



Smart Contract Audit

FOR

Listen AI

DATED : 23 FEB 23'



AUDIT SUMMARY

Project name – Listen AI

Date: 23 February, 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	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/0x1a69c72cbbddcc78608af6c828ac09e4551032d7>



Token Information

Token Name : ListenAI

Token Symbol: ListenAI

Decimals: 18

Token Supply: 100,000,000

Token Address:

0x3F3BCaA89030fa5729F0B992417C0aCDA053B1cd

Checksum:

7f4637c4c0993af2f6a3874de24406b78e17d63c560
bf5b3e6f76b0b4edc8fe0

Owner:

0xdd652278507d15e8e77d66ea7b1af926a942c2f0



TOKEN OVERVIEW

Fees:

Buy Fees: 0%

Sell Fees: 0%

Transfer Fees: 0%

Fees Privilege: Owner

Ownership : Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: None



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.

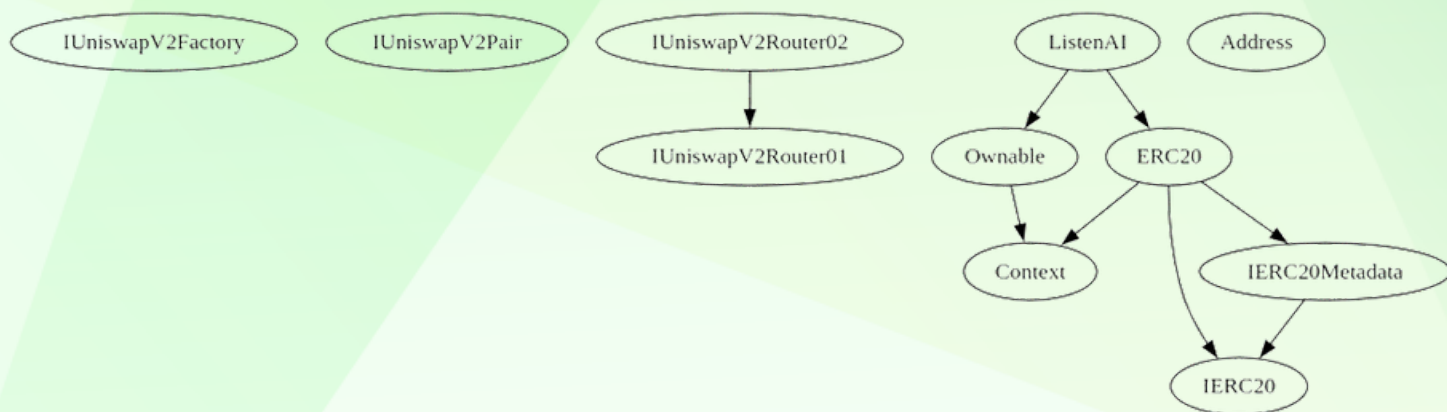
Findings

Severity

Found

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

INHERITANCE TREE





POINTS TO NOTE

- **Owner is not able to set buy/sell/transfer taxes (0% static)**
 - **Owner is not able to blacklist an arbitrary wallet**
 - **Owner is not able to set max buy/sell/transfer amounts**
 - **Owner is not able to disable trades**
 - **Owner is not able to mint new tokens**
-



CONTRACT ASSESMENT

Contract	Type	Bases			
:-----: :-----: :-----: :-----: :-----:					
L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	
IUniswapV2Factory Interface					
L	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 !	



CONTRACT ASSESMENT


|||||


| ****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! |

|||||

| ****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! |

|||||

CONTRACT ASSESMENT




















```

| **Address** | Library | ||| |
|  | isContract | Internal | | |
|  | sendValue | Internal | | |
|  | functionCall | Internal | | |
|  | functionCall | Internal | | |
|  | functionCallWithValue | Internal | | |
|  | functionCallWithValue | Internal | | |
|  | functionStaticCall | Internal | | |
|  | functionStaticCall | Internal | | |
|  | functionDelegateCall | Internal | | |
|  | functionDelegateCall | Internal | | |
|  | verifyCallResultFromTarget | Internal | | |
|  | verifyCallResult | Internal | | |
|  | _revert | Private | | |
| |||||
| **Context** | Implementation | |||
|  | _msgSender | Internal | | |
|  | _msgData | Internal | | |
| |||||
| **Ownable** | Implementation | Context | |||
|  | <Constructor> | Public | | |NO|
|  | owner | Public | | |NO|
|  | renounceOwnership | Public | | |onlyOwner|
|  | transferOwnership | Public | | |onlyOwner|
| |||||
| **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	_beforeTokenTransfer	Internal 		
^L	_afterTokenTransfer	Internal 		
ListenAI	Implementation	ERC20, Ownable		
^L	<Constructor>	Public 		ERC20
^L	<Receive Ether>	External 		NO 
^L	claimStuckTokens	External 		onlyOwner
^L	_transfer	Internal 		
^L	enableTrading	External 		onlyOwner
^L	setExcluded	External 		onlyOwner

| Symbol | Meaning |

| :-----: | ----- |

|  | Function can modify state |

|  | Function is payable |



STATIC ANALYSIS

```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#uninitialized-local-variables
Address._revert(bytes,string) (contracts/Token.sol#529-544) uses assembly
- INLINE_ASM (contracts/Token.sol#537-540)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#assembly-usage
Address._revert(bytes,string) (contracts/Token.sol#529-544) is never used and should be removed
Address.functionCall(address,bytes) (contracts/Token.sol#388-399) is never used and should be removed
Address.functionCall(address,bytes,string) (contracts/Token.sol#401-407) is never used and should be removed
Address.functionCallWithValue(address,bytes,uint256) (contracts/Token.sol#409-421) is never used and should be removed
Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#423-443) is never used and should be removed
Address.functionDelegateCall(address,bytes) (contracts/Token.sol#472-482) is never used and should be removed
Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#484-497) is never used and should be removed
Address.functionStaticCall(address,bytes) (contracts/Token.sol#445-455) is never used and should be removed
Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#457-470) is never used and should be removed
Address.isContract(address) (contracts/Token.sol#371-373) is never used and should be removed
Address.verifyCallResult(bool,bytes,string) (contracts/Token.sol#517-527) is never used and should be removed
Address.verifyCallResultFromTarget(address,bool,bytes,string) (contracts/Token.sol#499-515) is never used and should be removed
Context._msgData() (contracts/Token.sol#552-555) is never used and should be removed
ERC20._burn(address,uint256) (contracts/Token.sol#742-757) 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#3) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.18 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#375-386):
- (success) = recipient.call(value: amount)() (contracts/Token.sol#381)
Low level call in Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#423-443):
- (success, returndata) = target.call(value: value)(data) (contracts/Token.sol#433-435)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#457-470):
- (success, returndata) = target.staticcall(data) (contracts/Token.sol#462)
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#484-497):
- (success, returndata) = target.delegatecall(data) (contracts/Token.sol#489)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IUniswapV2Pair.DOMAIN_SEPARATOR() (contracts/Token.sol#65) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (contracts/Token.sol#67) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (contracts/Token.sol#98) is not in mixedCase
Function IUniswapV2Router01.WETH() (contracts/Token.sol#138) is not in mixedCase
Parameter ListenAI.setSwapEnabled(bool). enabled (contracts/Token.sol#855) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Token.sol#553)" inContext (contracts/Token.sol#547-556)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#143) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#144)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

ListenAI.uniswapV2Pair (contracts/Token.sol#788) should be immutable
ListenAI.uniswapV2Router (contracts/Token.sol#787) 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

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

1- Adding Liquidity (**Passed**):

liquidity added on Pancakeswap V2:

<https://testnet.bscscan.com/tx/0x762015b4171eab19e467d09d29b4ab6e5b347dfc4ce326145b0da1356a431f41>

no issue were found on adding liquidity.

2- Buying (0% Tax) (**Passed**):

<https://testnet.bscscan.com/tx/0x16c16382a56473194ceb9d21f945542c09d02696267ee841285c9262ff90504f>

3- Selling (0% Tax) (**Passed**):

<https://testnet.bscscan.com/tx/0x12242b377894dc057724b043060fb2bf9b27f70ac558ae7230001a85f296804b>

4-Transferring (0% tax)(**Passed**):

<https://testnet.bscscan.com/tx/0xbe5a595119bf35e1e6d97be448da82208d10dd1462ba0bfc80eff9b41c9766f285>



MANUAL TESTING

NO ISSUES FOUND

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