



Smart Contract Audit

FOR
LUCKYPEPE

DATED : 8 MAY 23'



AUDIT SUMMARY

Project name – LUCKYPEPE

Date: 8 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	0	0	0	0	1
Acknowledged	0	0	0	0	0
Resolved	0	1	0	0	0

USED TOOLS

Tools:

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



Token Information

Name : Lucky Pepe

Symbol : LUCKYPEPE

Decimals: 9

Network: Binance smart chain

Token Type: BEP20

Token Address : ---

Owner: ---

Deployer: ---



Token Information

Fees:

Buy Fees: 0%

Sell Fees: Up to 10%

Transfer Fees: 0%

Fees Privilege: Owner

Ownership : Owned

Minting: None

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges:Enabling trades - changing sell fees



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 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 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

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.

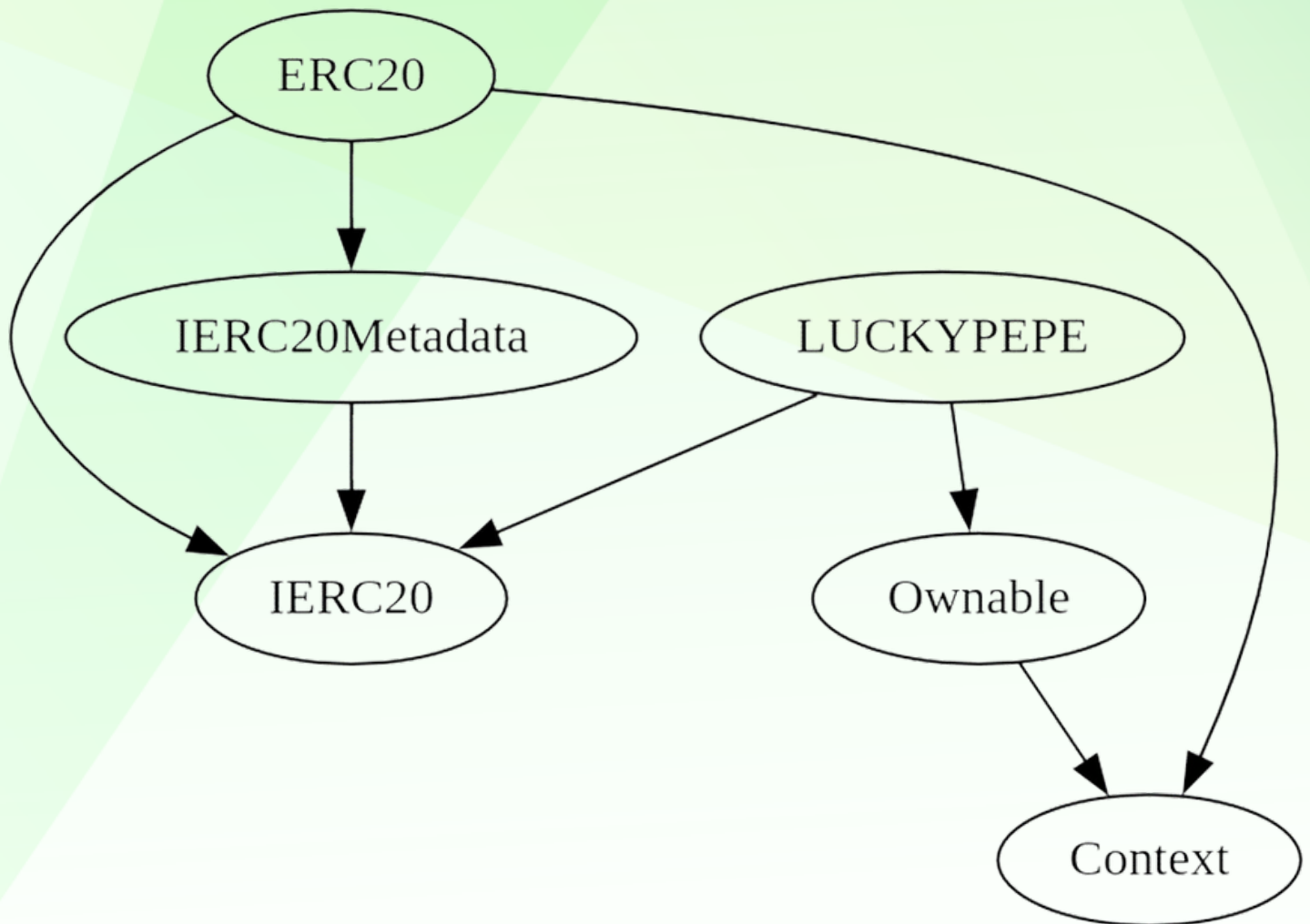
Findings

Severity

Found

◆ Critical	0
◆ High-Risk	1
◆ Medium-Risk	0
◆ Low-Risk	0
◆ Gas Optimization / Suggestions	1

INHERITANCE TREE





POINTS TO NOTE

- Owner is not able to set set sell tax over 10% (until 7 days after launch)
 - Owner is not able to set buy or transfer tax (0% both)
 - Owner is not able to set a max buy/transfer/wallet/sell 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 trades for holders to be able to trade**
-



CONTRACT ASSESMENT

Contract	Type	Bases			
----- ----- ----- ----- -----					
L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	
	LUCKYPEPE Implementation IERC20, Ownable				
L	<Constructor>	Public !	●	NO !	
L	<Receive Ether>	External !	📦	NO !	
L	totalSupply	External !		NO !	
L	name	Public !		NO !	
L	symbol	Public !		NO !	
L	decimals	Public !		NO !	
L	balanceOf	Public !		NO !	
L	allowance	External !		NO !	
L	approve	Public !	●	NO !	
L	_approve	Internal 🔒	●		
L	approveMax	External !	●	NO !	
L	transfer	External !	●	NO !	
L	transferFrom	External !	●	NO !	
L	_transferFrom	Internal 🔒	●		
L	takeFee	Internal 🔒	●		
L	_basicTransfer	Internal 🔒	●		
L	shouldTakeFee	Internal 🔒			
L	shouldDoContractSwap	Internal 🔒			
L	isFeeExcluded	Public !		NO !	
L	doContractSwap	Internal 🔒	●	swapping	
L	swapTokensForEth	Private 🔒	●		
L	setIsFeeExempt	External !	●	onlyOwner	
L	setDoContractSwap	External !	●	onlyOwner	
L	changeMarketingWallet	External !	●	onlyOwner	
L	changeSellFees	External !	●	onlyOwner	
L	enableTrading	External !	●	onlyOwner	
L	setAuthorizedWallets	External !	●	onlyOwner	
L	rescueBNB	External !	●	onlyOwner	
L	changePair	External !	●	onlyOwner	
	IUniswapV2Router01 Interface				
L	factory	External !		NO !	
L	WETH	External !		NO !	
L	addLiquidity	External !	●	NO !	
L	addLiquidityETH	External !	📦	NO !	
L	removeLiquidity	External !	●	NO !	
L	removeLiquidityETH	External !	●	NO !	

CONTRACT ASSESMENT

```

└─ 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 ! |
|||||
**UniswapV2Caller** | Implementation | |||
└─ swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! | ● |NO ! |
└─ swapExactTokensForTokens | External ! | ● |NO ! |
|||||
**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 ! |
└─ transferFrom | Public ! | ● |NO ! |
└─ increaseAllowance | Public ! | ● |NO ! |
└─ decreaseAllowance | Public ! | ● |NO ! |
└─ _transfer | Internal 🔒 | ● ||
└─ _mint | Internal 🔒 | ● ||
└─ _burn | Internal 🔒 | ● ||

```



CONTRACT ASSESMENT

```
| L | _approve | Internal | 🔒 | ● | |
| L | _spendAllowance | Internal | 🔒 | ● | |
| L | _beforeTokenTransfer | Internal | 🔒 | ● | |
| L | _afterTokenTransfer | Internal | 🔒 | ● | |
|||||
| **IERC20** | Interface | |||
| L | totalSupply | External | ! | | NO ! |
| L | balanceOf | External | ! | | NO ! |
| L | transfer | External | ! | ● | NO ! |
| L | allowance | External | ! | | NO ! |
| L | approve | External | ! | ● | NO ! |
| L | transferFrom | External | ! | ● | NO ! |
|||||
| **IERC20Metadata** | Interface | IERC20 |||
| L | name | External | ! | | NO ! |
| L | symbol | External | ! | | NO ! |
| L | decimals | External | ! | | NO ! |
|||||
| **Context** | Implementation | |||
| L | _msgSender | Internal | 🔒 | | |
| L | _msgData | Internal | 🔒 | | |
|||||
| **Ownable** | Implementation | Context |||
| L | <Constructor> | Public | ! | ● | NO ! |
| L | owner | Public | ! | | NO ! |
| L | _checkOwner | Internal | 🔒 | | |
| L | renounceOwnership | Public | ! | ● | onlyOwner |
| L | transferOwnership | Public | ! | ● | onlyOwner |
| L | _transferOwnership | Internal | 🔒 | ● | |
|||||
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
| L | removeLiquidityETHSupportingFeeOnTransferTokens | External | ! | ● | NO ! |
| L | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External | ! | ● | NO ! |
| L | swapExactTokensForTokensSupportingFeeOnTransferTokens | External | ! | ● | NO ! |
| L | swapExactETHForTokensSupportingFeeOnTransferTokens | External | ! | 💰 | NO ! |
| L | swapExactTokensForETHSupportingFeeOnTransferTokens | External | ! | ● | NO ! |
|||||
| **IUniswapV2Router01** | Interface | |||
| L | factory | External | ! | | NO ! |
| L | WETH | External | ! | | NO ! |
| L | addLiquidity | External | ! | ● | NO ! |
| L | addLiquidityETH | External | ! | 💰 | NO ! |
```

CONTRACT ASSESMENT




```



|  | 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 | ! |
|||||
|  | **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 | ! |
|||||
|  | **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 | 🔒 | | |

```



CONTRACT ASSESMENT

\mathbb{L}	abs	Internal 		
\mathbb{L}	toUint256Safe	Internal 		
****SafeMathUint****	Library			
\mathbb{L}	toInt256Safe	Internal 		

Symbol	Meaning
	Function can modify state
	Function is payable



STATIC ANALYSIS

```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#function-initializing-state

Pragma version^0.8.17 (contracts/Token.sol#5) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.19 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Function IUniswapV2Router01.WETH() (contracts/Token.sol#10) is not in mixedCase
Parameter LUCKYPEPE.isFeeExcluded(address).wallet (contracts/Token.sol#685) is not in mixedCase
Parameter LUCKYPEPE.setDoContractSwap(bool).enabled (contracts/Token.sol#721) is not in mixedCase
Parameter LUCKYPEPE.changeMarketingWallet(address).wallet (contracts/Token.sol#725) is not in mixedCase
Parameter LUCKYPEPE.changeSellFees(uint256).marketingFee (contracts/Token.sol#729) is not in mixedCase
Parameter LUCKYPEPE.setAuthorizedWallets(address,bool).wallet (contracts/Token.sol#747) is not in mixedCase
Parameter LUCKYPEPE.setAuthorizedWallets(address,bool).status (contracts/Token.sol#748) is not in mixedCase
Parameter LUCKYPEPE.changePair(address).pair (contracts/Token.sol#760) is not in mixedCase
Variable LUCKYPEPE.DEAD (contracts/Token.sol#473) is not in mixedCase
Constant LUCKYPEPE.name (contracts/Token.sol#475) is not in UPPER_CASE_WITH_UNDERSCORES
Constant LUCKYPEPE.symbol (contracts/Token.sol#476) is not in UPPER_CASE_WITH_UNDERSCORES
Constant LUCKYPEPE.decimals (contracts/Token.sol#477) is not in UPPER_CASE_WITH_UNDERSCORES
Variable LUCKYPEPE.totalSupply (contracts/Token.sol#479) is not in mixedCase
Variable LUCKYPEPE.balances (contracts/Token.sol#481) is not in mixedCase
Variable LUCKYPEPE.allowances (contracts/Token.sol#482) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Reentrancy in LUCKYPEPE._transferFrom(address,address,uint256) (contracts/Token.sol#612-636):
  External calls:
    - doContractSwap() (contracts/Token.sol#623)
      - address(marketingWallet).transfer(swappedTokens) (contracts/Token.sol#696)
  State variables written after the call(s):
    - _balances[sender] = _balances[sender] - amount (contracts/Token.sol#627)
    - _balances[recipient] = _balances[recipient] + amountReceived (contracts/Token.sol#632)
    - amountReceived = takeFee(sender,amount) (contracts/Token.sol#629-631)
      - _balances[address(this)] = _balances[address(this)] + feeToken (contracts/Token.sol#645)
  Event emitted after the call(s):
    - Transfer(sender,address(this),feeToken) (contracts/Token.sol#646)
      - amountReceived = takeFee(sender,amount) (contracts/Token.sol#629-631)
    - Transfer(sender,recipient,amountReceived) (contracts/Token.sol#634)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#15) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#16)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

LUCKYPEPE.slitherConstructorVariables() (contracts/Token.sol#472-763) uses literals with too many digits:
  - totalSupply = 21000000 * (10 ** decimals) (contracts/Token.sol#479)
LUCKYPEPE.slitherConstructorVariables() (contracts/Token.sol#472-763) uses literals with too many digits:
  - swapThreshold = (_totalSupply * 1) / 100000 (contracts/Token.sol#494)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

LUCKYPEPE.DEAD (contracts/Token.sol#473) is never used in LUCKYPEPE (contracts/Token.sol#472-763)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable

LUCKYPEPE.DEAD (contracts/Token.sol#473) should be constant
LUCKYPEPE._totalSupply (contracts/Token.sol#479) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

LUCKYPEPE.router (contracts/Token.sol#491) should be immutable
LUCKYPEPE.swapThreshold (contracts/Token.sol#494) 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

1- Adding liquidity (passed):

<https://testnet.bscscan.com/tx/0xcae617385f1ee2af6b259c624d3de4e33e062ef944546c17a4a2410b1352234d>

2- Buying when excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0xecc51afd6f987f1be461c55e39b73d8f19eb654eeae811438fb423d7adc4b9cf>

3- Selling when excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0xa14fb309ad18ee866dfec560e855502ea96fb03e29e5e97cb15b03f9eefef0df>

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

<https://testnet.bscscan.com/tx/0x8d9fa3d65a31fc9ac4a848bb50529b8347df56dbbbe95f488303c109e52f57b2>

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

<https://testnet.bscscan.com/tx/0xdb06db6fa6a7624366bd0c775ea93a23783d75b2119b26ddce92a45f6e6f2060>

6- Selling when not excluded from fees (up to 10% tax) (passed):

<https://testnet.bscscan.com/tx/0x4e6e4ccaa03223ecef1bd8cc20139bc9402edc40c5f05661332ae8c0b4440383>

7- Transferring when not excluded from fees (0% tax) (passed):

<https://testnet.bscscan.com/tx/0xdb06db6fa6a7624366bd0c775ea93a23783d75b2119b26ddce92a45f6e6f2060>



FUNCTIONAL TESTING

7- Internal swap (fee wallets received BNB) (passed):

<https://testnet.bscscan.com/address/0x2433e36dc7d27606d9e863b5194380e2be42a720#internaltx>

FUNCTIONAL TESTING

Centralization – Trades must be enabled

Severity: **High**

function: enableTrading

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

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be able to buy/sell/transfer tokens.

```
function enableTrading() external onlyOwner {  
    require(!isTradeEnabled, "Trading already enabled");  
    isTradeEnabled = true;  
    listingTime = block.timestamp;  
}
```

Suggestion

To mitigate this centralization issue, we propose the following options:

1. Renounce Ownership: Consider relinquishing control of the smart contract by renouncing ownership. This would remove the ability for a single entity to manipulate the router, reducing centralization risks.
 2. Multi-signature Wallet: Transfer ownership to a multi-signature wallet. This would require multiple approvals for any changes to the mainRouter, adding an additional layer of security and reducing the centralization risk.
 3. Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades (applied)
-



FUNCTIONAL TESTING

Informational – Stuck ERC20 tokens

Status: Not Resolved

Overview:

ERC20 tokens sent to contract can not be rescued.

Suggestion:

Implement a function to be able to withdraw ERC20 tokens from the contract



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