AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

Lisa Doge Inu

DATED : 11 APRIL 23'

AUDIT SUMMARY

Project name – Lisa Doge Inu

Date:11 April, 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	0	0	0	0
Acknowledged	0	0	0	0	0
Resolved	0	2	0	0	0

USED TOOLS

Tools:

1- Manual Review:
a line by line code review has been performed by audit ace team.

2- BSC Testnet 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 Link: Contract has been tested on binance smart chain testnet which can be found in below link:
https://testnet.bscscan.com/token/0xa396d07C43a8FE26e4fFD250C945E8c5E12feE0f

Token Information

Token Name : Lisa Doge Inu

Token Symbol: LDOGE

Decimals: 9

Token Supply: 10,000,000,000

Token Address:
0x567F50fDA493627B62F4e45552eF45aa5ff5857a

Checksum:
ece917b221b7ffe4ad2ca8ffcc8cbe0f33526d60

Owner:
0xF56E59CBFF36B4edFc1Da9eF791A154851EF323e
(at time of audit)

TOKEN OVERVIEW

Fees:

Buy Fees: 5%

Sell Fees: 5%

Transfer Fees: 0%

Fees Privilege: None

Ownership: Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: including and excluding form fee - changing swap threshold - 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

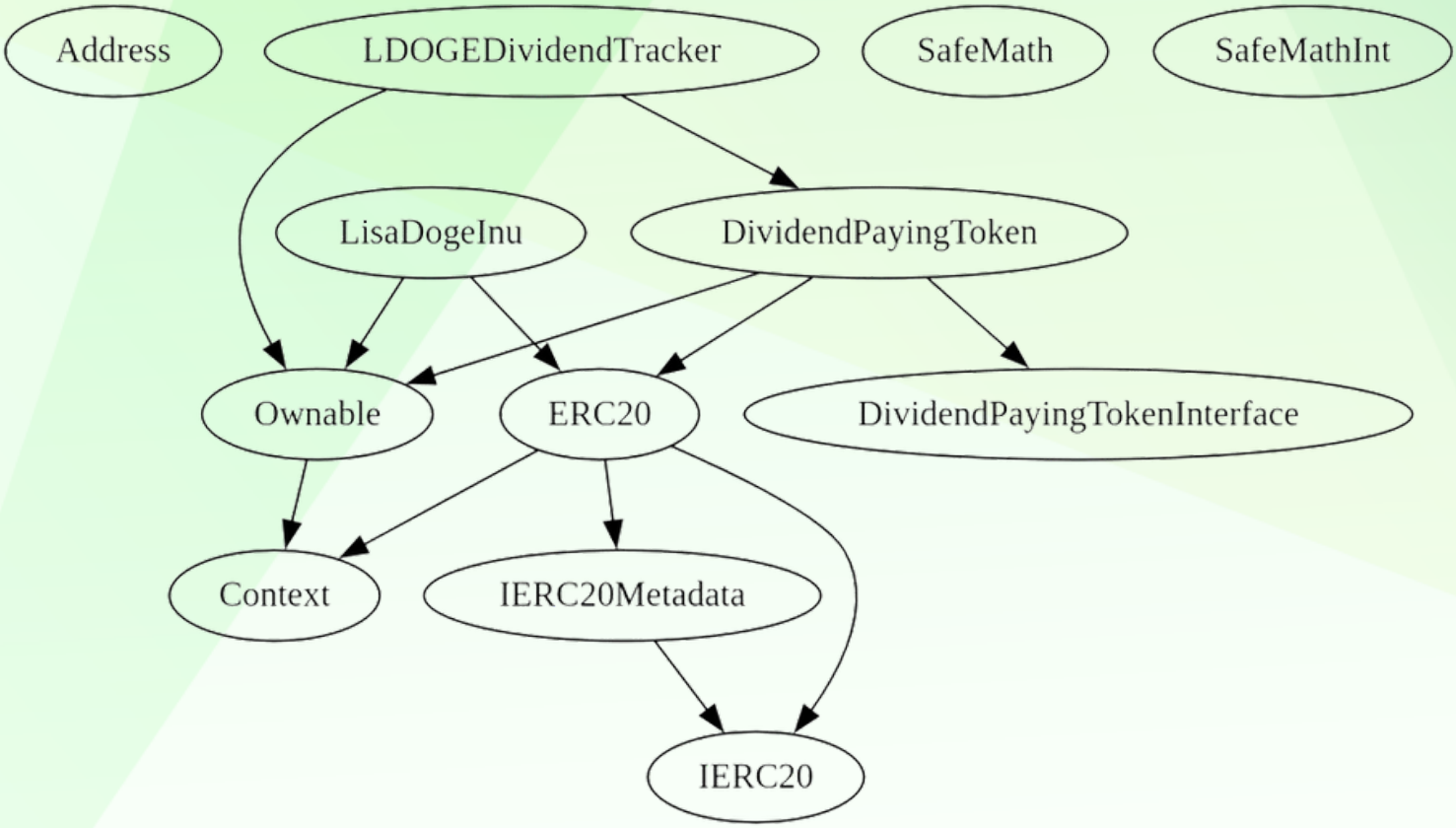
CLASSIFICATION OF RISK

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	2
Medium-Risk	0
Low-Risk	0
Gas Optimization / Suggestions	0

INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to modify buy/sell fees (5% for each)
- Owner is not able to set transfer fees (0% always)
- Owner is not able to set max buy/sell/transfer/hold an amount
- Owner is not able to blacklist an arbitrary wallet
- Owner is not able to disable trades
- Owner is not able to mint new tokens
- **Owner must enable trading for investors**

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
Address	Library			
└	sendValue	Internal 🔒	🛑	
LisaDogeInu	Implementation	ERC20, Ownable		
└	<Constructor>	Public ❗	🛑	ERC20
└	<Receive Ether>	External ❗	💵	NO ❗
└	updateDividendTracker	Public ❗	🛑	onlyOwner
└	processDividendTracker	External ❗	🛑	NO ❗
└	claim	External ❗	🛑	NO ❗
└	rescueBEP20Tokens	External ❗	🛑	onlyOwner
└	forceSend	External ❗	🛑	NO ❗
└	excludeFromFees	Public ❗	🛑	onlyOwner
└	excludeMultipleAccountsFromFees	Public ❗	🛑	onlyOwner
└	excludeFromDividends	External ❗	🛑	onlyOwner
└	setMarketingWallet	External ❗	🛑	onlyOwner
└	setSwapTokensAtAmount	External ❗	🛑	onlyOwner
└	setSwapEnabled	External ❗	🛑	onlyOwner
└	enableTradingEnabled	External ❗	🛑	onlyOwner
└	setAntiBotBlocks	External ❗	🛑	onlyOwner
└	setMinBalanceForDividends	External ❗	🛑	onlyOwner
└	_setAutomatedMarketMakerPair	Private 🔐	🛑	
└	setGasForProcessing	External ❗	🛑	onlyOwner
└	setClaimWait	External ❗	🛑	onlyOwner
└	getClaimWait	External ❗		NO ❗
└	getTotalDividendsDistributed	External ❗		NO ❗
└	isExcludedFromFees	Public ❗		NO ❗
└	withdrawableDividendOf	Public ❗		NO ❗
└	getCurrentRewardToken	External ❗		NO ❗
└	dividendTokenBalanceOf	Public ❗		NO ❗
└	getAccountDividendsInfo	External ❗		NO ❗
└	getAccountDividendsInfoAtIndex	External ❗		NO ❗
└	getLastProcessedIndex	External ❗		NO ❗
└	getNumberOfDividendTokenHolders	External ❗		NO ❗
└	_transfer	Internal 🔒	🛑	
└	swapAndLiquify	Private 🔐	🛑	
└	swapTokensForBNB	Private 🔐	🛑	
└	addLiquidity	Private 🔐	🛑	
LDOGEDividendTracker	Implementation	Ownable, DividendPayingToken		

CONTRACT ASSESMENT

└	<Constructor>	Public ❗	🛑	DividendPayingToken
└	_transfer	Internal 🔒		
└	setMinBalanceForDividends	External ❗	🛑	onlyOwner
└	excludeFromDividends	External ❗	🛑	onlyOwner
└	updateClaimWait	External ❗	🛑	onlyOwner
└	getLastProcessedIndex	External ❗	|NO ❗	
└	getNumberOfTokenHolders	External ❗	|NO ❗	
└	getCurrentRewardToken	External ❗	|NO ❗	
└	getAccount	Public ❗	|NO ❗	
└	getAccountAtIndex	Public ❗	|NO ❗	
└	canAutoClaim	Private 🔐		
└	setBalance	Public ❗	🛑	onlyOwner
└	process	Public ❗	🛑 |NO ❗	
└	processAccount	Public ❗	🛑	onlyOwner
DividendPayingToken	Implementation	ERC20, DividendPayingTokenInterface, Ownable		
└	<Constructor>	Public ❗	🛑	ERC20
└	<Receive Ether>	External ❗	💵 |NO ❗	
└	distributeDividends	Public ❗	💵 |NO ❗	
└	_withdrawDividendOfUser	Internal 🔒	🛑	
└	setRewardToken	External ❗	🛑	onlyOwner
└	swapBnbForCustomToken	Internal 🔒	🛑	
└	dividendOf	Public ❗	|NO ❗	
└	withdrawableDividendOf	Public ❗	|NO ❗	
└	withdrawnDividendOf	Public ❗	|NO ❗	
└	accumulativeDividendOf	Public ❗	|NO ❗	
└	_transfer	Internal 🔒	🛑	
└	_tokengeneration	Internal 🔒	🛑	
└	_burn	Internal 🔒	🛑	
└	_setBalance	Internal 🔒	🛑	
ERC20	Implementation	Context, IERC20, IERC20Metadata		
└	<Constructor>	Public ❗	🛑 |NO ❗	
└	name	Public ❗	|NO ❗	
└	symbol	Public ❗	|NO ❗	
└	decimals	Public ❗	|NO ❗	
└	totalSupply	Public ❗	|NO ❗	
└	balanceOf	Public ❗	|NO ❗	
└	transfer	Public ❗	🛑 |NO ❗	
└	allowance	Public ❗	|NO ❗	
└	approve	Public ❗	🛑 |NO ❗	

CONTRACT ASSESMENT

└	transferFrom	Public ❗	🛑	NO ❗
└	increaseAllowance	Public ❗	🛑	NO ❗
└	decreaseAllowance	Public ❗	🛑	NO ❗
└	_transfer	Internal 🔒	🛑	
└	_tokengeneration	Internal 🔒	🛑	
└	_burn	Internal 🔒	🛑	
└	_approve	Internal 🔒	🛑	
└	_beforeTokenTransfer	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 ❗
Context	Implementation			
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
SafeMath	Library			
└	add	Internal 🔒		
└	sub	Internal 🔒		
└	sub	Internal 🔒		
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
└	mod	Internal 🔒		
SafeMathInt	Library			
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	sub	Internal 🔒		
└	add	Internal 🔒		
└	abs	Internal 🔒		

CONTRACT ASSESMENT

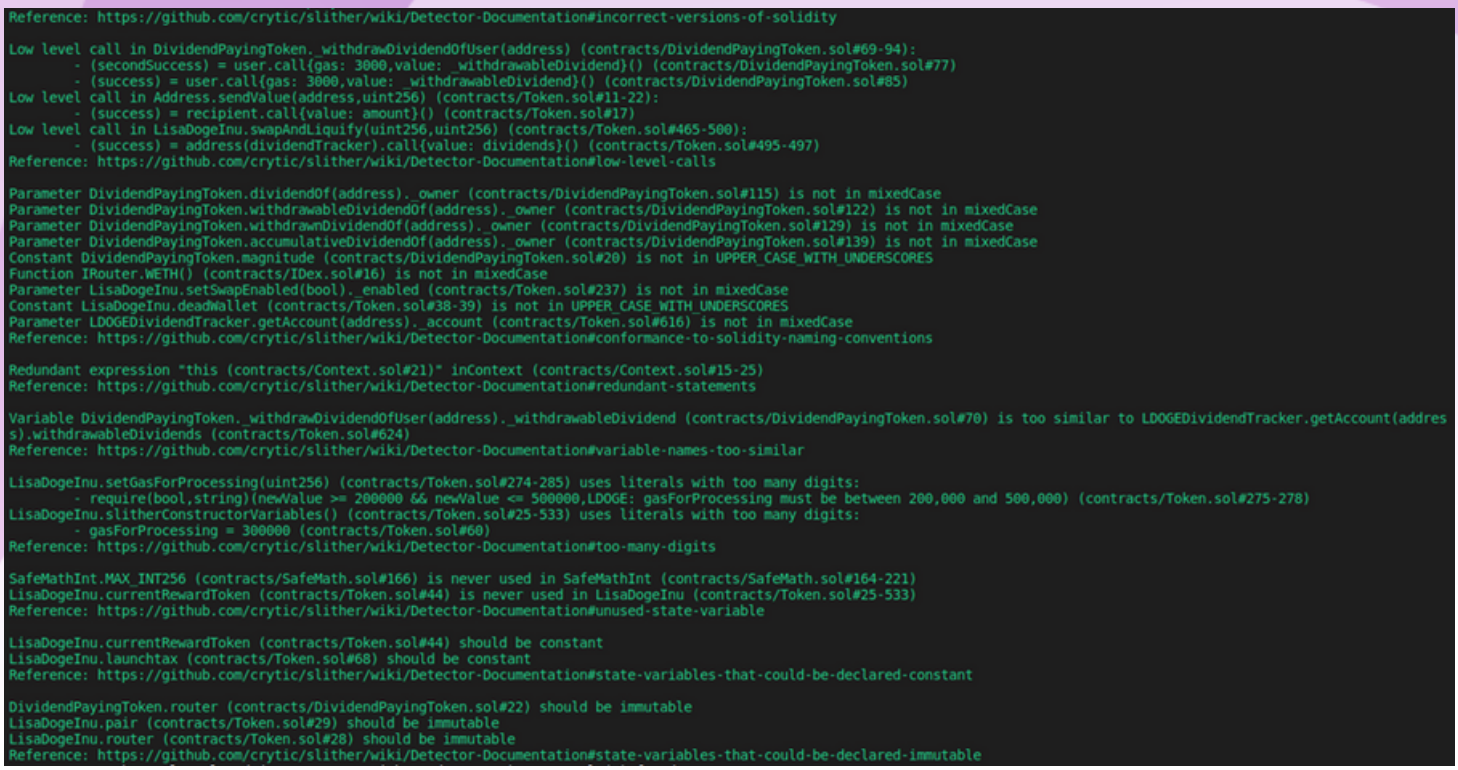
└	toUint256Safe	Internal 🔒			
SafeMathUint	Library				
└	toInt256Safe	Internal 🔒			
DividendPayingTokenInterface	Interface				
└	dividendOf	External ❗		|NO ❗	
└	distributeDividends	External ❗		💵 |NO ❗	
└	withdrawableDividendOf	External ❗		|NO ❗	
└	withdrawnDividendOf	External ❗		|NO ❗	
└	accumulativeDividendOf	External ❗		|NO ❗	
Ownable	Implementation	Context			
└	<Constructor>	Public ❗		🛑 |NO ❗	
└	owner	Public ❗		|NO ❗	
└	renounceOwnership	Public ❗		🛑	onlyOwner	
└	transferOwnership	Public ❗		🛑	onlyOwner	
IPair	Interface				
└	sync	External ❗		🛑 |NO ❗	
IFactory	Interface				
└	createPair	External ❗		🛑 |NO ❗	
└	getPair	External ❗		|NO ❗	
IRouter	Interface				
└	factory	External ❗		|NO ❗	
└	WETH	External ❗		|NO ❗	
└	addLiquidityETH	External ❗		💵 |NO ❗	
└	swapExactTokensForTokensSupportingFeeOnTransferTokens	External ❗		🛑 |NO ❗	
└	swapExactETHForTokens	External ❗		💵 |NO ❗	
└	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗		🛑 |NO ❗	
IterableMapping	Library				
└	get	Internal 🔒			
└	getIndexOfKey	Internal 🔒			
└	getKeyAtIndex	Internal 🔒			
└	size	Internal 🔒			
└	set	Internal 🔒		🛑	
└	remove	Internal 🔒		🛑	

Legend

CONTRACT ASSESMENT

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

STATIC ANALYSIS



```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Low level call in DividendPayingToken._withdrawDividendOfUser(address) (contracts/DividendPayingToken.sol#69-94):
        - (secondSuccess) = user.call{gas: 3000,value: _withdrawableDividend}() (contracts/DividendPayingToken.sol#77)
        - (success) = user.call{gas: 3000,value: _withdrawableDividend}() (contracts/DividendPayingToken.sol#85)
Low level call in Address.sendValue(address,uint256) (contracts/Token.sol#11-22):
        - (success) = recipient.call{value: amount}() (contracts/Token.sol#17)
Low level call in LisaDogeInu.swapAndLiquify(uint256,uint256) (contracts/Token.sol#465-500):
        - (success) = address(dividendTracker).call{value: dividends}() (contracts/Token.sol#495-497)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Parameter DividendPayingToken.dividendOf(address)._owner (contracts/DividendPayingToken.sol#115) is not in mixedCase
Parameter DividendPayingToken.withdrawableDividendOf(address)._owner (contracts/DividendPayingToken.sol#122) is not in mixedCase
Parameter DividendPayingToken.withdrawnDividendOf(address)._owner (contracts/DividendPayingToken.sol#129) is not in mixedCase
Parameter DividendPayingToken.accumulativeDividendOf(address)._owner (contracts/DividendPayingToken.sol#139) is not in mixedCase
Constant DividendPayingToken.magnitude (contracts/DividendPayingToken.sol#20) is not in UPPER_CASE_WITH_UNDERSCORES
Function IRouter.WETH() (contracts/IDex.sol#16) is not in mixedCase
Parameter LisaDogeInu.setSwapEnabled(bool)._enabled (contracts/Token.sol#237) is not in mixedCase
Constant LisaDogeInu.deadWallet (contracts/Token.sol#38-39) is not in UPPER_CASE_WITH_UNDERSCORES
Parameter LDOGEDividendTracker.getAccount(address)._account (contracts/Token.sol#616) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Context.sol#21)" inContext (contracts/Context.sol#15-25)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

Variable DividendPayingToken._withdrawDividendOfUser(address)._withdrawableDividend (contracts/DividendPayingToken.sol#70) is too similar to LDOGEDividendTracker.getAccount(addres
s).withdrawableDividends (contracts/Token.sol#624)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

LisaDogeInu.setGasForProcessing(uint256) (contracts/Token.sol#274-285) uses literals with too many digits:
        - require(bool,string)(newValue >= 200000 && newValue <= 500000,LDOGE: gasForProcessing must be between 200,000 and 500,000) (contracts/Token.sol#275-278)
LisaDogeInu.slitherConstructorVariables() (contracts/Token.sol#25-533) uses literals with too many digits:
        - gasForProcessing = 300000 (contracts/Token.sol#60)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

SafeMathInt.MAX_INT256 (contracts/SafeMath.sol#166) is never used in SafeMathInt (contracts/SafeMath.sol#164-221)
LisaDogeInu.currentRewardToken (contracts/Token.sol#44) is never used in LisaDogeInu (contracts/Token.sol#25-533)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable

LisaDogeInu.currentRewardToken (contracts/Token.sol#44) should be constant
LisaDogeInu.launchtax (contracts/Token.sol#68) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

DividendPayingToken.router (contracts/DividendPayingToken.sol#22) should be immutable
LisaDogeInu.pair (contracts/Token.sol#29) should be immutable
LisaDogeInu.router (contracts/Token.sol#28) 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 issues found

FUNCTIONAL TESTING

1- Adding liquidity (passed):
https://testnet.bscscan.com/tx/0x617e07547f1d0c67c5f1b3970628aeed56650c4141642aa52ace0bf4afd4514b

2- Buying when excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0x7f9e52019d000985881a1f1a0be4e3ca92a73dffe40e6dc36f1506959cc40a79

3- Selling when excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0xdead76a788096cd74df3f3b57e2f36fa5860b1c2122d38ed7f775a96bc1ce7f9

4- Transferring when excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0xceab169f492358f918f695e2f7b8b5b13446dfc1677e8d3b827bf07019649 5f2

5- Buying when not excluded from fees (5% tax) (passed):
https://testnet.bscscan.com/tx/0x6b3728f3387a721bb1e977e9aac9d24a4821f9fdd953d11605747da4cc63c012

6- Selling when not excluded from fees (5% tax) (passed):
https://testnet.bscscan.com/tx/0x82d718e2783dfb8f0403d311f953ebdc490cd632c12fbb2cc0c83cdc76593827

7- Transferring when not excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0x576e04c13b5ea43dcf79e55f85f0c784b066e91f118a26ef05511c0ff19244fe

FUNCTIONAL TESTING

8- Internal swap (passed):

fee wallets received BNB

https://testnet.bscscan.com/address/0x294082a1aa35a7f513c05cb2fdb048fa1b2c9f88#internaltx

9- Distribution of rewards (passed):

BUSD tokens are distributed between holders, this can be seen in this transaction

main token uses Doge coin for reflections, however since dogecoin is not available on testnet, we used BUSD as an example (no difference in logic and code implementation).

https://testnet.bscscan.com/tx/0x82d718e2783dfb8f0403d311f953ebdc490cd632c12fbb2cc0c83cdc76593827

10- Auto liquidity (passed):

Liquidity is added successfully and generated pool shares are burned

https://testnet.bscscan.com/tx/0x82d718e2783dfb8f0403d311f953ebdc490cd632c12fbb2cc0c83cdc76593827

MANUAL TESTING

Centralization - Owner must enable trading

Severity: High

Function: enableTradingEnabled

Lines: 213

Status: Resolved

Overview:

The owner must activate trading for investors to buy, sell, or transfer tokens. If trading remains disabled, token holders will be unable to trade their tokens.

```
function enableTradingEnabled() external onlyOwner {
    require(!tradingEnabled, "Trading is already enabled");
    tradingEnabled = true;
    startTradingBlock = block.number;
}
```

Recommendation:

Incorporate a safety mechanism that allows investors to activate trading if a specified duration has elapsed since the conclusion of the presale or consider alternative ways such as allowing trades ater investors claimed their presale tokens.

Allevation:

Contract is owned by Safu Dev, hence enabling trade is guaranteed

MANUAL TESTING

Logical - Setting internal swap threshold to 0 can disable sells

Severity: High

Function: setSwapThreshold

Lines: 209

Status: Resolved

If the **swaptokensAtAmount** is set to 0, sell transactions will fail at the _transfer function. This occurs because the checks for performing a swapAndLiquify will still pass even if the swapThreshold is set to 0 and the contract has 0 tokens. Consequently, the transaction will fail while attempting to swap 0 tokens (i.e., **swaptokensAtAmount**) to BNB. Additionally, setting the swapThreshold to an excessively large number leads to a high slippage percentage during sell transactions.

```
function setSwapTokensAtAmount(uint256 amount) external onlyOwner {
  require(amount < 1e8,"Swap Threshold should be less than 1% of total supply");
  swapTokensAtAmount = amount * 10**9;
}
```

Recommendation:

Ensure that the swapThreshold is set to a value greater than a reasonable minimum and less than a reasonable maximum. This will help prevent issues related to disabled sell transactions or high slippage percentages during trades.

Allevation:

Contract is owned by Safu Dev, swap threshold will remain in a logical range

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