Cyberscope

Audit Report
maincoon

May 2024

SHA256 c73a30971bc9d2172cd22721aed3538b00b233e2b6384c6a7005254a7dcb5403

Audited by © cyberscope

Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
●	PLPI	Potential Liquidity Provision Inadequacy	Unresolved
●	L02	State Variables could be Declared Constant	Unresolved

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Review

Contract Name	MainCoonCatToken
Testing Deploy	https://testnet.bscscan.com/address/0xed053f4ad1cc7006ae7b845a706ad9270f7166e3
Symbol	Coon
Decimals	18
Total Supply	100,000,000,000
Badge Eligibility	Yes

Audit Updates

Initial Audit	09 May 2024
Corrected Phase 2	14 May 2024
Corrected Phase 3	20 May 2024

Source Files

Filename	SHA256
contracts/maincoon.sol	c73a30971bc9d2172cd22721aed3538b00b233e2b6384c6a7005254a7dcb5403

Findings Breakdown

Critical	0
Medium	0
Minor / Informative	2

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	0	0	0	0
Medium	0	0	0	0
Minor / Informative	2	0	0	0

PLPI - Potential Liquidity Provision Inadequacy

Criticality	Minor / Informative
Location	contracts/maincoon.sol#L1062
Status	Unresolved

Description

The contract operates under the assumption that liquidity is consistently provided to the pair between the contract's token and the native currency. However, there is a possibility that liquidity is provided to a different pair. This inadequacy in liquidity provision in the main pair could expose the contract to risks. Specifically, during eligible transactions, where the contract attempts to swap tokens with the main pair, a failure may occur if liquidity has been added to a pair other than the primary one. Consequently, transactions triggering the swap functionality will result in a revert.

```
function swapTokensForEth(uint256 tokenAmount) private {
    // generate the uniswap pair path of token -> weth
    address[] memory path = new address[](2);
    path[0] = address(this);
    path[1] = uniswapV2Router.WETH();

    _approve(address(this), address(uniswapV2Router),
tokenAmount);

    // make the swap

uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTok
ens(
        tokenAmount,
        0, // accept any amount of ETH
        path,
        address(this), // The contract
        block.timestamp
    );
    emit SwapTokensForETH(tokenAmount, path);
}
```

Recommendation

The team is advised to implement a runtime mechanism to check if the pair has adequate liquidity provisions. This feature allows the contract to omit token swaps if the pair does not have adequate liquidity provisions, significantly minimizing the risk of potential failures.

Furthermore, the team could ensure the contract has the capability to switch its active pair in case liquidity is added to another pair.

Additionally, the contract could be designed to tolerate potential reverts from the swap functionality, especially when it is a part of the main transfer flow. This can be achieved by executing the contract's token swaps in a non-reversible manner, thereby ensuring a more resilient and predictable operation.

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	contracts/maincoon.sol#L551
Status	Unresolved

Description

State variables can be declared as constant using the constant keyword. This means that the value of the state variable cannot be changed after it has been set. Additionally, the constant variables decrease gas consumption of the corresponding transaction.

```
uint256 private tTotal = 100000 * 10**6 * 10**18
```

Recommendation

Constant state variables can be useful when the contract wants to ensure that the value of a state variable cannot be changed by any function in the contract. This can be useful for storing values that are important to the contract's behavior, such as the contract's address or the maximum number of times a certain function can be called. The team is advised to add the constant keyword to state variables that never change.

Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
		Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	

IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
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	✓	-
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-

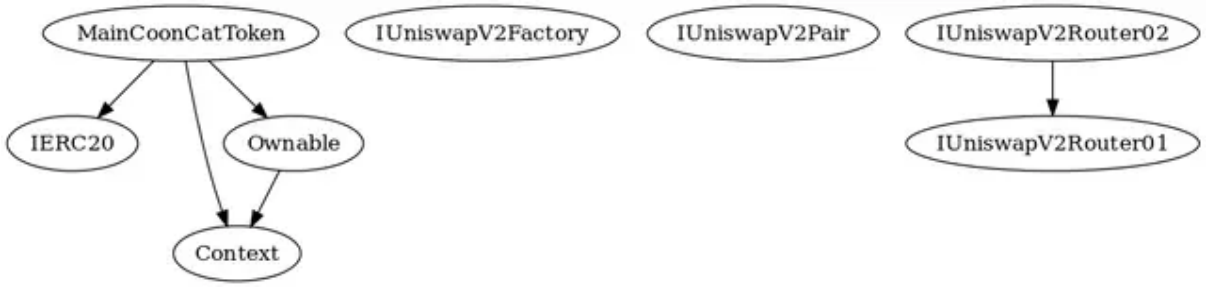
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	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	✓	-

MainCoonCatToken	Implementation	Context, IERC20, Ownable		
		Public	✓	-
	setFees	External	✓	onlyOwner
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	manualSendMa	External	✓	onlyOwner
	setMainAddress	External	✓	onlyOwner
	transferFrom	Public	✓	-
	excludeFromAddressPair	Public	✓	onlyOwner
	includeFromAddressPair	Public	✓	onlyOwner
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	isExcludedFromFee	Public		-
	isExcludedFromReward	Public		-
	deliver	Public	✓	-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner

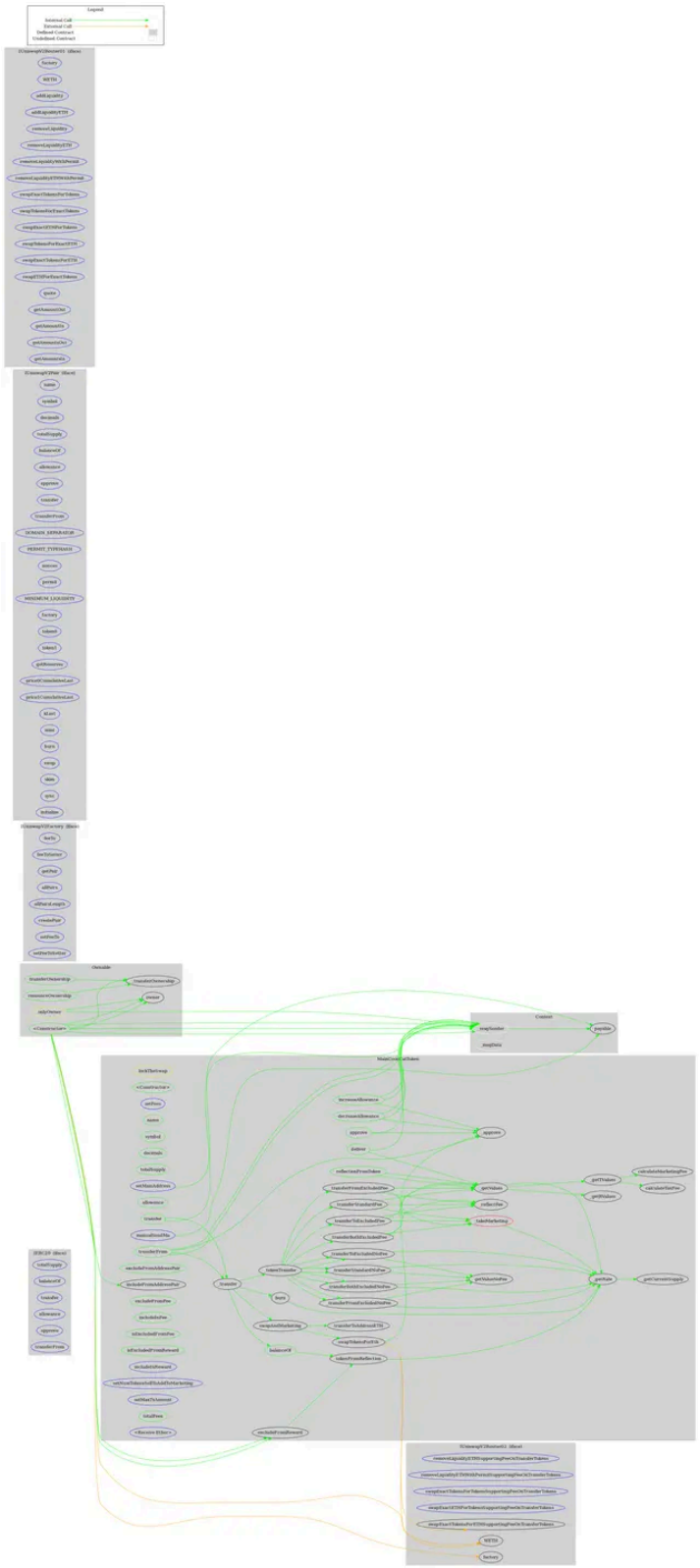
	setNumTokensSellToAddToMarketing	External	✓	onlyOwner
	setMaxTxAmount	External	✓	onlyOwner
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	totalFees	Public		-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
		External	Payable	-
	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	getValueNoFee	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	_takeMarketing	Private	✓	
	calculateTaxFee	Private		
	calculateMarketingFee	Private		
	_approve	Private	✓	
	_transfer	Private	✓	
	swapAndMarketing	Private	✓	lockTheSwap
	swapTokensForEth	Private	✓	
	transferToAddressETH	Private	✓	

	_tokenTransfer	Private	✓	
	_transferStandardFee	Private	✓	
	_transferToExcludedFee	Private	✓	
	_transferFromExcludedFee	Private	✓	
	_transferBothExcludedFee	Private	✓	
	_transferStandardNoFee	Private	✓	
	_transferToExcludedNoFee	Private	✓	
	_transferFromExcludedNoFee	Private	✓	
	_transferBothExcludedNoFee	Private	✓	
	burn	Private	✓	

Inheritance Graph



Flow Graph



Summary

maincoon contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. maincoon is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions.

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Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.

The Cyberscope team

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