

# SMART CONTRACT AUDITS AND BLOCKCHAIN SECURITY



**SAFUAAUDIT**  
SMART CONTRACT AUDITS AND BLOCKCHAIN SECURITY



**PROJECT:** TINDEARN

**DATE:** May 24, 2022



[www.safuaudit.com](http://www.safuaudit.com)

# INTRODUCTION

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<b>Client</b>	Tindearn(LIKE)
<b>Language</b>	Solidity
<b>Contract address</b>	0x31eDC600F94ec8767380B16B8548EbF7464584eC
<b>Owner(DAO)</b>	0xB89FA186e440f6219D66Fd3fb24EF05F0D1e5094
<b>Deployer</b>	0xB89FA186e440f6219D66Fd3fb24EF05F0D1e5094
<b>SHA1-Hash</b>	75862be9177c8a5c5ddb5c97017c55a4297ceb8d
<b>Decimals</b>	18
<b>Supply</b>	200,000,000
<b>Platform</b>	Binance Smart Chain
<b>Compiler</b>	v0.8.4+commit.c7e474f2
<b>Optimization</b>	Yes with 200 runs
<b>Website</b>	<a href="https://www.tindearn.com/">https://www.tindearn.com/</a>
<b>Telegram</b>	<a href="https://t.me/tindearngroup">https://t.me/tindearngroup</a>
<b>Twitter</b>	<a href="https://twitter.com/Tindearn">https://twitter.com/Tindearn</a>



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# APPROACH

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## 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

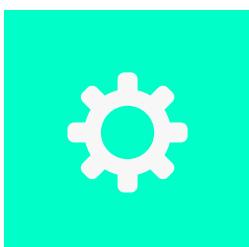
The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch, that lead to scams and rugpulls.



## 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
- Mythril
- Open Zeppelin Code Analyzer
- Solidity Code Complier
- Hardhat



# RISK CLASSIFICATION

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## CRITICAL

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

## MEDIUM

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

## MINOR

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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

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



# OVERVIEW

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## Fees

- Buy Fees: 0%
- Sell Fees: 7%

## Fees privileges

- Can set fees up to 15%

## Ownership

- Owned

## Minting

- No mint function

## Max Tx Amount

- Can't set max Tx amount

## Pause function

- Can't pause trading

## Blacklist

- Can't blacklist

## Other privileges

- Can exclude from fees



# CONTRACT INSPECTION

## Imported contracts or frameworks used:

```
| **IAccessControl** | Interface | |||
| **Context** | Implementation | |||
| **Strings** | Library | |||
| **IERC165** | Interface | |||
| **ERC165** | Implementation | IERC165 | ||
| **AccessControl** | Implementation | Context, IAccessControl, ERC165 | ||
| **IERC20** | Interface | |||
| **IERC20Metadata** | Interface | IERC20 | ||
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata | ||
| **IUniswapV2Router02** | Interface | |||
| **IUniswapV2Factory** | Interface | |||
```

## Tested Contract File:

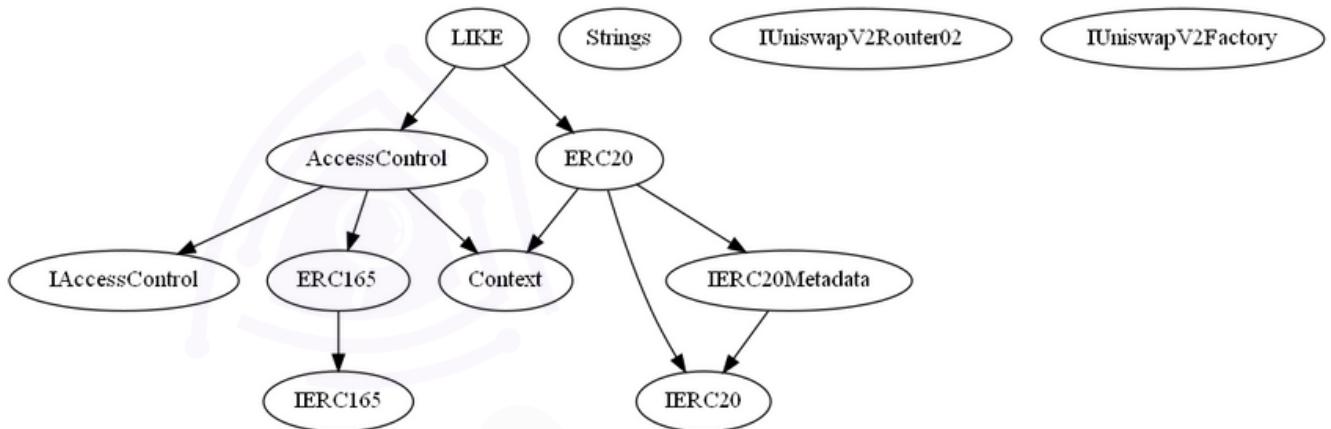
File Name	SHA-1 Hash
Like.sol	75862be9177c8a5c5ddb5c97017c55a4297ceb8d

```
| **LIKE** | Implementation | ERC20, AccessControl | ||
| L | <Constructor> | Public ! | ○ | ERC20 |
| L | <Receive Ether> | External ! | $ | NO! |
| L | _transfer | Internal 🔒 | ○ | |
| L | _swapMarketingFeeBalance | Internal 🔒 | ○ | |
| L | _swapLikeForBnb | Internal 🔒 | ○ | |
| L | _liquify | Internal 🔒 | ○ | |
| L | _addLiquidity | Internal 🔒 | ○ | |
| L | _setAutomatedMarketMakerPair | Internal 🔒 | ○ | |
| L | withdrawDAO | External ! | ○ | onlyRole |
| L | withdrawERC20DAO | External ! | ○ | onlyRole |
| L | manualMarketingFeeSwapDAO | External ! | ○ | onlyRole |
| L | manualLiquifyDAO | External ! | ○ | onlyRole |
| L | changeDAO | External ! | ○ | onlyRole |
| L | revokeDAO | External ! | ○ | onlyRole |
| L | setMarketingAddressDAO | External ! | ○ | onlyRole |
| L | setAutomatedMarketMakerPairDAO | External ! | ○ | onlyRole |
| L | excludeFromFeesDAO | External ! | ○ | onlyRole |
| L | setMinimumMarketingFeeBalanceToSwapDAO | External ! | ○ | onlyRole |
| L | setMinimumLiquidityFeeBalanceToSwapDAO | External ! | ○ | onlyRole |
| L | enableSwappingFeesDAO | External ! | ○ | onlyRole |
| L | stopSwappingFeesDAO | External ! | ○ | onlyRole |
| L | setBuyingFeeDAO | External ! | ○ | onlyRole |
| L | setSellingFeeDAO | External ! | ○ | onlyRole |
| L | setMarketingFeePercentageDAO | External ! | ○ | onlyRole |
```

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.



# MANUAL FUNCTIONS ANALYSIS

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

	<b>Tested</b>	<b>Result</b>
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



# VULNERABILITIES TEST

ID	Description	
V-01	Function Default Visibility	Passed
V-02	Integer Overflow and Underflow	Passed
V-03	Outdated Compiler Version	Passed
V-04	FloatingPragma	Passed
V-05	Unchecked Call Return Value	Passed
V-06	Unprotected Ether Withdrawal	Passed
V-07	Unprotected SELF-DESTRUCT Instruction	Passed
V-08	Re-entrancy	Passed
V-09	State Variable Default Visibility	Passed
V-10	Uninitialized Storage Pointer	Passed
V-11	Assert Violation	Passed
V-12	Use of Deprecated Solidity Functions	Passed
V-13	Delegate Call to Untrusted Callee	Passed
V-14	DoS with Failed Call	Passed
V-15	Transaction Order Dependence	Passed
V-16	Authorization through tx.origin	Passed
V-17	Block values as a proxy for time	Passed



<b>V-18</b>	Signature Malleability	<b>Passed</b>
<b>V-19</b>	Incorrect Constructor Name	<b>Passed</b>
<b>V-20</b>	Shadowing State Variables	<b>Passed</b>
<b>V-21</b>	Weak Sources of Randomness from Chain Attributes	<b>Passed</b>
<b>V-22</b>	Missing Protection against Signature Replay Attacks	<b>Passed</b>
<b>V-23</b>	Lack of Proper Signature Verification	<b>Passed</b>
<b>V-24</b>	Requirement Violation	<b>Passed</b>
<b>V-25</b>	Write to Arbitrary Storage Location	<b>Passed</b>
<b>V-26</b>	Incorrect Inheritance Order	<b>Passed</b>
<b>V-27</b>	Insufficient Gas Griefing	<b>Passed</b>
<b>V-28</b>	Arbitrary Jump with Function Type Variable	<b>Passed</b>
<b>V-29</b>	DoS With Block Gas Limit	<b>Passed</b>
<b>V-30</b>	Typographical Error	<b>Passed</b>
<b>V-31</b>	Right-To-Left-Override control character(U+202E)	<b>Passed</b>
<b>V-32</b>	Presence of unused variables	<b>Passed</b>
<b>V-33</b>	Unexpected Ether balance	<b>Passed</b>
<b>V-34</b>	Hash Collisions With Multiple Variable Length Arguments	<b>Passed</b>
<b>V-35</b>	Message call with the hardcoded gas amount	<b>Passed</b>
<b>V-36</b>	Code With No Effects(Irrelevant/Dead Code)	<b>Passed</b>
<b>V-37</b>	Unencrypted Private Data On-Chain	<b>Passed</b>



# FINDINGS

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ID	Category	Issue	Severity
CE-OF	Centralization	Owner Accessible Functions	Minor
CS-01	Coding Standards	Dead Code	Informational



# CE-OF: Owner Accessible Functions

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## Description

Contract uses AccessControl for implementing role-based access control.  
The owner has the permission through onlyRole(DAO) to the following functions:

- 1.withdrawDAO()
- 2.withdrawERC20DAO()
- 3.manualMarketingFeeSwapDAO()
- 4.manualLiquifyDAO()
- 5.changeDAO()
- 6.revokeDAO()
- 7.setMarketingAddressDAO()
- 8.setAutomatedMarketMakerPairDAO()
- 9.excludeFromFeesDAO()
- 10.setMinimumMarketingFeeBalanceToSwapDAO()
- 11.setMinimumLiquidityFeeBalanceToSwapDAO()
- 12.enableSwappingFeesDAO()
- 13.stopSwappingFeesDAO()
- 14.setBuyingFeeDAO()
- 15.setSellingFeeDAO()
- 16.setMarketingFeePercentageDAO()

The "DAO" role has authority over the above functions that can manipulate the project functionality. Any compromise to the owner account may allow a hacker to take advantage of this authority.

## Recommandation

- We advise the client to carefully manage the privilege accounts' private key to avoid any potential risks of being hacked.
- Renounce Ownership at some point in time.



# CS-01: Coding Standards

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## Line # 125: Dead Code

### Description

\_burn() function - line #857-872 is not used.  
\_setRoleAdmin() function - line #441-445 is not used.  
toHexString() function - line #158-169 is not used.  
toString() function - line #133-153 is not used.

### Recommendation

- Remove unused functions for code clarity and easier review.



## GOOD PRACTICES

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- The owner cannot mint new tokens after deployment
- The owner cannot set the fees above 15%
- The owner cannot stop or pause the contract
- The owner cannot set a transaction limit



# WEBSITE

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<b>Website</b>	<a href="https://www.tindearn.com/">https://www.tindearn.com/</a>
<b>Domain Registry</b>	<a href="http://www.namecheap.com">http://www.namecheap.com</a>
<b>Domain Expiry Date</b>	2023-05-17
<b>Response Code</b>	200
<b>SSL Checker and HTTPS Test</b>	Passed
<b>Deprecated HTML tags</b>	Passed
<b>Robots.txt</b>	Informational
<b>Sitemap Test</b>	Informational
<b>SEO Friendly URL</b>	Passed
<b>Responsive Test</b>	Passed
<b>JS Error Test</b>	Passed
<b>Console Errors Test</b>	Passed
<b>Site Loading Speed Test</b>	0.98 seconds - Passed
<b>HTTP2 Test</b>	Passed
<b>Safe Browsing Test</b>	Passed



# DISCLAIMER

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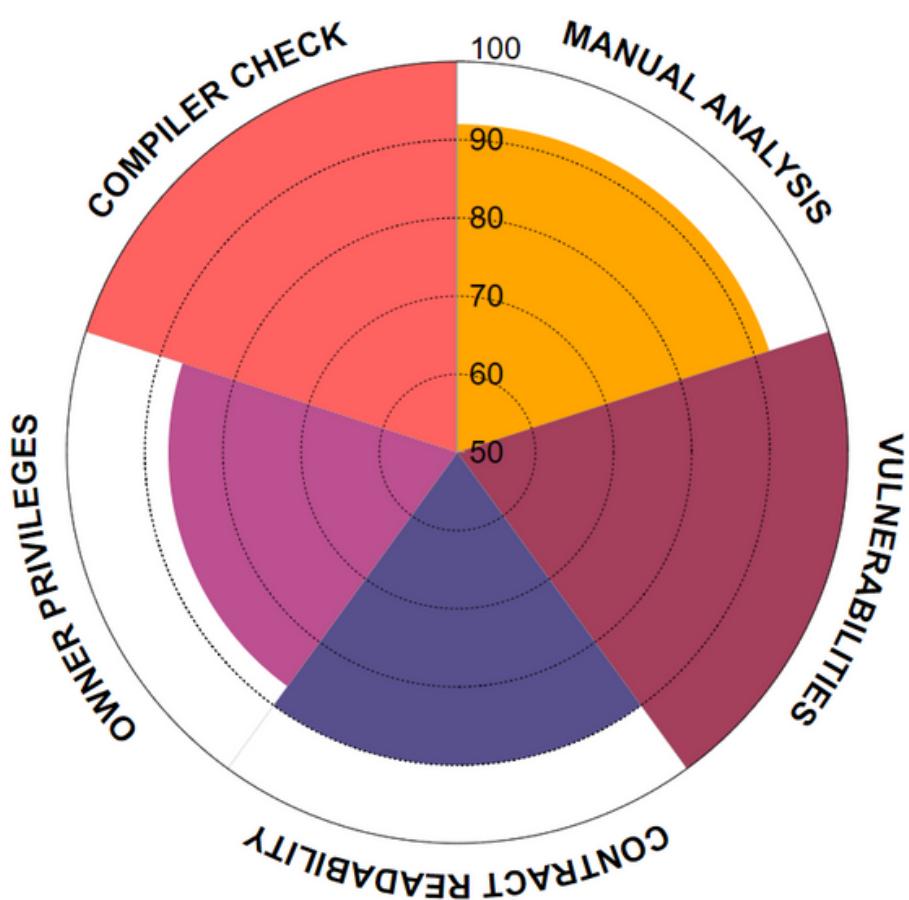
The purpose of the audit is to analyze the on-chain smart contract source code and to provide a basic overview of the project.

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 on the smart contract 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.



# RATING

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Manual Analysis



Vulnerabilities



Contract Readability



Owner Privileges



Compiler Check

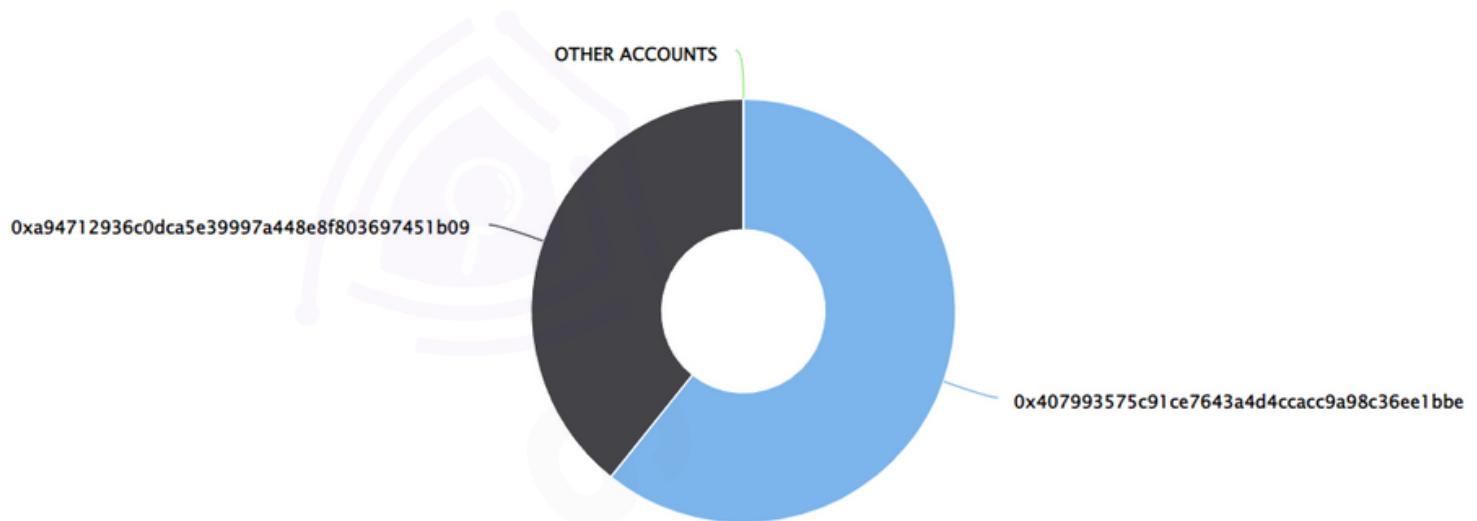
Final Score: **93.8**



# SUMMARY

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## Top 10 holders



Rank	Address	Quantity (Token)	Percentage
1	<a href="#">0x407993575c91ce7643a4d4ccacc9a98c36ee1bbe</a>	121,500,000	60.7500%
2	<a href="#">0xa94712936c0dca5e39997a448e8f803697451b09</a>	78,500,000	39.2500%

## CONCLUSION

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Project Tindearn (LIKE) does not contain any severe issues or risk characteristics.

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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*"Only in growth, reform, and change, paradoxically enough, is true security to be found."*



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