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Blockchain Security | Smart Contract Audits | KYC

MADE IN GERMANY

Aki Inu Audit

Security Assessment

19.July,2022

For



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Version	Date	Description
1.0	18.July,2022	<ul style="list-style-type: none">• Layout project• Automated- /Manual-Security Testing• Summary

Network

Binance (BSC)

Website

<https://akitoken.com/>

Twitter

<https://twitter.com/akiinutoken/>

Telegram

https://t.me/Aki_Inu_Official

Instagram

<https://www.instagram.com/akiinutoken/>

Description

In the big world of memes, populated by many animals, there is a dog from the future. Aki Inu.

Aki Inu aims to create an advanced level of dog community.

Unlike the other memes, his first ecosystem products will be released immediately.

This not only underlines the seriousness of the project but provides immediate utility to the token.

Project Engagement

During the 18th of July 2022, **Akilnu** team engaged Solidproof.io to audit the smart contracts that they created. The engagement was technical in nature and focused on identifying the security flaws in the design and implementation of the contracts. They provided Solidproof.io with access to their code repository and whitepaper.

Logo



Contract Links

v1.0

<https://bscscan.com/address/0x4b6cb2bf1f0b594d0211c4df2b0dd1aa4c7a1892#code>

Vulnerability & Risk Level

Risk represents the probability that a certain source-threat will exploit vulnerability, and the impact of that event on the organization or system. Risk Level is computed based on CVSS version 3.0.

Level	Value	Vulnerability	Risk (Required Action)
Critical	9 - 10	A vulnerability that can disrupt the contract functioning in a number of scenarios, or creates a risk that the contract may be broken.	Immediate action to reduce risk level.
High	7 – 8.9	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.	Implementation of corrective actions as soon as possible.
Medium	4 – 6.9	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.	Implementation of corrective actions in a certain period.
Low	2 – 3.9	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.	Implementation of certain corrective actions or accepting the risk.
Informational	0 – 1.9	A vulnerability that have informational character but is not effecting any of the code.	An observation that does not determine a level of risk

Auditing Strategy and Techniques Applied

Throughout the review process, care was taken to evaluate the repository for security-related issues, code quality, and adherence to specification and best practices. To do so, reviewed line-by-line by our team of expert pentesters and smart contract developers, documenting any issues as there were discovered.

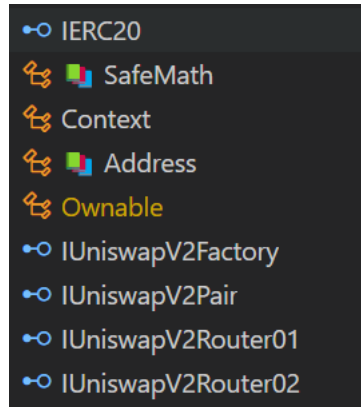
Methodology

The auditing process follows a routine series of steps:

1. Code review that includes the following:
 - i) Review of the specifications, sources, and instructions provided to SolidProof to make sure we understand the size, scope, and functionality of the smart contract.
 - ii) Manual review of code, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
 - iii) Comparison to specification, which is the process of checking whether the code does what the specifications, sources, and instructions provided to SolidProof describe.
2. Testing and automated analysis that includes the following:
 - i) Test coverage analysis, which is the process of determining whether the test cases are actually covering the code and how much code is exercised when we run those test cases.
 - ii) Symbolic execution, which is analyzing a program to determine what inputs causes each part of a program to execute.
3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts.

Used Code from other Frameworks/Smart Contracts (direct imports)

Imported packages:



Tested Contract Files

This audit covered the following files listed below with a SHA-1 Hash.

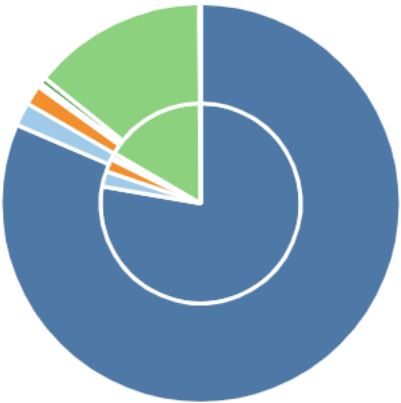
A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.

v1.0

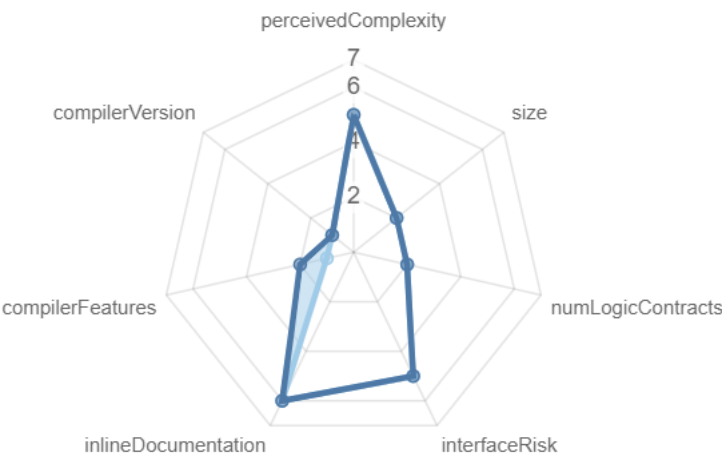
File Name	SHA-1 Hash
contracts/akiinu.sol	6b4d2d65ec5c331e222a2ba09936eaa35b8c13b1

Metrics

Source Lines v1.0



Risk Level v1.0



Capabilities

Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	1	2	5	2

Exposed Functions

This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.

Version	Public	Payable
1.0	101	6

Version	External	Internal	Private	Pure	View
1.0	72	98	24	25	46

State Variables

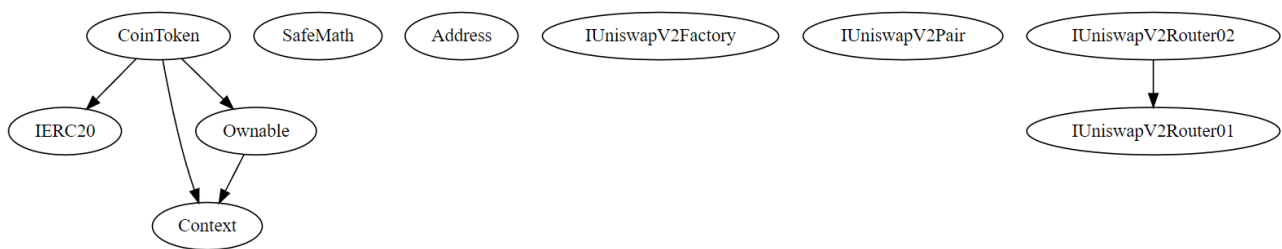
Version	Total	Public
1.0	29	11

Capabilities

Version	Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	<code>^0.8.4</code>		Yes	Yes	

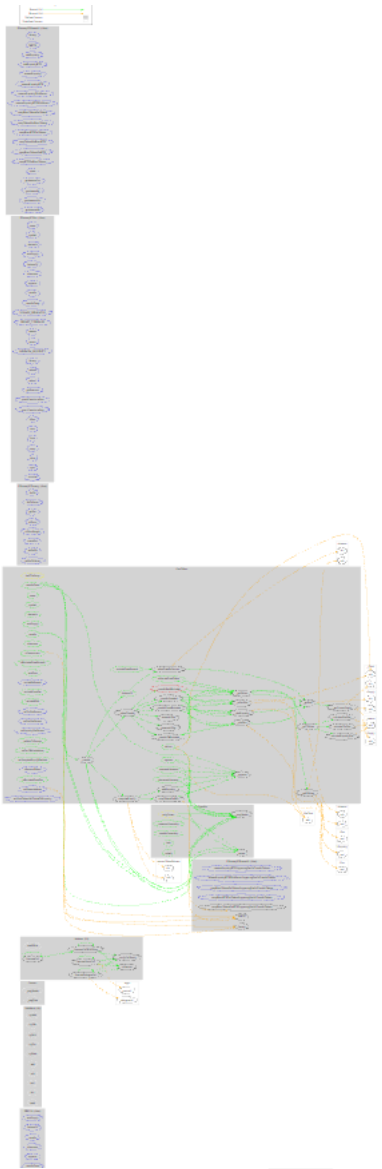
Version	Transfers ETH	Low-Level Calls	DelegateCall	Uses Hash Functions	EC Recover	New/Create/Create2
1.0			Yes			

Inheritance Graph v1.0



Call Graph

v1.0

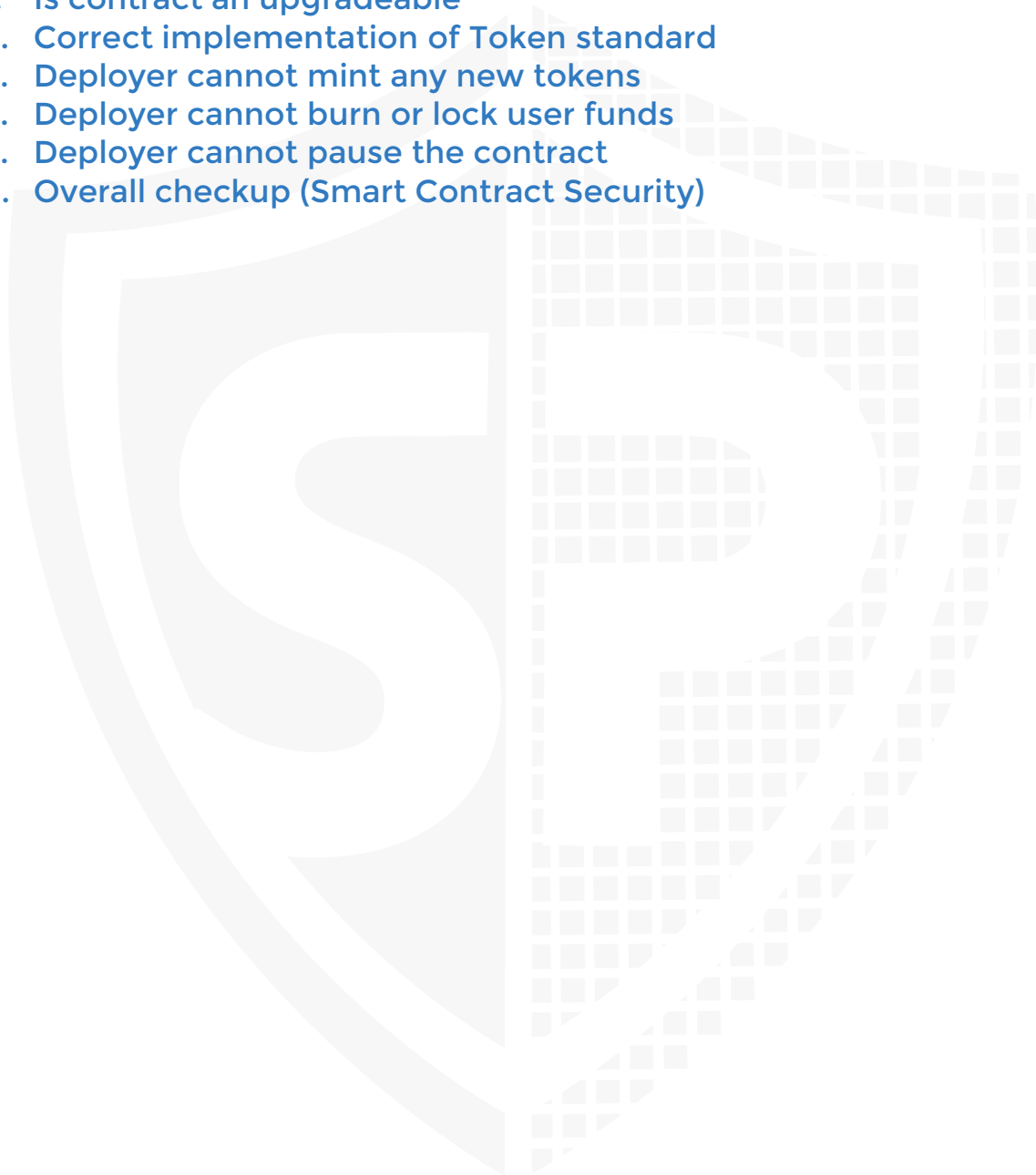


Scope of Work/Verify Claims

The above token Team provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract (usual the same name as team appended with .sol).

We will verify the following claims:

1. Is contract an upgradeable
2. Correct implementation of Token standard
3. Deployer cannot mint any new tokens
4. Deployer cannot burn or lock user funds
5. Deployer cannot pause the contract
6. Overall checkup (Smart Contract Security)



Is contract an upgradeable

Name	
Is contract an upgradeable?	No



Correct implementation of Token standard

ERC20				
Function	Description	Exist	Tested	Verified
totalSupply	Provides information about the total token supply			
balanceOf	Provides account balance of the owner's account			
transfer	Executes transfers of a specified number of tokens to a specified address			
transferFrom	Executes transfers of a specified number of tokens from a specified address			
approve	Allow a spender to withdraw a set number of tokens from a specified account			
allowance	Returns a set number of tokens from a spender to the owner			

Write functions of contracts

v1.0

1. approve	12. setDevWalletAddress
2. decreaseAllowance	13. setLiquidityFeePercent
3. deliver	14. setMaxTxPercent
4. excludeFromFee	15. setNumTokensSellToAddToLiquidity
5. excludeFromReward	16. setRouterAddress
6. includeInFee	17. setSwapAndLiquifyEnabled
7. includeInReward	18. setTaxFeePercent
8. increaseAllowance	19. transfer
9. lock	20. transferFrom
10. renounceOwnership	21. transferOwnership
11. setDevFeePercent	22. unlock

Deployer cannot mint any new tokens

Name	Exist	Tested	Status
Deployer cannot mint			
Max / Total Supply	N/A		

Comments:

The supply will be set while deployment of the contract.



Deployer cannot burn or lock user funds

Name	Exist	Tested	Status
Deployer cannot lock			
Deployer cannot burn			

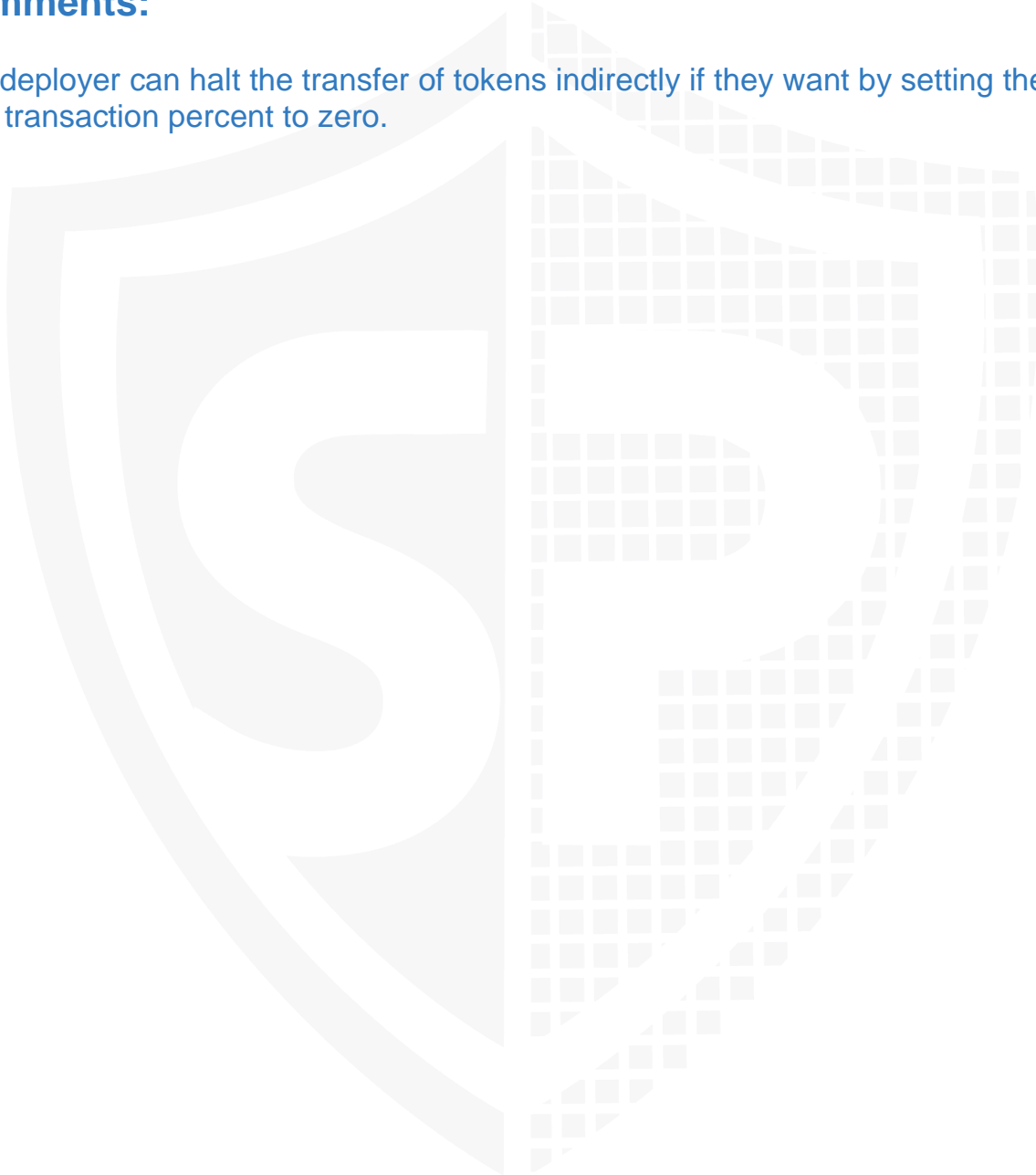


Deployer cannot pause the contract

Name	Exist	Tested	Status
Deployer cannot pause			

Comments:

The deployer can halt the transfer of tokens indirectly if they want by setting the max transaction percent to zero.



Overall checkup (Smart Contract Security)

Tested	Verified

Legend

Attribute	Symbol
Verified / Checked	
Partly Verified	
Unverified / Not checked	
Not available	

Modifiers and public functions

v1.0

```
◆ <Constructor> 💰
◆ transfer
◆ approve
◆ transferFrom
◆ increaseAllowance
◆ decreaseAllowance
◆ deliver
◆ excludeFromReward
Ⓜ onlyOwner
◆ includeInReward
Ⓜ onlyOwner
◆ excludeFromFee
Ⓜ onlyOwner
◆ includeInFee
Ⓜ onlyOwner
◆ setTaxFeePercent
Ⓜ onlyOwner
◆ setDevFeePercent
Ⓜ onlyOwner
```

```
◆ setLiquidityFeePercent 9
Ⓜ onlyOwner
◆ setMaxTxPercent 9
Ⓜ onlyOwner
◆ setDevWalletAddress 9
Ⓜ onlyOwner
◆ setSwapAndLiquifyEnabled 9
Ⓜ onlyOwner
◆ setRouterAddress 9
Ⓜ onlyOwner
◆ setNumTokensSellToAddTo... 9
Ⓜ onlyOwner
```

Comments:

- Some of the functions has a modifier "onlyOwner" which allows an authority to perform certain actions. Some of them are mentioned below:
 - The owner can set the maximum fee percentage as 100% and transfer all the funds to the fee address.
 - Owner can include/exclude any wallet address in fees/reward
 - Owner can set the devFee address to any other address.
 - The owner can set the maximum transaction amount to zero and stop everyone from transferring tokens.

Source Units in Scope

v1.0

File	Logic Contr acts	Interfa ces	Lin es	nLin es	nSL OC	Comm ent Lines	Comp lex. Score
contracts/akii nu.sol	5	5	913	694	562	18	566
Totals	5	5	913	694	562	18	566

Legend

Attribute	Description
Lines	total lines of the source unit
nLines	normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
nSLOC	normalized source lines of code (only source-code lines; no comments, no blank lines)
Comment Lines	lines containing single or block comments
Complexity Score	a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces, ...)

Audit Results

AUDIT PASSED

Critical issues

No critical issues

High issues

No high issues

Medium issues

No medium issues

Low issues

Issue	File	Type	Line	Description
#1	Main	A floating pragma is set	7	The current pragma Solidity directive is ,“^0.8.4”“.
#2	Main	Missing Events	631,635,639,643,647,651,655	Emit an event for critical parameter changes. In this case, minting, burning of tokens, etc.
#3	Main	Missing zero check	476,655	Check that the address is not zero
#4	Main	Halting Transactions	651	The owner can set the maximum transaction amount to zero and stop everyone from selling of tokens to the AMM because there is no prevention against it.
#5	Main	Can set the fee as 100%	639,643,647	The max tax fee can be set s 100%. In that case, all the transfers by wallets that are included in fee will not go through and the complete transfer amount will be deducted as fee.
#6	Main	Contract doesn't import npm packages	-	We recommend to import all packages from npm directly

		from source (like OpenZeppelin etc.)		without flatten the contract. Functions could be modified or can be susceptible to vulnerabilities
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Informational issues

Issue	File	Type	Line	Description
#1	Main	Unused return values	836	Ensure that all the return values of the function calls are used and handle both success and failure cases if needed by the business logic
#2	Main	NatSpec documentation missing	—	If you started to comment your code, also comment all other functions, variables etc.
#3	Main	Shadowing Local Variables	539, 767	Rename the local variables that shadow another component. In this case, "owner" is shadowing the variable with the Ownable contract's "owner" variable

Audit Comments

We recommend you to use the special form of comments (NatSpec Format, Follow link for more information <https://docs.soliditylang.org/en/v0.5.10/natspec-format.html>) for your contracts to provide rich documentation for functions, return variables and more. This helps investors to make clear what that variables, functions etc. do.

19.July,2022:

- There is still an owner (Owner still has not renounced ownership)
- Developer can Enable/Disable the swapping functionality.
- Owner can set the fee as 100 percent without emitting an event and gain all the tokens that are being transferred.
- Owner can set maximum transaction amount as zero percent and halt all the transfers.
- Read the whole report and modifiers section for more information.

SWC Attacks

ID	Title	Relationships	Status
SWC-1136	Unencrypted Private Data On-Chain	CWE-767: Access to Critical Private Variable via Public Method	PASSED
SWC-1135	Code With No Effects	CWE-1164: Irrelevant Code	PASSED
SWC-1134	Message call with hardcoded gas amount	CWE-655: Improper Initialization	PASSED
SWC-1133	Hash Collisions With Multiple Variable Length Arguments	CWE-294: Authentication Bypass by Capture-replay	PASSED
SWC-1132	Unexpected Ether balance	CWE-667: Improper Locking	PASSED
SWC-1131	Presence of unused variables	CWE-1164: Irrelevant Code	PASSED

131			
SWC:130	Right-To-Left-Override control character (U+202E)	CWE-451: User Interface (UI) Misrepresentation of Critical Information	PASSED
SWC:129	Typographical Error	CWE-480: Use of Incorrect Operator	PASSED
SWC:128	DoS With Block Gas Limit	CWE-400: Uncontrolled Resource Consumption	PASSED
SWC:127	Arbitrary Jump with Function Type Variable	CWE-695: Use of Low-Level Functionality	PASSED
SWC:125	Incorrect Inheritance Order	CWE-696: Incorrect Behavior Order	PASSED
SWC:	Write to Arbitrary	CWE-123: Write-what-where Condition	PASSED

<u>1</u> <u>2</u> <u>4</u>	Storage Location		
<u>S</u> <u>W</u> <u>C</u> : <u>1</u> <u>2</u> <u>3</u>	Requirement Violation	CWE-573: Improper Following of Specification by Caller	PASSED
<u>S</u> <u>W</u> <u>C</u> : <u>1</u> <u>2</u> <u>2</u>	Lack of Proper Signature Verification	CWE-345: Insufficient Verification of Data Authenticity	PASSED
<u>S</u> <u>W</u> <u>C</u> : <u>1</u> <u>2</u> <u>1</u>	Missing Protection against Signature Replay Attacks	CWE-347: Improper Verification of Cryptographic Signature	PASSED
<u>S</u> <u>W</u> <u>C</u> : <u>1</u> <u>2</u> <u>0</u>	Weak Sources of Randomness from Chain Attributes	CWE-330: Use of Insufficiently Random Values	PASSED
<u>S</u> <u>W</u> <u>C</u> : <u>1</u> <u>1</u> <u>1</u> <u>9</u>	Shadowing State Variables	CWE-710: Improper Adherence to Coding Standards	NOT PASSED

S W C : 1 1 8	Incorrect Constructor Name	CWE-665: Improper Initialization	PASSED
S W C : 1 1 7	Signature Malleability	CWE-347: Improper Verification of Cryptographic Signature	PASSED
S W C : 1 1 6	Timestamp Dependence	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
S W C : 1 1 5	Authorization through tx.origin	CWE-477: Use of Obsolete Function	PASSED
S W C : 1 1 4	Transaction Order Dependence	CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')	PASSED
S W C : 1 1 3	DoS with Failed Call	CWE-703: Improper Check or Handling of Exceptional Conditions	PASSED

S W C : 1 1 2	Delegatecall to Untrusted Callee	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
S W C : 1 1 1	Use of Deprecated Solidity Functions	CWE-477: Use of Obsolete Function	PASSED
S W C : 1 1 0	Assert Violation	CWE-670: Always-Incorrect Control Flow Implementation	PASSED
S W C : 1 0 9	Uninitialized Storage Pointer	CWE-824: Access of Uninitialized Pointer	PASSED
S W C : 1 0 8	State Variable Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED
S W C : 1 0 7	Reentrancy	CWE-841: Improper Enforcement of Behavioral Workflow	PASSED

S W C : : 1 0 6	Unprotected SELFDESTR UCT Instruction	CWE-284: Improper Access Control	PASSED
S W C : : 1 0 5	Unprotected Ether Withdrawal	CWE-284: Improper Access Control	PASSED
S W C : : 1 0 4	Unchecked Call Return Value	CWE-252: Unchecked Return Value	PASSED
S W C : : 1 0 3	Floating Pragma	CWE-664: Improper Control of a Resource Through its Lifetime	NOT PASSED
S W C : : 1 0 2	Outdated Compiler Version	CWE-937: Using Components with Known Vulnerabilities	PASSED
S W C : : 1 0 1	Integer Overflow and Underflow	CWE-682: Incorrect Calculation	PASSED

<div> <div>S</div> <div>W</div> <div>C</div> <div>.</div> <div>1</div> <div>1</div> <div>0</div> <div>0</div> <div>0</div> <div>1</div> </div>	<div>Function</div> <div>Default</div> <div>Visibility</div>	<div> <div>CWE-710: Improper Adherence</div> <div>to Coding Standards</div> </div>	<div>PASSED</div>
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