



SMART CONTRACT AUDIT REPORT

For

Anti Ape Association (AAA)



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Prepared on: 21/2/2022

Prepared for: Anti Ape Team

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- **Disclaimer**

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against the team on the basis of what it says or doesn't say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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• Scope of the audit

The scope of this audit was to analyze and document the **Anti Ape Association (AAA)** smart contract codebase for quality, security, and correctness.

• Introduction

During the period of **February 19, 2022, to February 21, 2022** - SaferICO

Team performed a security audit for **Anti-Ape Association (AAA)** smart contracts.

The project has 13 files. It contains approx 1465 lines of Solidity code. Most of the functions and state variables are well commented on using the Nat spec documentation, but that does not create any vulnerability.

Source Code:

<https://rinkeby.etherscan.io/address/0x6682755Ad70B6C1385b5fF5CdC19E460ac66a0DB#code>

Check Vulnerabilities

In order to check for the security of the contract, we tested several attacks in order to make sure that the contract is secure and follows best practices automatically.

1. Unit tests passing.
2. Compiler warnings;
3. Race Conditions. Reentrancy. Cross-function Race Conditions. Pitfalls in Race Condition solutions;
4. Possible delays in data delivery;
5. Transaction-Ordering Dependence (front running);

6. Timestamp Dependence;

7. Integer Overflow and Underflow;

8. DoS with (unexpected) Revert;

9. DoS with Block Gas Limit

10. Call Depth Attack. Not relevant in modern ethereum network

11. Methods execution permissions;

12. Oracles calls;

13. Economy model. It's important to forecast scenarios when a user is provided with additional economic motivation or faced with limitations. If application logic is based on incorrect economy model, the application will not function correctly and participants will incur financial losses. This type of issue is most often found in bonus rewards systems.

14. The impact of the exchange rate on the logic;

15. Private user data leaks.

• Issue Categories

Every issue in this report has been assigned to a severity level. There are four levels of severity, and each of them has been explained below.

Risk-level	Description
High	A high severity issue or vulnerability means that your smart contract can be exploited. Issues on this level are critical to the smart contract's performance or functionality, and we recommend these issues be fixed before moving to a live environment.
Medium	The issues marked as medium severity usually arise because of errors and deficiencies in the smart contract code. Issues on this level could potentially bring problems, and they should still be fixed.
Low	Low-level severity issues can cause minor impact and or are just warnings that can remain unfixed for now. It would be better to fix these issues at some point in the future.
Informational	These are severity issues that indicate an improvement request, a general question, a cosmetic or documentation error, or a request for information. There is low-to-no impact.

• Issues Found – Code Review

High severity issues

There are no High severity vulnerabilities found

Medium severity issues

There are no Medium severity vulnerabilities found

Low severity issues

#Pragm version not fixed

Description

It is a good practice to lock the solidity version for a live deployment (use 0.8.11 instead of $\geq 0.7.0 < 0.9.0$). contracts should be deployed with the same compiler version and flags that they have been tested the most with. Locking the pragma helps ensure that contracts do not accidentally get deployed using, for example, the latest compiler which may have higher risks of undiscovered bugs. Contracts may also be deployed by others and the pragma indicates the compiler version intended by the original authors.

Remediation

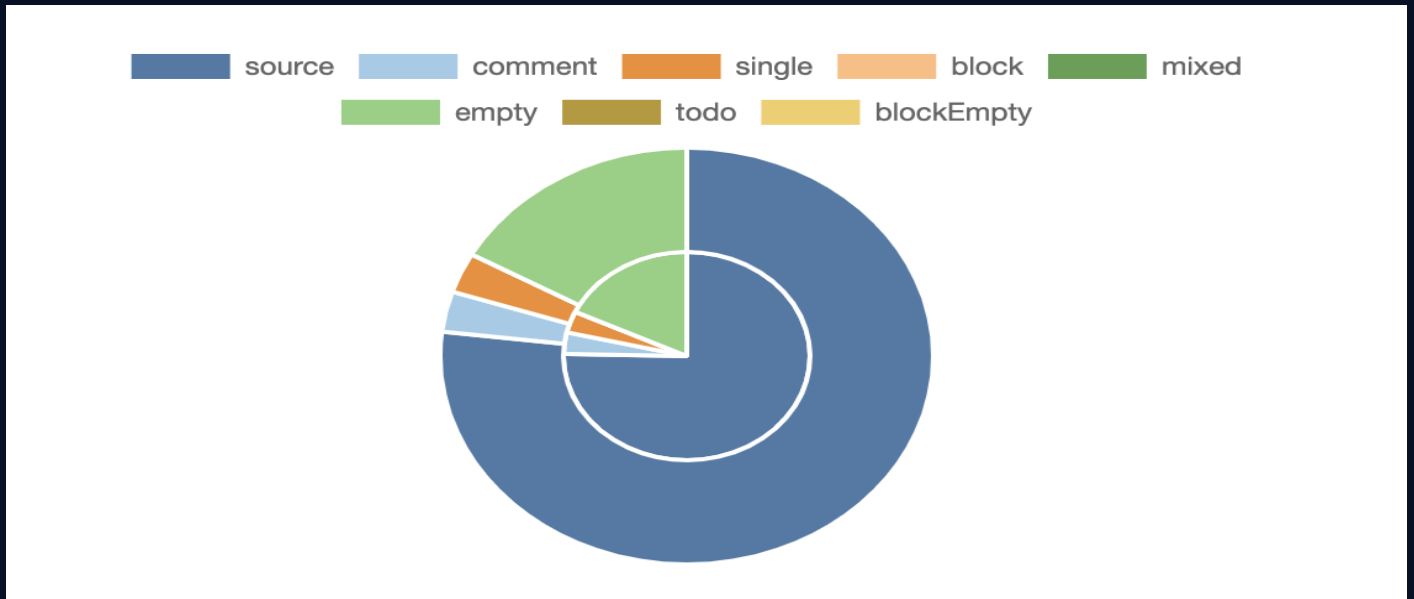
Remove the ^ sign to lock the pragma version

Status: **Closed**. Fixed in version 2

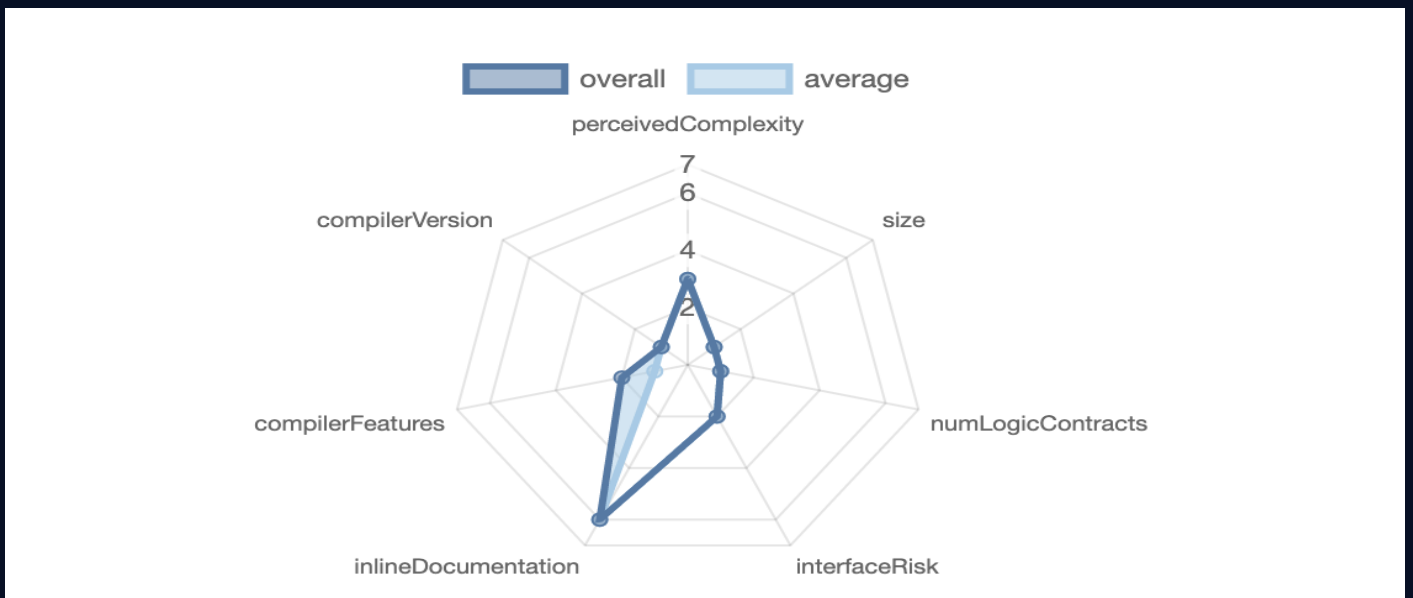
Informational issues

There are no Informational severity vulnerabilities found

- Source Lines



- Risk Level



- **Testing proves**

5a1e655d866a1250e1e7b0ac33911c115f0729faaa50ba2584bd4338f3d0d00e

File: AntiApe... | Language: solidity | Size: 4388 bytes | Date: 2022-02-21T09:59:41.449Z

Critical	High	Medium	Low	Note
0	0	0	0	0

- **Solidity Static Analysis**

SOLIDITY STATIC ANALYSIS

▼ ERC

☒ Select ERC

- ☒ ERC20:
'decimals' should be 'uint8'

▼ Miscellaneous

☒ Select Miscellaneous

- ☒ Constant/View/Pure functions:
Potentially constant/view/pure functions
- ☒ Similar variable names:
Variable names are too similar
- ☒ No return:
Function with 'returns' not returning
- ☒ Guard conditions:
Ensure appropriate use of require/assert
- ☒ Result not used:
The result of an operation not used
- ☒ String length:
Bytes length != String length
- ☒ Delete from dynamic array:
'delete' leaves a gap in array
- ☒ Data truncated:
Division on int/uint values truncates the result

SOLIDITY STATIC ANALYSIS

☒ Select all

☒ Autorun

Run

▼ Security

☒ Select Security

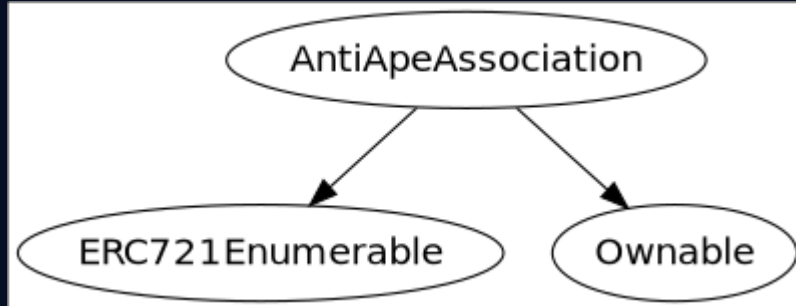
- ☒ Transaction origin:
'tx.origin' used
- ☒ Check-effects-interaction:
Potential reentrancy bugs
- ☒ Inline assembly:
Inline assembly used
- ☒ Block timestamp:
Can be influenced by miners
- ☒ Low level calls:
Should only be used by experienced devs
- ☒ Block hash:
Can be influenced by miners
- ☒ Selfdestruct:
Contracts using destructed contract can be broken

▼ Gas & Economy

☒ Select Gas & Economy

- ☒ Gas costs:
Too high gas requirement of functions
- ☒ This on local calls:
Invocation of local functions via 'this'
- ☒ Delete dynamic array:
Use require/assert to ensure complete deletion
- ☒ For loop over dynamic array:
Iterations depend on dynamic array's size
- ☒ Ether transfer in loop:
Transferring Ether in a for/while/do-while loop

- **Inheritance**



- **Solidity Unit Testing Code & Results**

```
/ SPDX-License-Identifier: GPL-3.0

pragma solidity >=0.4.22 <0.9.0;

// This import is automatically injected by Remix
import "remix_tests.sol";

// This import is required to use custom transaction context
// Although it may fail compilation in 'Solidity Compiler' plugin
// But it will work fine in 'Solidity Unit Testing' plugin
import "remix_accounts.sol";
import "../AntiApeAssociation.sol";

// File name has to end with '_test.sol', this file can contain more than one testSuite contracts
contract testSuite {

    /// 'beforeAll' runs before all other tests
    /// More special functions are: 'beforeEach', 'beforeAll', 'afterEach' & 'afterAll'
    function beforeAll() public {
        // <instantiate contract>
        Assert.equal(uint(1), uint(1), "1 should be equal to 1");
    }
}
```

SOLIDITY UNIT TESTING

Test your smart contract in Solidity.

Select directory to load and generate test files.

Test directory:

tests

Create

Generate

How to use...

▶ Run

■ Stop

☒ Select all

☒ tests/AntiApeAssociation_test.sol

Progress: 1 finished (of 1)

PASS testSuite

(tests/AntiApeAssociation_test.sol)

✓ Before all



✓ Check success



✓ Check success2



✓ Check failure



✓ Check sender and value



Result for
tests/AntiApeAssociation_test.sol

Passed: 5

Failed: 0

Time Taken: 0.43s

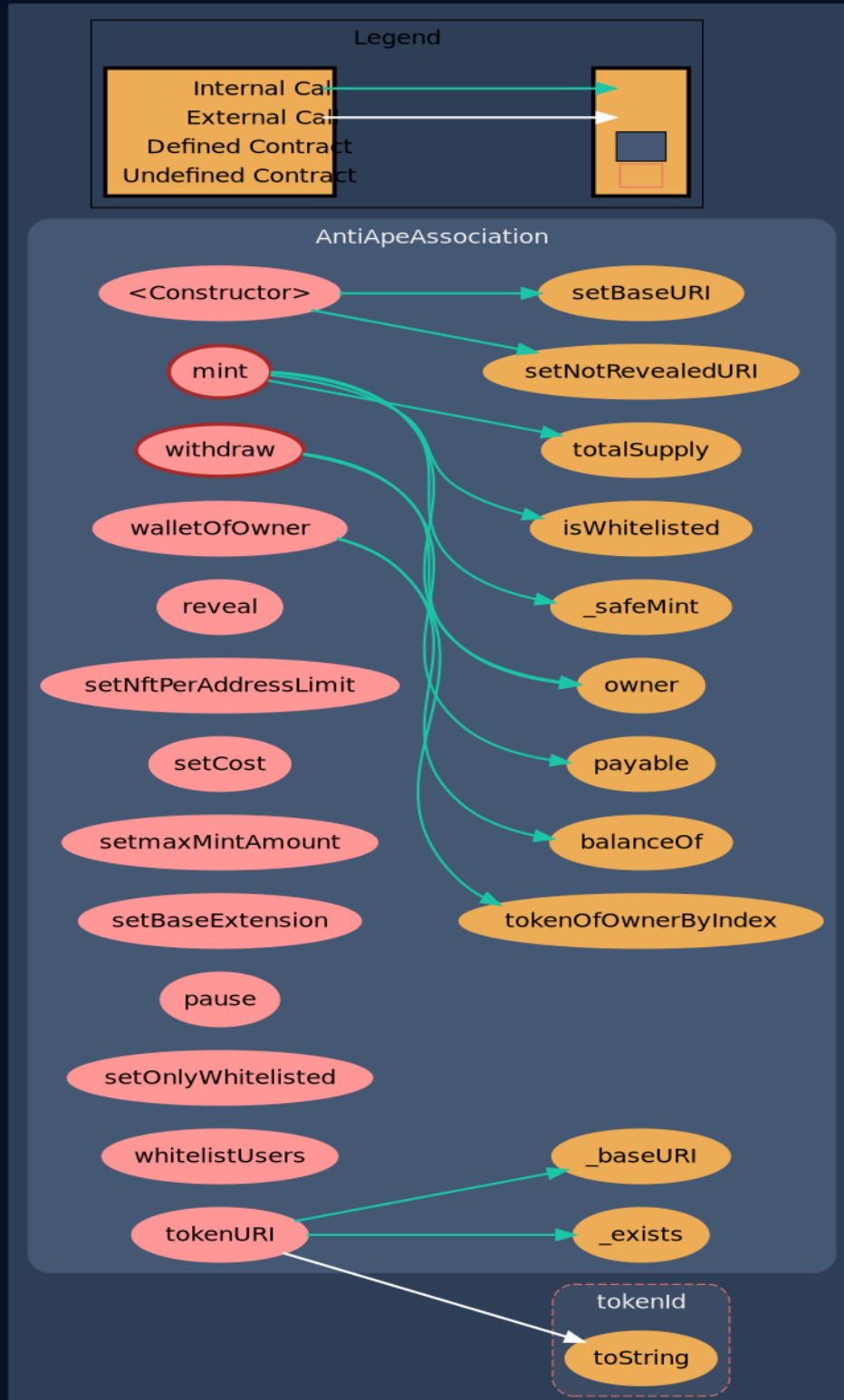
```
function checkSuccess() public {
    // Use 'Assert' methods: https://remix-
    ide.readthedocs.io/en/latest/assert_library.html
    Assert.ok(2 == 2, 'should be true');
    Assert.greaterThan(uint(2), uint(1), "2 should be greater than to 1");
    Assert.lessThan(uint(2), uint(3), "2 should be lesser than to 3");
}

function checkSuccess2() public pure returns (bool) {
    // Use the return value (true or false) to test the contract
    return true;
}

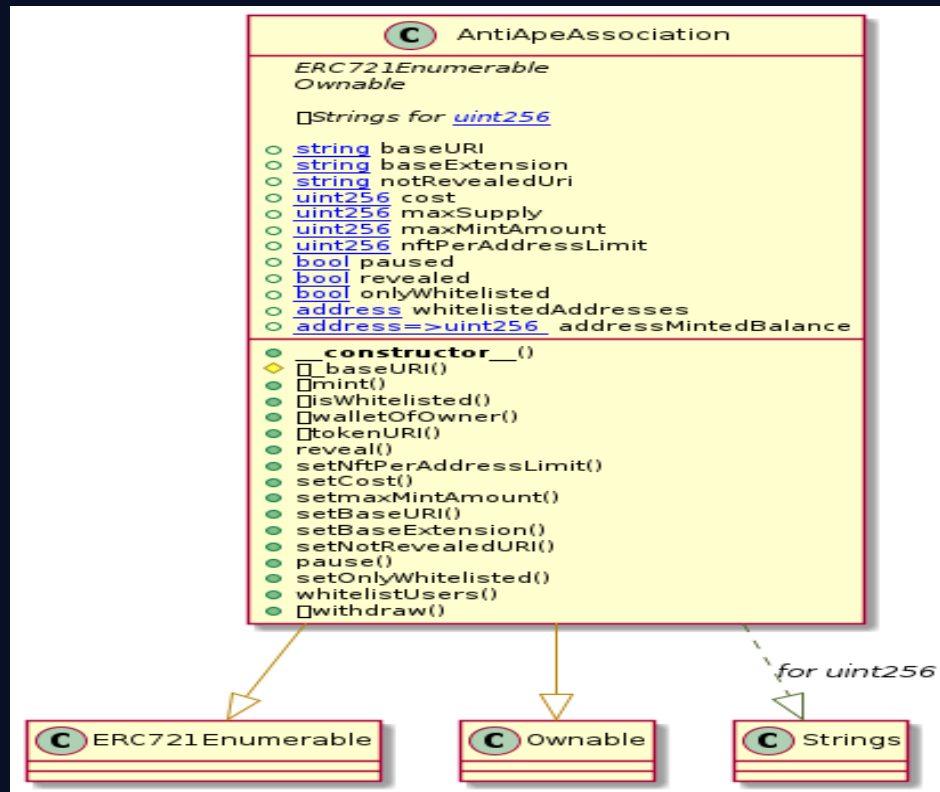
function checkFailure() public {
    Assert.notEqual(uint(1), uint(2), "1 should not be equal to 1");
}

/// Custom Transaction Context: https://remix-
ide.readthedocs.io/en/latest/unittesting.html#customization
/// #sender: account-1
/// #value: 100
function checkSenderAndValue() public payable {
    // account index varies 0-9, value is in wei
    Assert.equal(msg.sender, TestsAccounts.getAccount(1), "Invalid sender");
    Assert.equal(msg.value, 100, "Invalid value");
}
}
```

- Call Graph













- Unified Modeling Language (UML)




- Capabilities

Capabilities

Solidity Versions observed	 Experimental Features	 Can Receive Funds	 Uses Assembly	 Has Destroyable Contracts
>=0.7.0 <0.9.0		yes		

 Transfers ETH	 Low-Level Calls	 DelegateCall	 Uses Hash Functions	 ECREcover	 New/Create/Create2





 TryCatch	Σ Unchecked

Dependencies / External Imports

Dependency / Import Path	Count
@openzeppelin/contracts/access/Ownable.sol	1
@openzeppelin/contracts/token/ERC721/extensions/ERC721Enumerable.sol	1

• Source Units In Scope

Source Units Analyzed: 1
Source Units in Scope: 1 (100%)

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	AntiApeAssociation.sol	1	————	155	145	113	5	123	
	Totals	1	————	155	145	113	5	123	

Legend: [—]

- **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, ...)

• Function Signature

Sighash | Function Signature

=====

```
743976a0 => _baseURI()
a0712d68 => mint(uint256)
3af32abf => isWhitelisted(address)
438b6300 => walletOfOwner(address)
c87b56dd => tokenURI(uint256)
a475b5dd => reveal()
d0eb26b0 => setNftPerAddressLimit(uint256)
44a0d68a => setCost(uint256)
7f00c7a6 => setmaxMintAmount(uint256)
55f804b3 => setBaseURI(string)
da3ef23f => setBaseExtension(string)
f2c4ce1e => setNotRevealedURI(string)
02329a29 => pause(bool)
3c952764 => setOnlyWhitelisted(bool)
edec5f27 => whitelistUsers(address[])
3ccfd60b => withdraw()
```

• Automatic General Report

Files Description Table

File Name	SHA-1 Hash
/Users/macbook/Desktop/smart contracts/AntiApeAssociation.sol	eaf11dfc909929fabcce1409688d3c25a9fdbf34

Contracts Description Table

Contract	Type	Bases		
↳	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
AntiApeAssociation Implementation ERC721Enumerable, Ownable				
↳	<Constructor>	Public	🔓	ERC721
↳	_baseURI	Internal	🔒	
↳	mint	Public	🔓	NO
↳	isWhitelisted	Public		NO
↳	walletOfOwner	Public		NO
↳	tokenURI	Public		NO
↳	reveal	Public	🔓	onlyOwner
↳	setNftPerAddressLimit	Public	🔓	onlyOwner
↳	setCost	Public	🔓	onlyOwner
↳	setMaxMintAmount	Public	🔓	onlyOwner
↳	setBaseURI	Public	🔓	onlyOwner
↳	setBaseExtension	Public	🔓	onlyOwner
↳	setNotRevealedURI	Public	🔓	onlyOwner
↳	pause	Public	🔓	onlyOwner
↳	setOnlyWhitelisted	Public	🔓	onlyOwner
↳	whitelistUsers	Public	🔓	onlyOwner
↳	withdraw	Public	💵	onlyOwner

Legend

Symbol	Meaning
🔓	Function can modify state
💵	Function is payable

- **Summary of the Audit**

According to automatically test, the customer`s solidity smart contract is **Well-Secured**.

The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

The test found 0 critical, 0 high, 0 medium, 1 low issues, and 0 notes.