Cyberscope

Audit Report

COLLIE INU

August 2022

SHA256 dcc9c9bd06f45e3c26815beba0b874e5d17005ae731c23abcafe090bdc296157

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Table of Contents

Contract Review

Contract Name	Collielnu
Compiler Version	v0.8.9+commit.e5eed63a
Optimization	0 runs
Licence	
Testing Deploy	https://testnet.bscscan.com/token/0xA127ddf1747adcbE45a15dcadF69a844492424a6
Symbol	COLLIE
Decimals	18
Total Supply	1,000,000,000,000
Domain	collieinu.net

Source Files

Filename	**SHA256**
contract.sol	dcc9c9bd06f45e3c26815beba0b874e5d17005ae731c23abcafe090bdc296157

Audit Updates

Initial Audit	14th August 2022
Corrected	

Contract Analysis

Critical Medium Minor Pass

Severity	Code	Description
●	ST	Contract Owner is not able to stop or pause transactions
●	OCTD	Contract Owner is not able to transfer tokens from specific address
●	OTUT	Owner Transfer User's Tokens
●	ELFM	Contract Owner is not able to increase fees more than a reasonable percent (25%)
●	ULTW	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent
●	MT	Contract Owner is not able to mint new tokens
●	BT	Contract Owner is not able to burn tokens from specific wallet
●	BC	Contract Owner is not able to blacklist wallets from selling

ULTW - Unlimited Liquidity to Team Wallet

Criticality	minor
Location	contract.sol#L1107,1112

Description

The contract owner has the authority to transfer funds without limit to the team wallet. These funds have been accumulated from fees collected from the contract. The owner may take advantage of it by calling the `rescueBNB` and `rescueAnyBEP20Tokens` methods.

```
function rescueBNB(uint256 weiAmount) external onlyOwner{
    require(address(this).balance >= weiAmount, "insufficient BNB balance");
    payable(msg.sender).transfer(weiAmount);
}

function rescueAnyBEP20Tokens(address _tokenAddr, address _to, uint _amount)
public onlyOwner {
    IERC20(_tokenAddr).transfer(_to, _amount);
}
```

Recommendation

The contract could embody a check for the maximum amount of funds that can be transferred.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

BC - Blacklisted Contracts

Criticality	critical
Location	contract.sol#L1126

Description

The contract owner has the authority to massively stop addresses from transactions. The owner may take advantage of it by calling the `blacklistAddress` function.

```
require(!_isBlacklisted[from] && !_isBlacklisted[to], "You are a bot");
```

Recommendation

The team should carefully manage the private keys of the owner’s account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Contract Diagnostics

Critical Medium Minor

Severity	Code	Description
	STC	Succeeded Transfer Check
	BLC	Business Logic Concern
	CR	Code Repetition
	L01	Public Function could be Declared External
	L02	State Variables could be Declared Constant
	L04	Conformance to Solidity Naming Conventions
	L05	Unused State Variable
	L07	Missing Events Arithmetic
	L08	Tautology or Contradiction
	L09	Dead Code Elimination
	L13	Divide before Multiply Operation
	L15	Local Scope Variable Shadowing

STC - Succeeded Transfer Check

Criticality	minor
Location	contract.sol#L1298

Description

According to the ERC20 specification, the transfer methods should be checked if the result is successful. Otherwise, the contract may wrongly assume that the transfer has been established.

```
(success,) = address(devWallet).call{value: ethForDev}("");
(success,) = address(marketingWallet).call{value: address(this).balance}("");
```

Recommendation

The contract should check if the result of the transfer methods is successful.

BLC - Business Logic Concern

Criticality	medium
Location	contract.sol#L1339

Description

The contact owner has the authority to burn 10% of the liquidity tokens every 30 seconds. If this functionality is abused by the contract owner, then the liquidity amount will be significantly decreased, and the market making service will not be able to support the trades.

```
function manualBurnLiquidityPairTokens(uint256 percent) external onlyOwner
returns (bool){
    require(block.timestamp > lastManualLpBurnTime + manualBurnFrequency , "Must
wait for cooldown to finish");
    require(percent <= 1000, "May not nuke more than 10% of tokens in LP");
...
}
```

Recommendation

The team is advised to carefully check if the implementation follows the expected business logic.

CR - Code Repetition

Criticality	minor
Location	contract.sol#L1205,1322

Description

There are code segments that are repetitive in the contract. Those segments increase the code size of the contract unnecessarily.

The sell and buy calculations share the same functionality.

```
fees = amount.mul(sellTotalFees).div(100);
tokensForLiquidity += fees * sellLiquidityFee / sellTotalFees;
tokensForDev += fees * sellDevFee / sellTotalFees;
tokensForMarketing += fees * sellMarketingFee / sellTotalFees;
```

The methods autoBurnLiquidityPairTokens and manualBurnLiquidityPairTokens share the same functionality.

```
// get balance of liquidity pair
uint256 liquidityPairBalance = this.balanceOf(uniswapV2Pair);

// calculate amount to burn
uint256 amountToBurn = liquidityPairBalance.mul(percentForLPBurn).div(10000);

// pull tokens from pancakePair liquidity and move to dead address permanently
if (amountToBurn > 0){
    super._transfer(uniswapV2Pair, address(0xdead), amountToBurn);
}

//sync price since this is not in a swap transaction!
IUniswapV2Pair pair = IUniswapV2Pair(uniswapV2Pair);
pair.sync();
emit AutoNukeLP();
return true;
```

Recommendation

Create an internal function that contains the code segment and remove it from all the sections.

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L215,223,240,266,274,285,303,325,344,643,652,1068,1102,1112

Description

Public functions that are never called by the contract should be declared external to save gas.

```
rescueAnyBEP20Tokens
isExcludedFromFees
setAutomatedMarketMakerPair
transferOwnership
renounceOwnership
decreaseAllowance
increaseAllowance
transferFrom
approve
...
```

Recommendation

Use the external attribute for functions never called from the contract.

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L886

Description

Constant state variables should be declared constant to save gas.

```
manualBurnFrequency
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L41,42,59,732,928,930,1047,1055,1112,1309,870,915

Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_isExcludedMaxTransactionAmount
deadAddress
_Enabled
_percent
_frequencyInSeconds
_amount
_to
_tokenAddr
_devFee
...
```

Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions.

L05 - Unused State Variable

Criticality	minor
Location	contract.sol#L663

Description

There are segments that contain unused state variables.

```
MAX_INT256
```

Recommendation

Remove unused state variables.

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L1021,1028,1033,1047,1055,1309

Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.

```
lpBurnFrequency = _frequencyInSeconds
sellMarketingFee = _marketingFee
buyMarketingFee = _marketingFee
maxWallet = newNum * (10 ** 18)
maxTransactionAmount = newNum * (10 ** 18)
swapTokensAtAmount = newAmount
```

Recommendation

Emit an event for critical parameter changes.

L08 - Tautology or Contradiction

Criticality	minor
Location	contract.sol#L1309

Description

Detects expressions that are tautologies or contradictions. For instance, an uint variable will always be greater than or equal to zero.

```
require(bool,string)(_percent <= 1000 && _percent >= 0,Must set auto LP burn percent between 0% and 10%)
```

Recommendation

Fix the incorrect comparison by changing the value type or the comparison.

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L408,709,715,722

Description

Functions that are not used in the contract, and make the code's size bigger.

```
toInt256Safe
toUint256Safe
abs
_burn
```

Recommendation

Remove unused functions.

L13 - Divide before Multiply Operation

Criticality	minor
Location	contract.sol#L1119

Description

Performing divisions before multiplications may cause lose of prediction.

```
tokensForMarketing += fees * sellMarketingFee / sellTotalFees
fees = amount.mul(buyTotalFees).div(100)
tokensForDev += fees * sellDevFee / sellTotalFees
tokensForLiquidity += fees * sellLiquidityFee / sellTotalFees
```

Recommendation

The multiplications should be prior to the divisions.

L15 - Local Scope Variable Shadowing

Criticality	minor
Location	contract.sol#L961

Description

The are variables that are defined in the local scope containing the same name from an upper scope.

```
totalSupply
```

Recommendation

The local variables should have different names from the upper scoped variables.

Contract Functions

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
IUniswapV2Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-

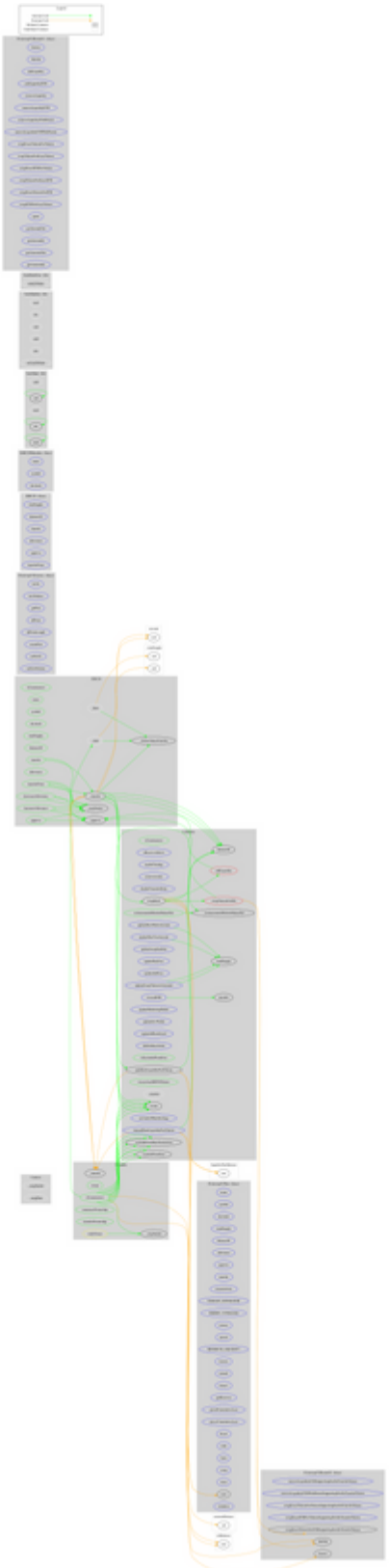
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
ERC20	Implementation	Context, IERC20, IERC20Metadata		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-

	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
SafeMathInt	Library			
	mul	Internal		
	div	Internal		
	sub	Internal		

	add	Internal		
	abs	Internal		
	toUint256Safe	Internal		
SafeMathUint	Library			
	toInt256Safe	Internal		
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-
IUniswapV2Router02	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-

	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
CollieInu	Implementation	ERC20, Ownable		
	<Constructor>	Public	✓	ERC20
	<Receive Ether>	External	Payable	-
	enableTrading	External	✓	onlyOwner
	removeLimits	External	✓	onlyOwner
	disableTransferDelay	External	✓	onlyOwner
	updateSwapTokensAtAmount	External	✓	onlyOwner
	updateMaxTxnAmount	External	✓	onlyOwner
	updateMaxWalletAmount	External	✓	onlyOwner
	excludeFromMaxTransaction	Public	✓	onlyOwner
	updateSwapEnabled	External	✓	onlyOwner
	updateBuyFees	External	✓	onlyOwner
	updateSellFees	External	✓	onlyOwner
	excludeFromFees	Public	✓	onlyOwner
	setAutomatedMarketMakerPair	Public	✓	onlyOwner
	_setAutomatedMarketMakerPair	Private	✓	
	updateMarketingWallet	External	✓	onlyOwner
	updateDevWallet	External	✓	onlyOwner
	updateIsBlacklisted	External	✓	onlyOwner
	bulkIsBlacklisted	External	✓	onlyOwner
	isExcludedFromFees	Public		-
	rescueBNB	External	✓	onlyOwner
	rescueAnyBEP20Tokens	Public	✓	onlyOwner
	_transfer	Internal	✓	
	swapTokensForEth	Private	✓	
	addLiquidity	Private	✓	
	swapBack	Private	✓	
	setAutoLPBurnSettings	External	✓	onlyOwner
	autoBurnLiquidityPairTokens	Internal	✓	
	manualBurnLiquidityPairTokens	External	✓	onlyOwner

Contract Flow



Domain Info

Domain Name	collieinu.net
Registry Domain ID	2715570708_DOMAIN_NET-VRSN
Creation Date	2022-08-02T19:01:52Z
Updated Date	2022-08-02T21:03:35Z
Registry Expiry Date	2023-08-02T19:01:52Z
Registrar WHOIS Server	whois.launchpad.com
Registrar URL	LaunchPad.com
Registrar	Launchpad, Inc. (HostGator)
Registrar IANA ID	955

The domain has been created in 12 months before the creation of the audit.

There is no public billing information, the creator is protected by the privacy settings.

Summary

There are some functions that can be abused by the owner like massively blacklisting addresses and transferring funds to the team’s wallet. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

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About Cyberscope

Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

Coinscope is the leading early coin listing, voting and auditing authority firm. The audit process is analyzing and monitoring many aspects of the project. That way, it gives the community a good sense of security using an informative report and a generic score.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provide all the essential tools to assist users draw their own conclusions.

The Cyberscope team

https://www.cyberscope.io