AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

KnowieGTX

DATED : 11 MAR 23'

AUDIT SUMMARY

Project name – KnowieGTX

Date: 11 March, 2023

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

Audit Status: Passed(Contract developed by Pinksale Safu Dev)

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	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- Goerli network:
all tests were done on Goerli 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/address/0x7Da4D12b67 4bcB23e20d7fE018d7cb898344f982#code

Token Information

Token Name : KnowieGTX

Token Symbol: KGTX

Decimals: 18

Token Supply: 100,000,000

Token Address: Not deployed

Checksum:
2d7c64a76f5f92f97d4f45084c7d0c31c350a1a2

Owner: Not Deployed

TOKEN OVERVIEW

Fees:

Buy Fees: 0%

Sell Fees: 0%

Transfer Fees: 0%

Fees Privilige: Owner

Ownership : Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Priviliges: 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 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

- ✅ Return values of low-level calls
- ✅ Private modifier
- ✅ Multiple Sends
- ✅ Using Suicide
- ✅ Gas Limitand Loops
- ✅ Address hardcoded
- ✅ Exception Disorder
- ✅ Using inline assembly
- ✅ Divide before multiply
- ✅ Missing Zero Address Validation
- ✅ Compiler version not fixed

- ✅ **Gasless Send**
- ✅ Using block.timestamp
- ✅ Re-entrancy
- ✅ Tautology or contradiction
- ✅ Timestamp Dependence
- ✅ Revert/require functions
- ✅ Use of tx.origin
- ✅ Integer overflow/underflow
- ✅ Dangerous strict equalities
- ✅ Using SHA3
- ✅ 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**	0

INHERITANCE TREE
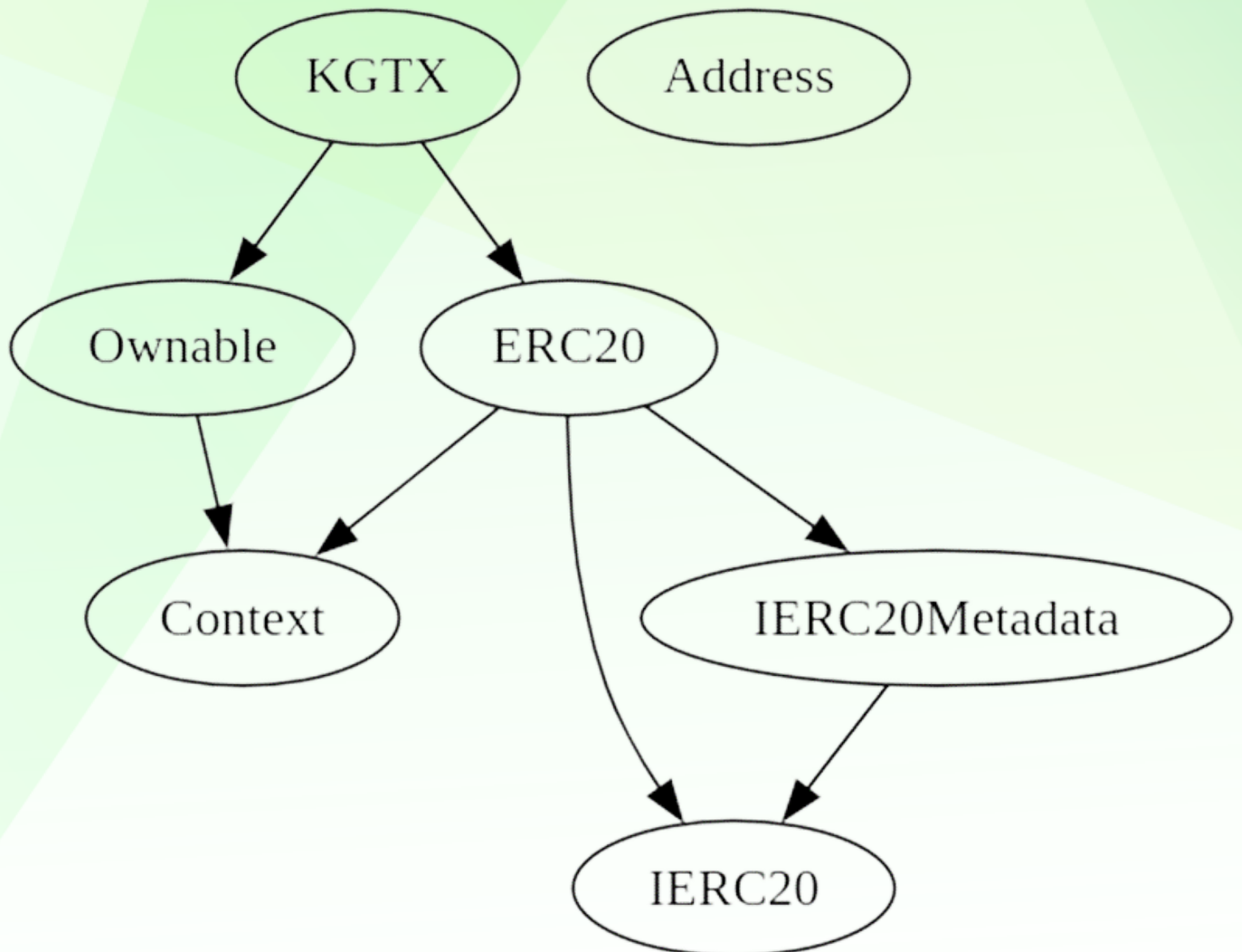
POINTS TO NOTE

- Owner must enable trading in order for investors to be able to trade (buy/sell/transfer)
- Owner is not able to set taxes (0% tax)
- 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		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
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❗
└	burn	External ❗	🛑	NO❗
└	swap	External ❗	🛑	NO❗
└	skim	External ❗	🛑	NO❗
└	sync	External ❗	🛑	NO❗
└	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

└	_approve	Internal 🔒	🛑		
└	_beforeTokenTransfer	Internal 🔒	🛑		
└	_afterTokenTransfer	Internal 🔒	🛑		
KGTX	Implementation	ERC20, Ownable		
└	<Constructor>	Public ❗	🛑	ERC20
└	<Receive Ether>	External ❗	💵	NO❗
└	claimStuckTokens	External ❗	🛑	onlyOwner
└	excludeFromFees	External ❗	🛑	onlyOwner
└	isExcludedFromFees	Public ❗		NO❗
└	enableTrading	External ❗	🛑	onlyOwner
└	_transfer	Internal 🔒	🛑		

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

STATIC ANALYSIS

```
Address._revert(bytes,string) (contracts/Token.sol#549-564) is never used and should be removed
Address.functionCall(address,bytes) (contracts/Token.sol#408-419) is never used and should be removed
Address.functionCall(address,bytes,string) (contracts/Token.sol#421-427) is never used and should be removed
Address.functionCallWithValue(address,bytes,uint256) (contracts/Token.sol#429-441) is never used and should be removed
Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#443-463) is never used and should be removed
Address.functionDelegateCall(address,bytes) (contracts/Token.sol#492-502) is never used and should be removed
Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#504-517) is never used and should be removed
Address.functionStaticCall(address,bytes) (contracts/Token.sol#465-475) is never used and should be removed
Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#477-490) is never used and should be removed
Address.isContract(address) (contracts/Token.sol#391-393) is never used and should be removed
Address.verifyCallResult(bool,bytes,string) (contracts/Token.sol#537-547) is never used and should be removed
Address.verifyCallResultFromTarget(address,bool,bytes,string) (contracts/Token.sol#519-535) is never used and should be removed
Context._msgData() (contracts/Token.sol#572-575) is never used and should be removed
ERC20._burn(address,uint256) (contracts/Token.sol#762-777) 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#23) 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#395-406):
        - (success) = recipient.call{value: amount}() (contracts/Token.sol#401)
Low level call in Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#443-463):
        - (success,returndata) = target.call{value: value}(data) (contracts/Token.sol#453-455)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#477-490):
        - (success,returndata) = target.staticcall(data) (contracts/Token.sol#482)
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#504-517):
        - (success,returndata) = target.delegatecall(data) (contracts/Token.sol#509)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IUniswapV2Pair.DOMAIN_SEPARATOR() (contracts/Token.sol#85) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (contracts/Token.sol#87) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (contracts/Token.sol#118) is not in mixedCase
Function IUniswapV2Router01.WETH() (contracts/Token.sol#158) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Token.sol#573)" inContext (contracts/Token.sol#567-576)
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#163) is too similar to IUniswapV2Router0
1.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#164)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

KGTX.uniswapV2Pair (contracts/Token.sol#808) should be immutable
KGTX.uniswapV2Router (contracts/Token.sol#807) 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

Router (PCS V2):
0xD99D1c33F9fC3444f8101754aBC46c52416550D1

1- Adding Liquidity (Passed):
liquidity added on Pancakeswap V2:

https://testnet.bscscan.com/tx/0xec8155aa0092c332c8c7210e6a7d45fda8bc6e3b06e4bb5f40e471ddf4a45669

2- Buying from a non-excluded wallet (0% max)(Passed):

https://testnet.bscscan.com/tx/0x7926ddcc55aa7f6ba2192564167188d4d600f07f23ec51fdd53ad91771927042

3- Selling from a non-excluded wallet (0% max)(Passed):

https://testnet.bscscan.com/tx/0xaf4bdac0dff594fb3b0659a04f35b4e523707012d2417c78f58a010e7dc9f7fe

MANUAL TESTING

Issue: Owner must enable trading

Type: Centralization

Severity: **High**

Function: enableTrading

Line: 627-630

Overview:

Owner must enable trading in order to start trades.

Since contract is owend by safu dev, enabling trades is guaranteed.

```solidity
function enableTrading() external onlyOwner {
    require(!tradingEnabled, "Trading already enabled.");
    tradingEnabled = true;
}
```

Social Media Overview

Here are the Social Media Accounts of

KnowieGTX

https://knowiegtx.app/

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