SOLIDProof

Bring trust into your projects

Blockchain Security | Smart Contract Audits | KYC

Audit

Security Assessment
07. January, 2022

For

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Version	Date	Description
1.0	07. January 2022	• Layout project • Automated- /Manual-Security Testing • Summary

Network
Binance Smart Chain (BEP20)

Website
https://web3inu.org/

Telegram
https://t.me/web3_inu

Twitter
https://twitter.com/web3_inu

Github
https://github.com/web3inu

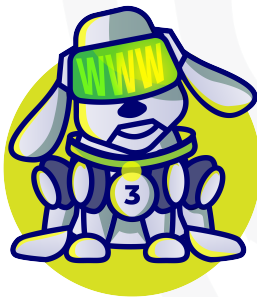**Medium**
https://medium.com/@web3_inu

Description

Web3 is an umbrella term for an online ecosystem that cuts out the big middlemen on the Internet. Platforms on Web3 are not owned by central gatekeepers and you wouldn't navigate the Internet through search engines such as Google. It uses blockchain, the same system used by cryptocurrencies and non-fungible tokens (NFTs).

Project Engagement

During the 5th of January 2022, **Web3Inu Team** engaged Solidproof.io to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. They provided Solidproof.io with access to their code repository and whitepaper.

Logo

Contract Link
v1.0

- https://bscscan.com/address/
0xd0c4bc1b89bbd105eecb7eba3f13e7648c0de38f#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 aspossible.
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 analysing 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:

```
Context
IERC20
SafeMath
Address
Ownable
```

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.
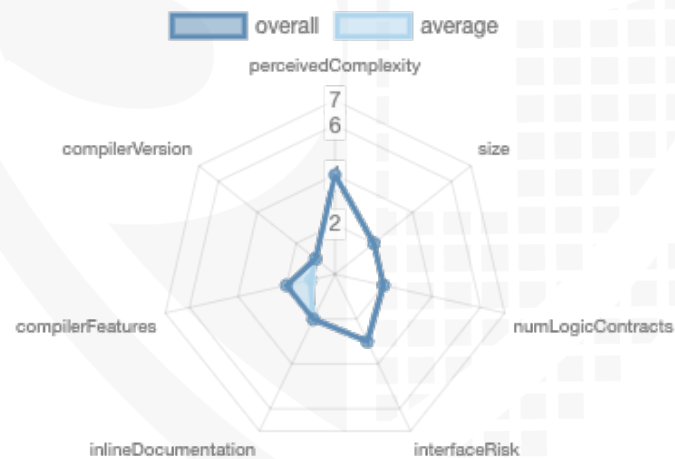
v1.0

File Name	SHA-1 Hash
contracts/web3inu.sol	b0a76eb478b4054ca5dfba6592129d3a4765c44a

Metrics

Source Lines
v1.0
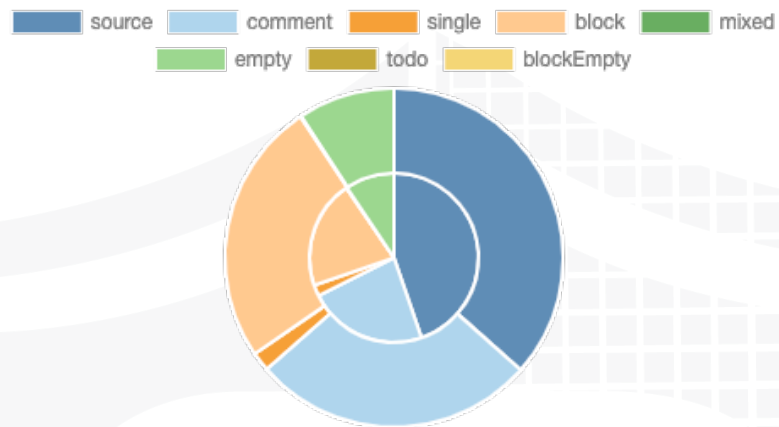
Risk Level
v1.0

Capabilities

Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	2	2	1	1

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	30	0

Version	External	Internal	Private	Pure	View
1.0	10	47	13	10	20

State Variables

Version	Total	Public
1.0	17	4

Capabilities

| Version	Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	`^0.6.12`			yes (2 asm blocks)	

Scope of Work

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

Inheritance Graph
v1.0
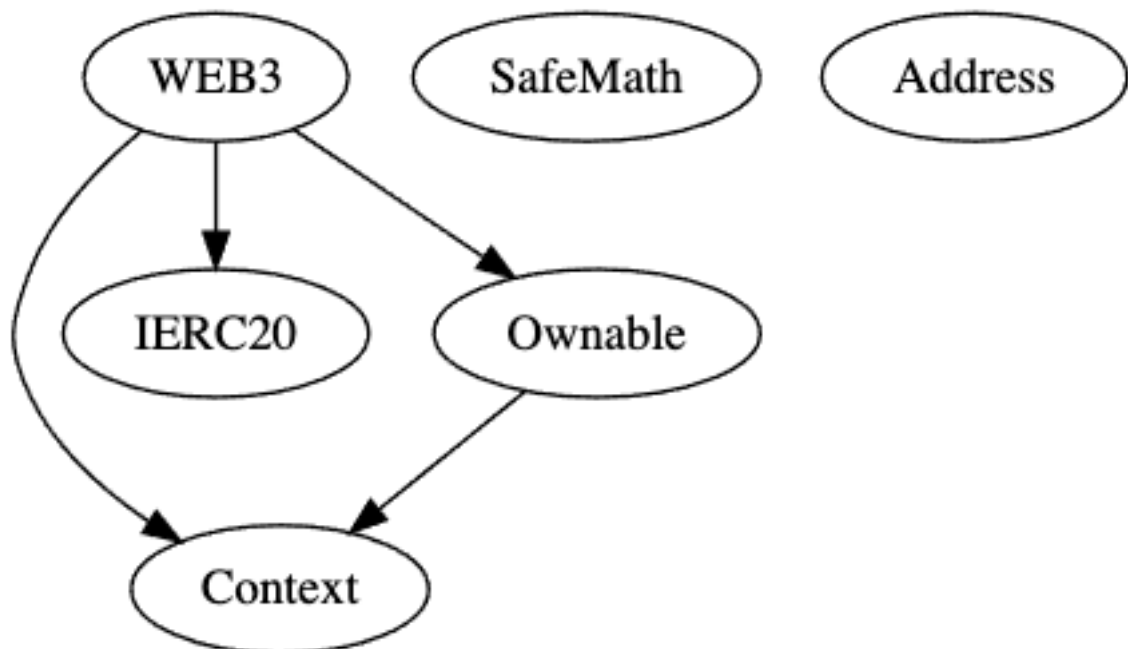
Verify Claims
Correct implementation of Token standard

Tested	Verified
✓	✓

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 contract

1. approve

2. decreaseAllowance

3. excludeAccount

4. includeAccount

5. increaseAllowance

6. reflect

7. renounceOwnership

8. setMaxTxPercent

9. setUniswapPair

10. transfer

11. transferFrom

12. transferOwnership

Deployer cannot mint any new tokens

Name	Exist	Tested	Verified
Deployer cannot mint	–	–	–

Max / Total Supply: 100.000.000.000.000

Deployer cannot burn or lock user funds

Name	Exist	Tested	Verified
Deployer cannot lock	✓	✓	✗
Deployer cannot burn	–	–	–

Comments:

v1.0

- Deployer can lock user funds
  - By setting _maxTxAmount to 0

Deployer cannot pause the contract

Name	Exist	Tested	Verified
Deployer cannot pause	✓	–	–

Overall checkup (Smart Contract Security)

Tested	Verified
✓	✓

Legend

| Attribute	Symbol
Verfified / Checked	✓
Partly Verified	🚩
Unverified / Not checked	✗
Not available	–

Modifiers

- onlyOwner
    - setMaxTxPercent
    - excludeAccount
    - includeAccount
    - setUniswapPair

Comments

- Deployer can set following state variables without any limitations
    - setMaxTxPercent
- Deployer can enable/disable following state variables
    - _isExcluded
    - _excluded

CallGraph
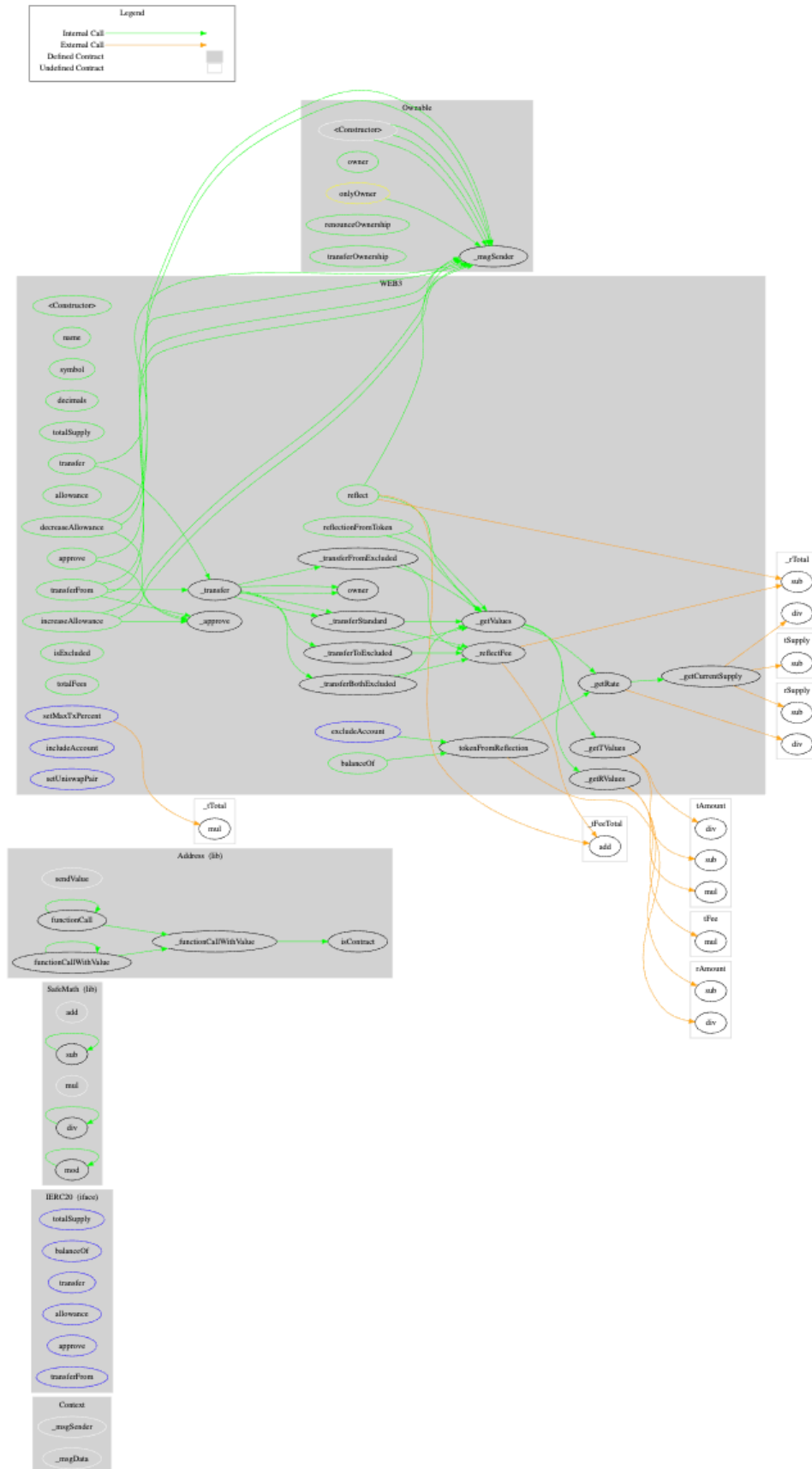
Source Units in Scope
v1.0

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
📝📚🔍🍯	contracts/web3inu.sol	5	1	685	612	356	255	278	🖥️☀️
📝📚🔍🍯	**Totals**	**5**	**1**	**685**	**612**	**356**	**255**	**278**	🖥️☀️

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 found -

High issues
- no high issues found -

Medium issues
- no medium issues found -

Low issues

Issue	File	Type	Line	Description
#1	Main	Contract doesn't import npm packages from source (like OpenZeppelin etc.)	-	We recommend to import all packages from npm directly without flatten the contract. Functions could be modified or can be susceptible to vulnerabilities
#2	Main	A floating pragma is set	7	The current pragma Solidity directive is „"^0.6.12"".
#3	Main	Missing Zero Address Validation (missing-zero-check)	682	Check that the address is not zero
#4	Main	Local variables shadowing	566, 478	Rename the local variables that shadow another component

Informational issues

Issue	File	Type	Line	Description
#1	Main	State variables that could be declared constant (constable-states)	440, 438, 439, 443	Add the `constant` attributes to state variables that never change

Commented Code exist

There are some instances of code being commented out in the following files that should be removed:

Line	Comment
195	// assert(a == b * c + a % b); // There is no case in which this doesn't hold

Recommendation

Remove the commented code, or address them properly.

Audit Comments

07. January 2022:

· Read whole report for more information

SWC Attacks

ID	Title	Relationships	Status
SWC-136	Unencrypted Private Data On-Chain	CWE-767: Access to Critical Private Variable via Public Method	**PASSED**
SWC-135	Code With No Effects	CWE-1164: Irrelevant Code	**PASSED**
SWC-134	Message call with hardcoded gas amount	CWE-655: Improper Initialization	**PASSED**
SWC-133	Hash Collisions With Multiple Variable Length Arguments	CWE-294: Authentication Bypass by Capture-replay	**PASSED**
SWC-132	Unexpected Ether balance	CWE-667: Improper Locking	**PASSED**
SWC-131	Presence of unused variables	CWE-1164: Irrelevant Code	**PASSED**
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-124](#)	Write to Arbitrary Storage Location	[CWE-123: Write-what-where Condition](#)	**PASSED**
[SWC-123](#)	Requirement Violation	[CWE-573: Improper Following of Specification by Caller](#)	**PASSED**
[SWC-122](#)	Lack of Proper Signature Verification	[CWE-345: Insufficient Verification of Data Authenticity](#)	**PASSED**
[SWC-121](#)	Missing Protection against Signature Replay Attacks	[CWE-347: Improper Verification of Cryptographic Signature](#)	**PASSED**
[SWC-120](#)	Weak Sources of Randomness from Chain Attributes	[CWE-330: Use of Insufficiently Random Values](#)	**PASSED**
[SWC-119](#)	Shadowing State Variables	[CWE-710: Improper Adherence to Coding Standards](#)	**NOT PASSED**
[SWC-118](#)	Incorrect Constructor Name	[CWE-665: Improper Initialization](#)	**PASSED**
[SWC-117](#)	Signature Malleability	[CWE-347: Improper Verification of Cryptographic Signature](#)	**PASSED**

[SWC-116](#)	Timestamp Dependence	[CWE-829: Inclusion of Functionality from Untrusted Control Sphere](#)	**PASSED**
[SWC-115](#)	Authorization through tx.origin	[CWE-477: Use of Obsolete Function](#)	**PASSED**
[SWC-114](#)	Transaction Order Dependence	[CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')](#)	**PASSED**
[SWC-113](#)	DoS with Failed Call	[CWE-703: Improper Check or Handling of Exceptional Conditions](#)	**PASSED**
[SWC-112](#)	Delegatecall to Untrusted Callee	[CWE-829: Inclusion of Functionality from Untrusted Control Sphere](#)	**PASSED**
[SWC-111](#)	Use of Deprecated Solidity Functions	[CWE-477: Use of Obsolete Function](#)	**PASSED**
[SWC-110](#)	Assert Violation	[CWE-670: Always-Incorrect Control Flow Implementation](#)	**PASSED**
[SWC-109](#)	Uninitialized Storage Pointer	[CWE-824: Access of Uninitialized Pointer](#)	**PASSED**
[SWC-108](#)	State Variable Default Visibility	[CWE-710: Improper Adherence to Coding Standards](#)	**PASSED**
[SWC-107](#)	Reentrancy	[CWE-841: Improper Enforcement of Behavioral Workflow](#)	**PASSED**
[SWC-106](#)	Unprotected SELFDESTRUCT Instruction	[CWE-284: Improper Access Control](#)	**PASSED**

SWC-105	Unprotected Ether Withdrawal	CWE-284: Improper Access Control	PASSED
SWC-104	Unchecked Call Return Value	CWE-252: Unchecked Return Value	PASSED
SWC-103	Floating Pragma	CWE-664: Improper Control of a Resource Through its Lifetime	NOT PASSED
SWC-102	Outdated Compiler Version	CWE-937: Using Components with Known Vulnerabilities	PASSED
SWC-101	Integer Overflow and Underflow	CWE-682: Incorrect Calculation	PASSED
SWC-100	Function Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED

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