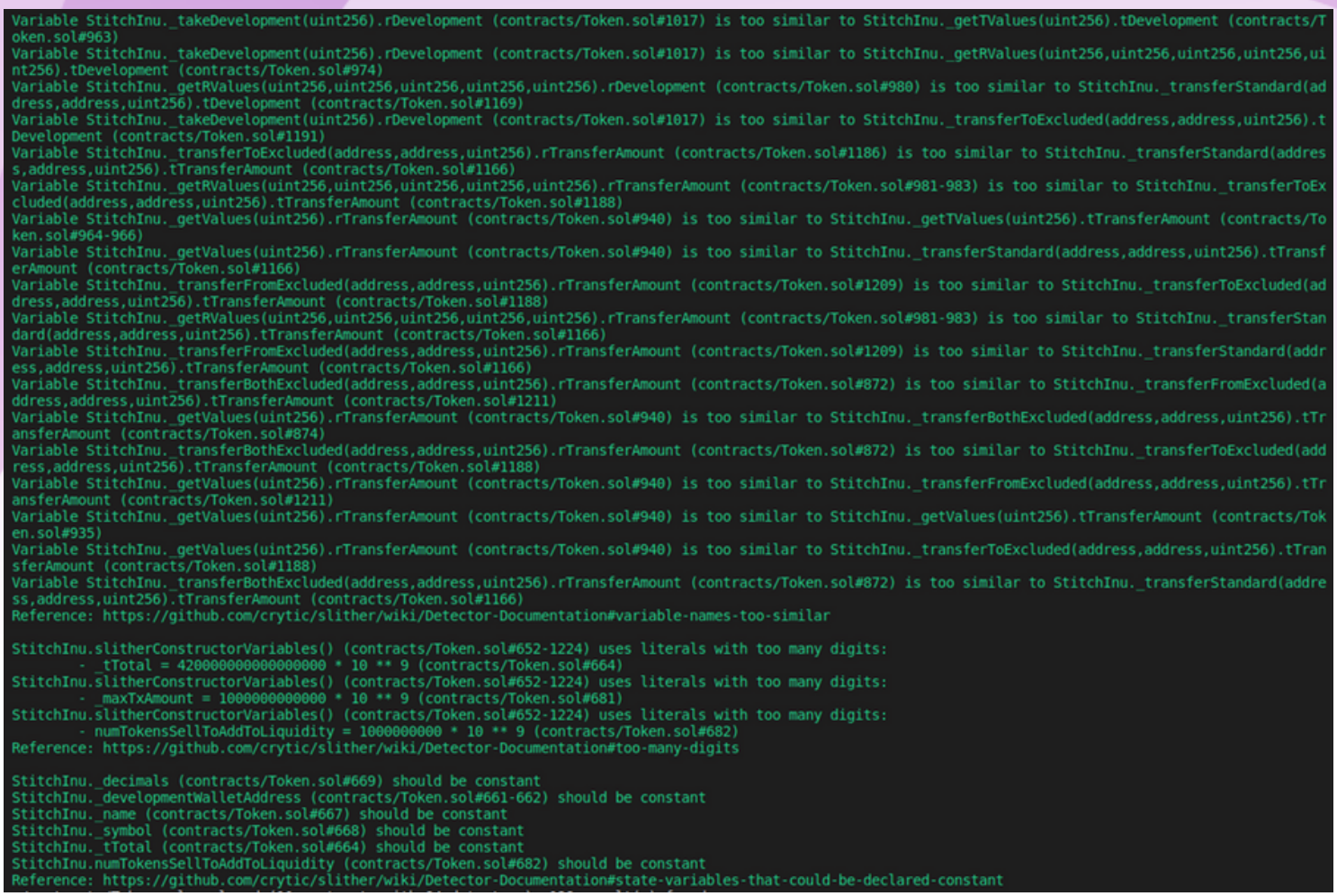
Legend

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

POINTS TO NOTE

- Contract uses SafeMath library for arithmetic operations
- Contract uses Address library for address-related functionalities
- Contract is Ownable, meaning it has an owner with special privileges
- Contract owner can renounce ownership or transfer ownership to another address
- Contract owner can set the minimum tokens before swap
- Contract owner can update the swap and liquify enabled status
- Contract has a receive() function to accept incoming Ether
- Contract has a lockTheSwap modifier to prevent reentrancy in swap and liquify function

STATIC ANALYSIS



```
Variable StitchInu._takeDevelopment(uint256).rDevelopment (contracts/Token.sol#1017) is too similar to StitchInu._getTValues(uint256).tDevelopment (contracts/T
oken.sol#963)
Variable StitchInu._takeDevelopment(uint256).rDevelopment (contracts/Token.sol#1017) is too similar to StitchInu._getRValues(uint256,uint256,uint256,uint256,ui
nt256).tDevelopment (contracts/Token.sol#974)
Variable StitchInu._getRValues(uint256,uint256,uint256,uint256).rDevelopment (contracts/Token.sol#980) is too similar to StitchInu._transferStandard(ad
dress,address,uint256).tDevelopment (contracts/Token.sol#1169)
Variable StitchInu._takeDevelopment(uint256).rDevelopment (contracts/Token.sol#1017) is too similar to StitchInu._transferToExcluded(address,address,uint256).t
Development (contracts/Token.sol#1191)
Variable StitchInu._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1186) is too similar to StitchInu._transferStandard(addres
s,address,uint256).tTransferAmount (contracts/Token.sol#1166)
Variable StitchInu._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#981-983) is too similar to StitchInu._transferToEx
cluded(address,address,uint256).tTransferAmount (contracts/Token.sol#1188)
Variable StitchInu._getValues(uint256).rTransferAmount (contracts/Token.sol#940) is too similar to StitchInu._getTValues(uint256).tTransferAmount (contracts/To
ken.sol#964-966)
Variable StitchInu._getValues(uint256).rTransferAmount (contracts/Token.sol#940) is too similar to StitchInu._transferStandard(address,address,uint256).tTransf
erAmount (contracts/Token.sol#1166)
Variable StitchInu._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1209) is too similar to StitchInu._transferToExcluded(ad
dress,address,uint256).tTransferAmount (contracts/Token.sol#1188)
Variable StitchInu._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#981-983) is too similar to StitchInu._transferStan
dard(address,address,uint256).tTransferAmount (contracts/Token.sol#1166)
Variable StitchInu._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1209) is too similar to StitchInu._transferStandard(addr
ess,address,uint256).tTransferAmount (contracts/Token.sol#1166)
Variable StitchInu._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#872) is too similar to StitchInu._transferFromExcluded(a
ddress,address,uint256).tTransferAmount (contracts/Token.sol#1211)
Variable StitchInu._getValues(uint256).rTransferAmount (contracts/Token.sol#940) is too similar to StitchInu._transferBothExcluded(address,address,uint256).tTr
ansferAmount (contracts/Token.sol#874)
Variable StitchInu._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#872) is too similar to StitchInu._transferToExcluded(add
ress,address,uint256).tTransferAmount (contracts/Token.sol#1188)
Variable StitchInu._getValues(uint256).rTransferAmount (contracts/Token.sol#940) is too similar to StitchInu._transferFromExcluded(address,address,uint256).tTr
ansferAmount (contracts/Token.sol#1211)
Variable StitchInu._getValues(uint256).rTransferAmount (contracts/Token.sol#940) is too similar to StitchInu._getValues(uint256).tTransferAmount (contracts/Tok
en.sol#935)
Variable StitchInu._getValues(uint256).rTransferAmount (contracts/Token.sol#940) is too similar to StitchInu._transferToExcluded(address,address,uint256).tTran
sferAmount (contracts/Token.sol#1188)
Variable StitchInu._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#872) is too similar to StitchInu._transferStandard(addre
ss,address,uint256).tTransferAmount (contracts/Token.sol#1166)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

StitchInu.slitherConstructorVariables() (contracts/Token.sol#652-1224) uses literals with too many digits:
        - _tTotal = 420000000000000000 * 10 ** 9 (contracts/Token.sol#664)
StitchInu.slitherConstructorVariables() (contracts/Token.sol#652-1224) uses literals with too many digits:
        - _maxTxAmount = 1000000000000 * 10 ** 9 (contracts/Token.sol#681)
StitchInu.slitherConstructorVariables() (contracts/Token.sol#652-1224) uses literals with too many digits:
        - numTokensSellToAddToLiquidity = 1000000000 * 10 ** 9 (contracts/Token.sol#682)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

StitchInu._decimals (contracts/Token.sol#669) should be constant
StitchInu._developmentWalletAddress (contracts/Token.sol#661-662) should be constant
StitchInu._name (contracts/Token.sol#667) should be constant
StitchInu._symbol (contracts/Token.sol#668) should be constant
StitchInu._tTotal (contracts/Token.sol#664) should be constant
StitchInu.numTokensSellToAddToLiquidity (contracts/Token.sol#682) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
```

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/0x2dfb91488258207abc4ade19e9e644f2498caeffae6928e00b76695905700eb0

2- Buying when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0xe6dfea296bdd90de03a84476739e36240df433a8c40615fce63a7f5f99755be8

3- Selling when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x5868b32394610b740fa2c47e2cd5351309995d2c2207a5696dee3812b51dd75c

4- Transferring when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0xfebf8d3db996af9fa466663c8c70b2659f8bfda546f5cec0bd0b52aa074eaf90

5- Buying when not excluded (0-12.5% tax) (passed):
https://testnet.bscscan.com/tx/0xaf6860b3a4bfb7e6d011ad9c51dde82aec89082221fc8fe8857bd879668258ca

6- Selling when not excluded (0-12.5% tax) (passed):
https://testnet.bscscan.com/tx/0x0fa9002bc8f27388df3b0a8b03f4ed7763843ec9c71a04fb7a22f21c27d36bd0

FUNCTIONAL TESTING

7- Transferring when not excluded (0-5% tax) (passed):
https://testnet.bscscan.com/tx/0xcafca8d6ed4265fa22c94a83356d5d9c3749670bf281eeaa7b11c455b35472ca

8- Internal swap (marketing) (passed):
https://testnet.bscscan.com/tx/0x0fa9002bc8f27388df3b0a8b03f4ed7763843ec9c71a04fb7a22f21c27d36bd0

ISSUES FOUND

Category: Centralization
Subject: Excessive fees
Severity: **Critical**
Overview:
Owner is able to set buy/sell/transfer fees up to 100%

Code:
- setTaxFeePercent(uint256 taxFee)
- setDevelopmentFeePercent(uint256 developmentFee)
- setLiquidityFeePercent(uint256 liquidityFee)

Suggestion:
Implement a limit for max amount of buy/sell/transfer fees.
Buy + sell fees <= 25%
Transfer fees <= 5%

ISSUES FOUND

Category: Centralization
Subject: Limits
Severity: Critical
Overview:
The contract has an owner can set limit max number of tokens that can be transferred/bought/sold. This limit can be set to 0 which disables all sells/buys/transfers for all the holders except owner.

Code:
- setMaxTxPercent(uint256 maxTxPercent)

Suggestion:
Ensure that max tx is within a safe range :
total supply / 1000 <= max Tx <= total supply / 100

ISSUES FOUND

Category: **Centralization**
Subject: Invalid numTokensSellToAddToLiquidity
Severity: **Critical**
Overview:
swap & liquify threshold is constant and can not be changed later, but its set to 1000000000 * 10 ** 18 which is in invalid value and never will be reached.

Code:
- setMaxTxPercent(uint256 maxTxPercent)

Suggestion:
Change **numTokensSellToAddToLiquidity** to 1000000000 * 10 ** 9

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