SAFUAUDIT
SMART CONTRACT AUDITING

FAMILY DAO

SMART CONTRACT AUDIT

March 14, 2022

INTRODUCTION

Client	FamilyDao (Family)
Language	Solidity
Contract address	0xf2E5E9Eed15F08EDC81B6Cc653dC1E3BE7fCb746
Decimals	18
Supply	1,000,000,000,000,000
Platform	Binance Smart Chain
Compiler	v0.8.4+commit.e5eed63a
Optimization	Yes, with 200 runs
Website	-
Telegram	https://t.me/+WhKJDNnX31lINGY1
Twitter	https://twitter.com/family_dao1

Description

Family Dao is a BSC Token already launched at the time of auditing.

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Approach

Audit Details

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.

Audit Goals

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch, that lead to scams and rugpulls.

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Code Quality

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability

Tools

- Remix IDE
- MythX, Mythril
- SWC Registry
- Open Zeppelin Code Analyzer
- Solidity Code Complier

RISK CLASSIFICATION

CRITICAL

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

MEDIUM

Issues on this level could potentially bring problems and should eventually be fixed.

MINOR

Issues on this level are minor details and warning that can remain unfixed but would be better fixed at some point in the future

INFORMATIONAL

Information level is to offer suggestions for improvement of efficacity or security for features with a risk free factor.

ABSTRACT

Fees	Ownership	Mint function
Buy Fees: 9% Sell Fees: 9%	Renounced	No mint function

Owner can't set fees	Max Tx amount	Pause
Owner can't set fees (renounced owenership)	Owner can't set max Tx amount	Owner can't pause trading

Vulnerabilities Test

SWC ID	Description	
SWC-100	Function Default Visibility	Passed
SWC-101	Integer Overflow and Underflow	Passed
SWC-102	Outdated Compiler Version	Passed
SWC-103	Floating Pragma	Passed
SWC-104	Unchecked Call Return Value	Passed
SWC-105	Unprotected Ether Withdrawal	Passed
SWC-106	Unprotected SELF-DESTRUCT Instruction	Passed
SWC-107	Re-entrancy	Passed
SWC-108	State Variable Default Visibility	Passed
SWC-109	Uninitialized Storage Pointer	Passed
SWC-110	Assert Violation	Passed
SWC-111	Use of Deprecated Solidity Functions	Passed
SWC-112	Delegate Call to Untrusted Callee	Passed
SWC-113	DoS with Failed Call	Passed
SWC-114	Transaction Order Dependence	Passed
SWC-115	Authorization through tx.origin	Minor

SWC-116	Block values as a proxy for time	**Passed**
SWC-117	Signature Malleability	**Passed**
SWC-118	Incorrect Constructor Name	**Passed**
SWC-119	Shadowing State Variables	**Passed**
SWC-120	Weak Sources of Randomness from Chain Attributes	**Passed**
SWC-121	Missing Protection against Signature Replay Attacks	**Passed**
SWC-122	Lack of Proper Signature Verification	**Passed**
SWC-123	Requirement Violation	**Passed**
SWC-124	Write to Arbitrary Storage Location	**Passed**
SWC-125	Incorrect Inheritance Order	**Passed**
SWC-126	Insufficient Gas Griefing	**Passed**
SWC-127	Arbitrary Jump with Function Type Variable	**Passed**
SWC-128	DoS With Block Gas Limit	**Passed**
SWC-129	Typographical Error	**Passed**
SWC-130	Right-To-Left-Override control character (U+202E)	**Passed**
SWC-131	Presence of unused variables	**Passed**
SWC-132	Unexpected Ether balance	**Passed**
SWC-133	Hash Collisions With Multiple Variable Length Arguments	**Passed**
SWC-134	Message call with the hardcoded gas amount	**Passed**
SWC-135	Code With No Effects (Irrelevant/Dead Code)	**Passed**
SWC-136	Unencrypted Private Data On-Chain	**Passed**

MANUAL ANALYSIS

The contract is verified to check if functions do and work as they should and malicious code is not inserted.

	Tested	Result
Transfer	Yes	**Passed**
Total Supply	Yes	**Passed**
Buy Back	Yes	**N/A**
Burn	Yes	**N/A**
Mint	Yes	**N/A**
Rebase	Yes	**N/A**
Pause	Yes	**N/A**
Blacklist	Yes	**N/A**
Lock	Yes	**N/A**
Max Transaction	Yes	**N/A**
Transfer Ownership	Yes	**Passed**
Renounce Ownership	Yes	**Passed**

CONTRACT INSPECTION

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❗
Context	Implementation			
└	_msgSender	Internal 🔒			
└	_msgData	Internal 🔒			
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 🔒	🛑		
└	_approve	Internal 🔒	🛑		
└	_beforeTokenTransfer	Internal 🔒	🛑		
└	_afterTokenTransfer	Internal 🔒	🛑		

Ownable	Implementation	Context		
└	<Constructor>	Public ❗	🛑	NO❗
└	owner	Public ❗		NO❗
└	renounceOwnership	Public ❗	🛑	onlyOwner
└	transferOwnership	Public ❗	🛑	onlyOwner
└	_setOwner	Private 🔐	🛑	
SafeMath	Library			
└	tryAdd	Internal 🔒		
└	trySub	Internal 🔒		
└	tryMul	Internal 🔒		
└	tryDiv	Internal 🔒		
└	tryMod	Internal 🔒		
└	add	Internal 🔒		
└	sub	Internal 🔒		
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
└	sub	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
Clones	Library			
└	clone	Internal 🔒	🛑	
└	cloneDeterministic	Internal 🔒	🛑	
└	predictDeterministicAddress	Internal 🔒		
└	predictDeterministicAddress	Internal 🔒		
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❗

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❗
IERC20Upgradeable	Interface			
└	totalSupply	External ❗		NO❗
└	balanceOf	External ❗		NO❗
└	transfer	External ❗	🛑	NO❗
└	allowance	External ❗		NO❗
└	approve	External ❗	🛑	NO❗
└	transferFrom	External ❗	🛑	NO❗

IERC20MetadataUpgradeable	Interface	IERC20Upgradeable		
└	name	External ❗		NO❗
└	symbol	External ❗		NO❗
└	decimals	External ❗		NO❗
Initializable	Implementation			
ContextUpgradeable	Implementation	Initializable		
└	__Context_init	Internal 🔒	🛑	initializer
└	__Context_init_unchained	Internal 🔒	🛑	initializer
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
ERC20Upgradeable	Implementation	Initializable, ContextUpgradeable, IERC20Upgradeable, IERC20MetadataUpgradeable		
└	__ERC20_init	Internal 🔒	🛑	initializer
└	__ERC20_init_unchained	Internal 🔒	🛑	initializer
└	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 🔒	🛑	
└	_approve	Internal 🔒	🛑	
└	_beforeTokenTransfer	Internal 🔒	🛑	
└	_afterTokenTransfer	Internal 🔒	🛑	
OwnableUpgradeable	Implementation	Initializable, ContextUpgradeable		
└	__Ownable_init	Internal 🔒	🛑	initializer
└	__Ownable_init_unchained	Internal 🔒	🛑	initializer
└	owner	Public ❗		NO❗
└	renounceOwnership	Public ❗	🛑	onlyOwner
└	transferOwnership	Public ❗	🛑	onlyOwner
└	_setOwner	Private 🔐	🛑	

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❗
SafeMathInt	Library			
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	sub	Internal 🔒		
└	add	Internal 🔒		
└	abs	Internal 🔒		
└	toUint256Safe	Internal 🔒		

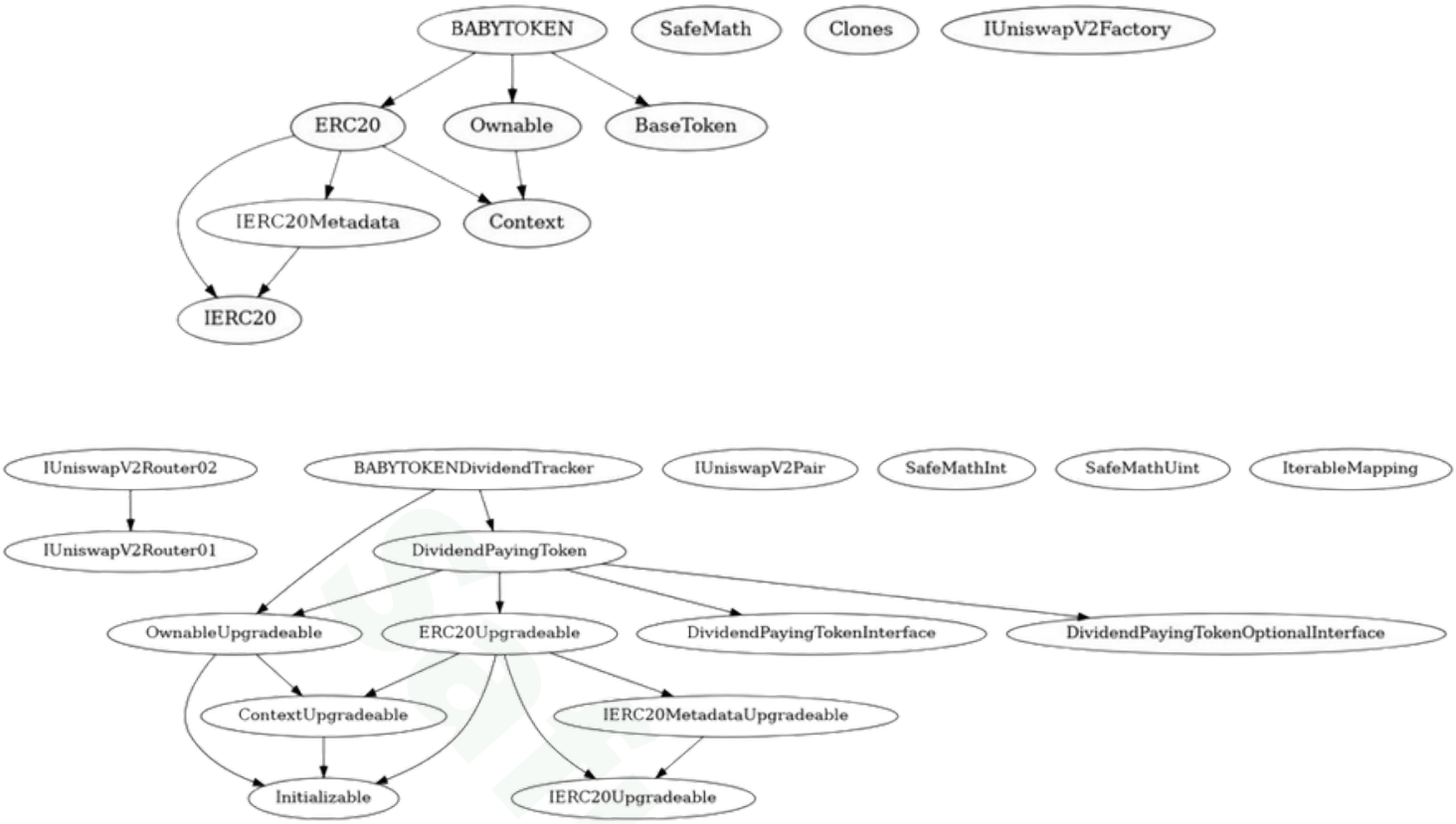
SafeMathUint	Library			
└	toInt256Safe	Internal 🔒		
IterableMapping	Library			
└	get	Public ❗		NO❗
└	getIndexOfKey	Public ❗		NO❗
└	getKeyAtIndex	Public ❗		NO❗
└	size	Public ❗		NO❗
└	set	Public ❗	🛑	NO❗
└	remove	Public ❗	🛑	NO❗
DividendPayingTokenInterface	Interface			
└	dividendOf	External ❗		NO❗
└	withdrawDividend	External ❗	🛑	NO❗
DividendPayingTokenOptionalInterface	Interface			
└	withdrawableDividendOf	External ❗		NO❗
└	withdrawnDividendOf	External ❗		NO❗
└	accumulativeDividendOf	External ❗		NO❗

BABYTOKENDividendTracker	Implementation	OwnableUpgradeable, DividendPayingToken		
└	initialize	External ❗	🛑	initializer
└	_transfer	Internal 🔒		
└	withdrawDividend	Public ❗		NO❗
└	excludeFromDividends	External ❗	🛑	onlyOwner
└	isExcludedFromDividends	Public ❗		NO❗
└	updateClaimWait	External ❗	🛑	onlyOwner
└	updateMinimumTokenBalanceForDividends	External ❗	🛑	onlyOwner
└	getLastProcessedIndex	External ❗		NO❗
└	getNumberOfTokenHolders	External ❗		NO❗
└	getAccount	Public ❗		NO❗
└	getAccountAtIndex	Public ❗		NO❗
└	canAutoClaim	Private 🔐		
└	setBalance	External ❗	🛑	onlyOwner
└	process	Public ❗	🛑	NO❗
└	processAccount	Public ❗	🛑	onlyOwner

BABYTOKEN	Implementation	ERC20, Ownable, BaseToken		
└	<Constructor>	Public ❗	💸	ERC20
└	<Receive Ether>	External ❗	💸	NO❗
└	setSwapTokensAtAmount	External ❗	🛑	onlyOwner
└	updateDividendTracker	Public ❗	🛑	onlyOwner
└	updateUniswapV2Router	Public ❗	🛑	onlyOwner
└	excludeFromFees	Public ❗	🛑	onlyOwner
└	excludeMultipleAccountsFromFees	Public ❗	🛑	onlyOwner
└	setMarketingWallet	External ❗	🛑	onlyOwner
└	setTokenRewardsFee	External ❗	🛑	onlyOwner
└	setLiquiditFee	External ❗	🛑	onlyOwner
└	setMarketingFee	External ❗	🛑	onlyOwner
└	setAutomatedMarketMakerPair	Public ❗	🛑	onlyOwner
└	_setAutomatedMarketMakerPair	Private 🔐	🛑	
└	updateGasForProcessing	Public ❗	🛑	onlyOwner
└	updateClaimWait	External ❗	🛑	onlyOwner
└	getClaimWait	External ❗		NO❗
└	updateMinimumTokenBalanceForDividends	External ❗	🛑	onlyOwner
└	getMinimumTokenBalanceForDividends	External ❗		NO❗
└	getTotalDividendsDistributed	External ❗		NO❗
└	isExcludedFromFees	Public ❗		NO❗
└	withdrawableDividendOf	Public ❗		NO❗
└	dividendTokenBalanceOf	Public ❗		NO❗
└	excludeFromDividends	External ❗	🛑	onlyOwner
└	isExcludedFromDividends	Public ❗		NO❗
└	getAccountDividendsInfo	External ❗		NO❗
└	getAccountDividendsInfoAtIndex	External ❗		NO❗
└	processDividendTracker	External ❗	🛑	NO❗
└	claim	External ❗	🛑	NO❗
└	getLastProcessedIndex	External ❗		NO❗
└	getNumberOfDividendTokenHolders	External ❗		NO❗
└	_transfer	Internal 🔒	🛑	
└	swapAndSendToFee	Private 🔐	🛑	
└	swapAndLiquify	Private 🔐	🛑	
└	swapTokensForEth	Private 🔐	🛑	
└	swapTokensForCake	Private 🔐	🛑	
└	addLiquidity	Private 🔐	🛑	
└	swapAndSendDividends	Private 🔐	🛑	

Symbol	Meaning
🛑	Function can modify state
💸	Function is payable
🔐	Private function
🔒	Internal function
NO❗	Function has no modifier

INHERITANCE TREE



Inheritance is a feature of the object-oriented programming language. It is a way of extending the functionality of a program, used to separate the code, reduces the dependency, and increases the re-usability of the existing code. Solidity supports inheritance between smart contracts, where multiple contracts can be inherited into a single contract.

Important Snippets

Exclude multiple accounts from fees (ownership renounced)

```
function excludeMultipleAccountsFromFees(
    address[] calldata accounts,
    bool excluded
) public onlyOwner {
    for (uint256 i = 0; i < accounts.length; i++) {
        _isExcludedFromFees[accounts[i]] = excluded;
    }

    emit ExcludeMultipleAccountsFromFees(accounts, excluded);
}
```

Exclude from dividents (ownership renounced)

```
function excludeFromDividends(address account) external onlyOwner {
    dividendTracker.excludeFromDividends(account);
}
```

Owner can't set fees over 25% (ownership renounced)

```
function setTokenRewardsFee(uint256 value) external onlyOwner {
    tokenRewardsFee = value;
    totalFees = tokenRewardsFee.add(liquidityFee).add(marketingFee);
    require(totalFees <= 25, "Total fee is over 25%");
}

function setLiquiditFee(uint256 value) external onlyOwner {
    liquidityFee = value;
    totalFees = tokenRewardsFee.add(liquidityFee).add(marketingFee);
    require(totalFees <= 25, "Total fee is over 25%");
}

function setMarketingFee(uint256 value) external onlyOwner {
    marketingFee = value;
    totalFees = tokenRewardsFee.add(liquidityFee).add(marketingFee);
    require(totalFees <= 25, "Total fee is over 25%");
}
```

GOOD PRACTICES

- Renounced ownership
- The owner cannot stop or pause the smart contract
- The owner cannot mint new tokens after deployment
- The owner cannot set the fees over 25%
- The owner cannot set max Tx
- The smart contract utilizes "SafeMath" to prevent overflows

```
library SafeMath {
    function tryAdd(uint256 a, uint256 b) internal pure returns (bool, uint2  , {
        unchecked {
            uint256 c = a + b;
            if (c < a) return (false, 0);
            return (true, c);
        }
    }

    function trySub(uint256 a, uint256 b) internal pure returns (bool, uint256) {
        unchecked {
            if (b > a) return (false, 0);
            return (true, a - b);
        }
    }

    function tryMul(uint256 a, uint256 b) internal pure returns (bool, uint256) {
        unchecked {
            // Gas optimization: this is cheaper than requiring 'a' not being zero, but
            // benefit is lost if 'b' is also tested.
            // See: https://github.com/OpenZeppelin/openzeppelin-contracts/pull/522
            if (a == 0) return (true, 0);
            uint256 c = a * b;
            if (c / a != b) return (false, 0);
            return (true, c);
        }
    }

    function tryDiv(uint256 a, uint256 b) internal pure returns (bool, uint256) {
        unchecked {
            if (b == 0) return (false, 0);
            return (true, a / b);
        }
    }

    function tryMod(uint256 a, uint256 b) internal pure returns (bool, uint256) {
        unchecked {
            if (b == 0) return (false, 0);
            return (true, a % b);
        }
    }
```

DISCLAIMER

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The purpose of the audit is to analyse the on-chain smart contract source code, and to provide basic overview of the project.

While we have used all the information available to us for this straightforward investigation, you should not rely on this report only — we recommend proceeding with several independent audits Be aware that smart contracts deployed on a blockchain aren't secured enough against external vulnerability, or a hack. Be aware that active smart contract owner privileges constitute an elevated impact to smart contract's safety and security. Therefore, SafuAudit does not guarantee the explicit security of the audited smart contract. The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

AUDIT RESULTS

CRITICAL

No critical severity issues have been found.

MEDIUM

No medium severity issues have been found.

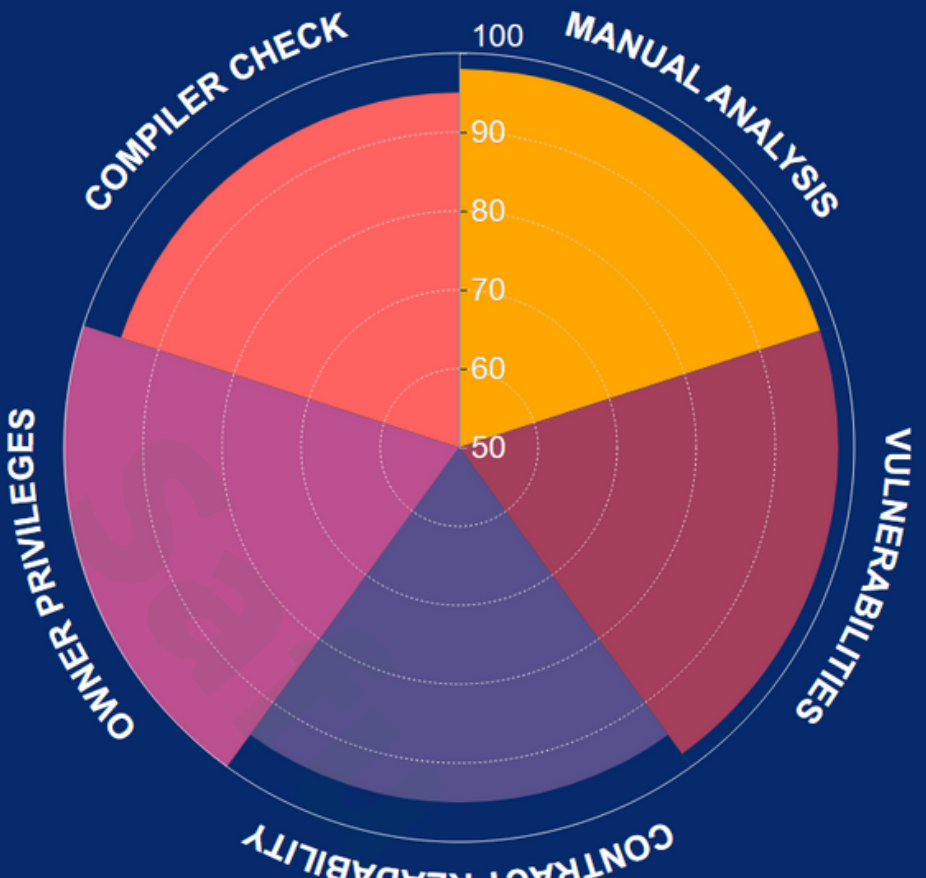
MINOR

- Using "tx.origin" as a security control can lead to authorization bypass vulnerabilities. Consider using "msg.sender" instead.

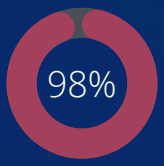
INFORMATIONAL

The standard audit model does not offer suggestions and consulting for improvements of efficacity.

SAFUSCORE



Manual Analysis



Vulnerabilities

Contract Readability

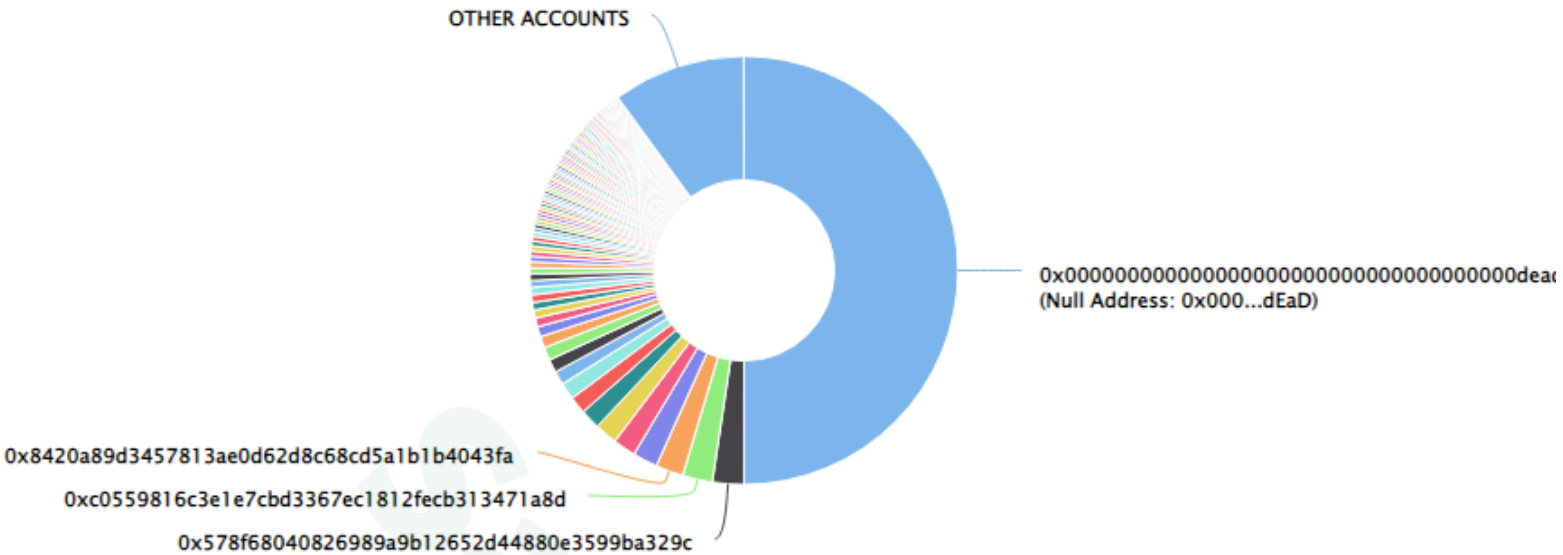
Owner Privileges

Compiler Check

Final Score:97.2

SUMMARY

Top 10 holders



Rank	Address	Quantity (Token)	Percentage
1	Null Address: 0x000...dEaD	500,000,000,000,000	50.0000%
2	0x578f68040826989a9b12652d44880e3599ba329c	23,712,045,286,037.759544815831410437	2.3712%
3	0xc0559816c3e1e7cbd3367ec1812fecb313471a8d	22,579,269,731,434.330152344196958792	2.2579%
4	0x8420a89d3457813ae0d62d8c68cd5a1b1b4043fa	20,940,346,433,462.215435996211346412	2.0940%
5	0x0799b329bf1702584a31c162118d56270e3aaaaa	18,739,294,781,481.455838328049518428	1.8739%
6	0x439dfb1e60f029bd1fc4ec7f1226cff49df9e3b3	17,117,820,356,782.09895333132530333	1.7118%
7	0x15a36ebd9f70b166a67fb1ca42be19161a21e177	17,049,292,844,854.332565421142084447	1.7049%
8	0xc4d39fade14095dd56a76a17bf8151f99ef36563	15,114,720,647,966.611540066712042953	1.5115%
9	0x423aed61553eec2c423983127694b4dcc8da71ac	13,147,939,549,324.507027201025268794	1.3148%
10	0x22b52cee29406ca119592d87babcb0c69adce19f	12,669,293,822,053.833011613238484108	1.2669%

Conclusion

Project FamilyDao does not contain any severe issues or risk characteristics. Owner is renounced, which means all owner capabilities are now abandoned.

SafuAudit has tested the security based on manual and automated tests. Please note that we don't offer any warranties for business model.

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