



# SMART CONTRACT AUDIT REPORT

For  
Card NFT



Prepared By: SFI Team

Prepared on: 27/11/2022

Prepared for: Card NFT Team

Contract address: Not deployed yet

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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 Card NFT smart contract codebase for quality, security, and correctness.

## • Introduction

During the period of **November 25, 2022, to November 27, 2022**- SaferICO

Team performed a security audit for **Card** smart contracts.

The project has 1 file. It contains approx 773 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: it is a private 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

#### #Contract code size exceeds 24576 bytes

##### Description

Contract implementation is too large in size to be deployed on main net. Ethereum with its spurious dragon release limited the size of the contracts deployable on main net to 24576 bytes.

The size of the contract Card.sol goes way above this value.

You can read more here:

<https://github.com/ethereum/EIPs/issues/170>

##### Remediation

Define and use libraries for pure and view functions e.g. We can create a library which contains all the mathematical operations.

Status: **Closed**. The team used to enable optimization at 200 to avoid this issue.

## #Missing zero address validation

### Description

When the owner wants to add an address to receiver the funds and for royalty, he has to check for the zero address, he didn't add the burn address as receiver. Otherwise, all funds and royalty will be lost forever .

```
function setWithdrawalRecipient(address _recipient)
    external onlyOwner {withdrawalAddress = _recipient;
    emit SetWithdrawalRecipient(_recipient);}
function setRoyaltyInfo(address _royaltyReceiverAddress, uint96 _royaltyFeesInBips)
    public
    onlyOwner
{ royaltyReceiverAddress = _royaltyReceiverAddress;
  royaltyFeesInBips = _royaltyFeesInBips;
  _setDefaultRoyalty(_royaltyReceiverAddress, _royaltyFeesInBips);

  emit SetRoyaltyInfo(_royaltyReceiverAddress, _royaltyFeesInBips);}
```

### Remediation

Use the require statement to check for zero addresses.

Status: **Closed**. Fixed in version2.

## #Pragam version not fixed

### Description

It is a good practice to lock the solidity version for a live deployment (use 0.8.17 instead of ^0.8.7). 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

### **#Owner privileges (In the period when the owner isn't renounced)**

#### Description

The owner can change the mint price in presale and public sale.

The owner can add any address to the whitelist.

The owner can change the sale statue of the smart contract.

```
function setMintPrices(uint256[] memory _prices)externalonlyOwner
{
    mintPrices = _prices;
    emit SetMintPrices(_prices);
}
function pause() public onlyOwner {
    _pause();
}
function unpause() public onlyOwner {
    _unpause();
}
function mintByOwner
(
    address _to,
    uint256[] calldata _ids,
    uint256[] calldata _tiers,
    string[] calldata _uris
)External onlyOwner isIdAndTierPassed1(_ids.length, _tiers.length)isOwnerIdAndTierPassed(_ids, _tiers)
{
    safeBatchMint(_to, _ids, _tiers, _uris);
}
royaltyReceiverAddress = _royaltyReceiverAddress;
royaltyFeesInBips = _royaltyFeesInBips;
_setDefaultRoyalty(_royaltyReceiverAddress, _royaltyFeesInBips);
emit SetRoyaltyInfo(_royaltyReceiverAddress, _royaltyFeesInBips);}
```

#### Remediation

Make these functions internal in next version or the team should announce the investors before doing anything to give them time if they want to do anything.

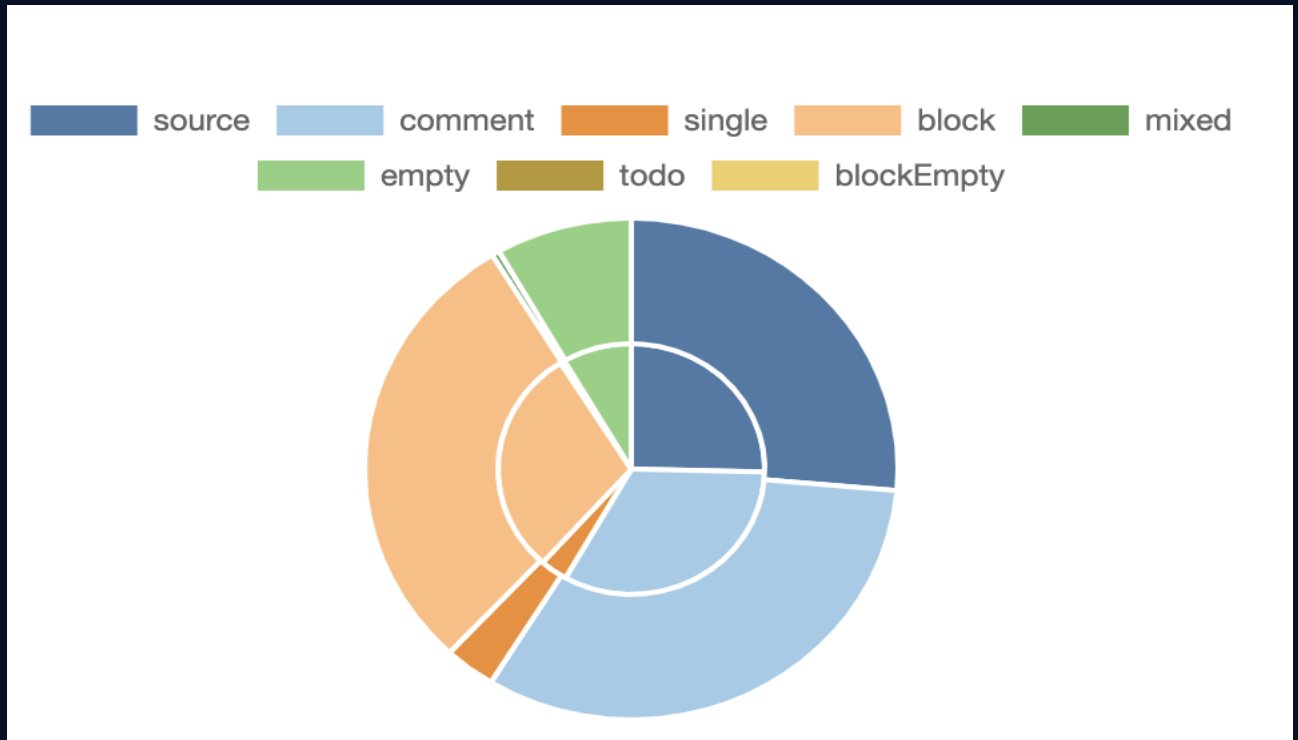
P.S: This issue is common to the majority of NFT smart contracts.

Status: **Acknowledged**.

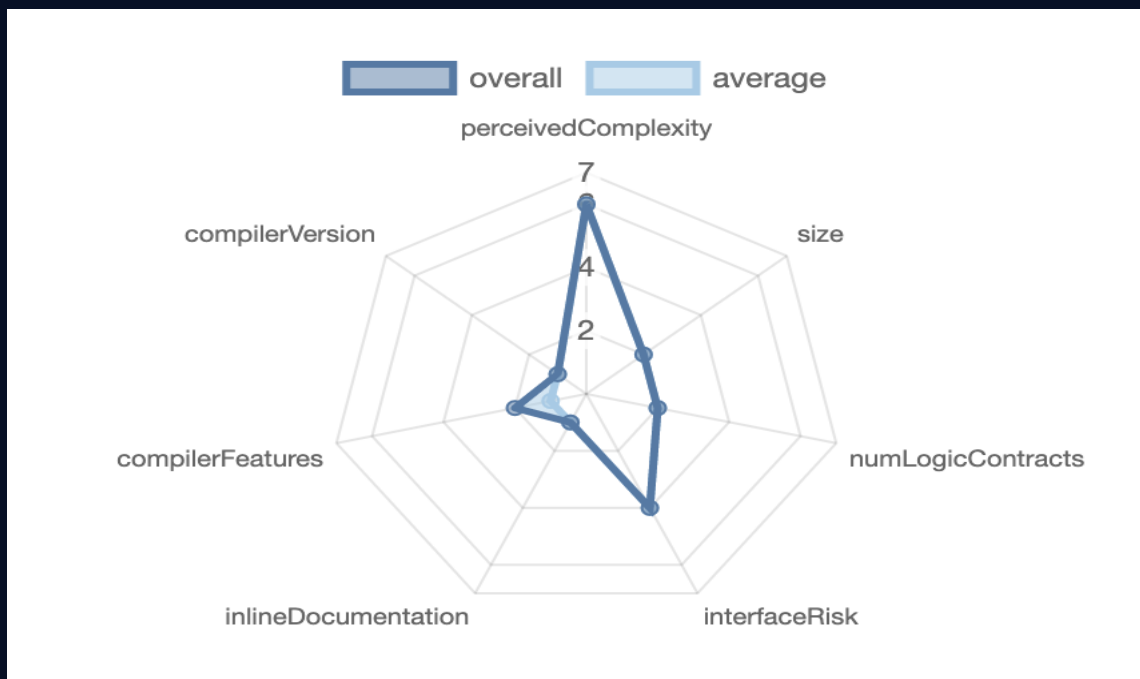
### **Informational issues**

**There are no Informational issues found.**

- Source Lines




- Risk Level



- Testing proves
- Check for security

7f7df450f5953674a7ccd4e09f5acb756d725cbc8231b46155abc891fbb26467  
File: Card.sol | Language: solidity | Size: 24693 bytes | Date: 2022-11-27T08:01:35.338Z

Critical	High	Medium	Low	Note
0	0	0	0	0



- Solidity Static Analysis

### SOLIDITY STATIC ANALYSIS

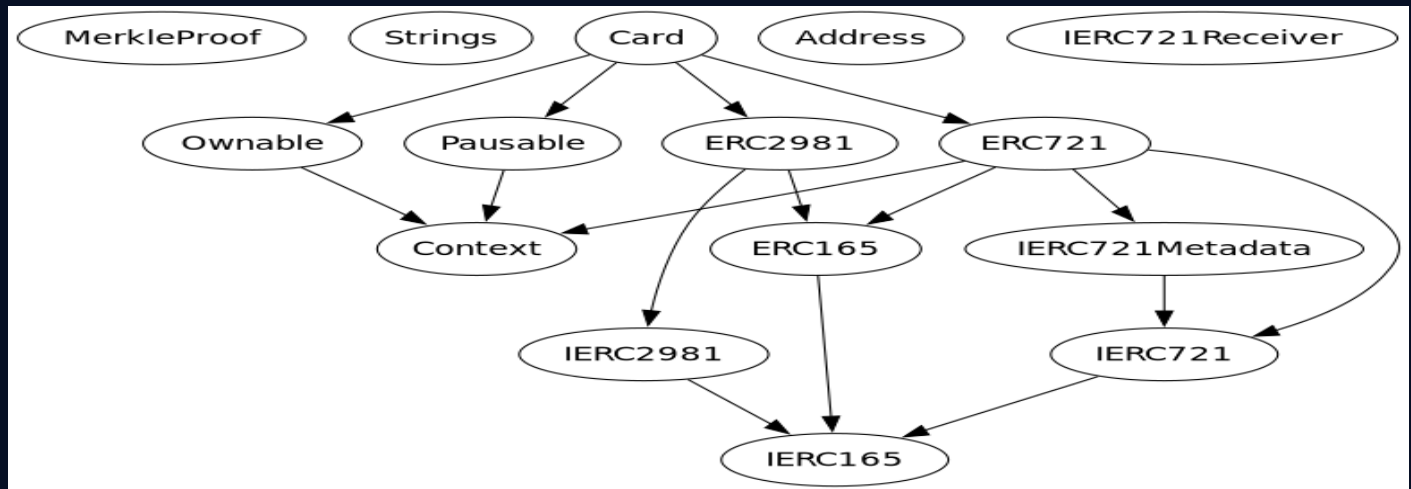
- ERC
  - Select ERC
    - ERC20: 'decimals' should be 'uint8'
- Miscellaneous
  - Select Miscellaneous
    - Constant/View/Pure functions: Potentially constant/view/pure functions
    - Similar variable names: Variable names are too similar
    - No return: Function with 'returns' not returning
    - 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

- 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 destructured 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 graph**



- **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 "../Card.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/Card\_test.sol

Progress: 1 finished (of 1)

**PASS** testSuite (tests/Card\_test.sol)

✓ Before all



✓ Check success



✓ Check success2



✓ Check failure



✓ Check sender and value



Result for tests/Card\_test.sol

Passed: 5

Failed: 0

Time Taken: 0.49s

```
}
```

```
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
```

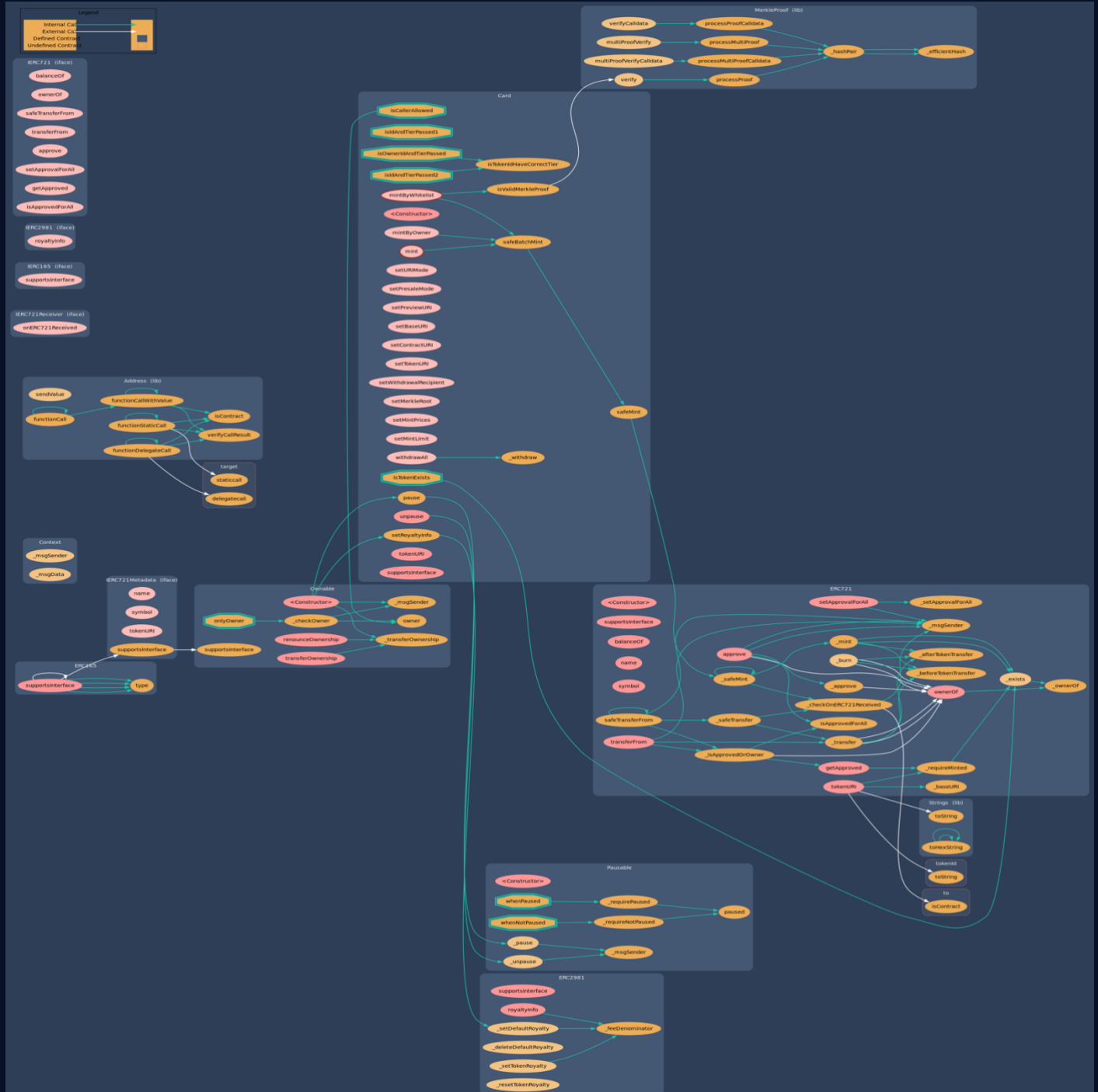
```
    Assert.equal(msg.sender, TestsAccounts.getAccount(1), "Invalid sender");
```

```
    Assert.equal(msg.value, 100, "Invalid value");
```

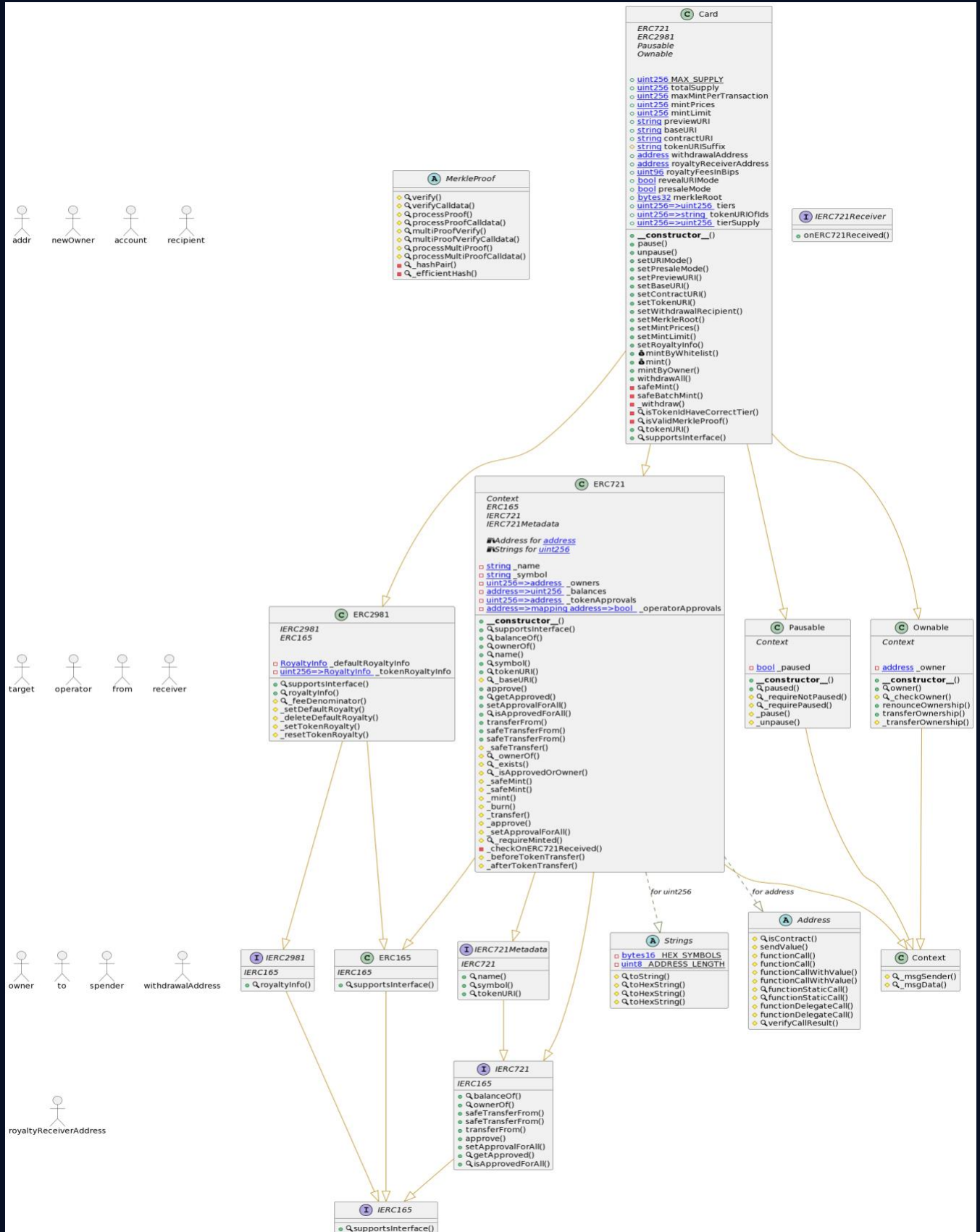
```
}
```

```
}
```

# Call Graph



## • Unified Modeling Language (UML)



## • Capabilities

### Components

 Contracts	 Libraries	 Interfaces	 Abstract
2	3	5	5

### Exposed Functions

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













 Public	 Payable
54	2

External	Internal	Private	Pure	View
29	111	8	17	38

### StateVariables

Total	 Public
30	17

### Capabilities

Solidity Versions observed	 Experimental Features	 Can Receive Funds	 Uses Assembly	 Has Destroyable Contracts	
<div>^0.8.0 ^0.8.1 ^0.8.7</div>		<div>yes</div>	<div>yes (3 asm blocks)</div>		
 Transfers ETH	 Low-Level Calls	 DelegateCall	 Uses Hash Functions	 ECRecover	 New/Create/Create2
		<div>yes</div>	<div>yes</div>		
 TryCatch	 Σ Unchecked				
<div>yes</div>	<div>yes</div>				

## • Source Units In Scope

### 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
	Card.sol	10	5	2420	2019	775	1179	608	
	Totals	10	5	2420	2019	775	1179	608	

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

=====

```
16279055 => isContract(address)
38350541 => _ownerOf(uint256)
86333816 => multiProofVerify(bytes32[],bool[],bytes32,bytes32[])
5a9a49c7 => verify(bytes32[],bytes32,bytes32)
7ffe9d8c => verifyCalldata(bytes32[],bytes32,bytes32)
62702a6b => processProof(bytes32[],bytes32)
53b0f85f => processProofCalldata(bytes32[],bytes32)
862aac96 => multiProofVerifyCalldata(bytes32[],bool[],bytes32,bytes32[])
ea5d3eb6 => processMultiProof(bytes32[],bool[],bytes32[])
32712d22 => processMultiProofCalldata(bytes32[],bool[],bytes32[])
00a4cf28 => _hashPair(bytes32,bytes32)
41ed615b => _efficientHash(bytes32,bytes32)
6900a3ae => toString(uint256)
8fba8d5c => toHexString(uint256)
63e1cbea => toHexString(uint256,uint256)
1bb0c665 => toHexString(address)
119df25f => _msgSender()
8b49d47e => _msgData()
8da5cb5b => owner()
53a72975 => _checkOwner()
715018a6 => renounceOwnership()
f2fde38b => transferOwnership(address)
d29d44ee => _transferOwnership(address)
5c975abb => paused()
abb87a6f => _requireNotPaused()
4a994e05 => _requirePaused()
320b2ad9 => _pause()
fc8234cb => _unpause()
24a084df => sendValue(address,uint256)
a0b5ffb0 => functionCall(address,bytes)
241b5886 => functionCall(address,bytes,string)
2a011594 => functionCallWithValue(address,bytes,uint256)
d525ab8a => functionCallWithValue(address,bytes,uint256,string)
```

```
c21d36f3 => functionStaticCall(address,bytes)
dbc40fb9 => functionStaticCall(address,bytes,string)
ee33b7e2 => functionDelegateCall(address,bytes)
57387df0 => functionDelegateCall(address,bytes,string)
946b5793 => verifyCallResult(bool,bytes,string)
150b7a02 => onERC721Received(address,address,uint256,bytes)
01ffc9a7 => supportsInterface(bytes4)
2a55205a => royaltyInfo(uint256,uint256)
bf8e572e => _feeDenominator()
b1c1ab1b => _setDefaultRoyalty(address,uint96)
36fdc63c => _deleteDefaultRoyalty()
b552a471 => _setTokenRoyalty(uint256,address,uint96)
604ba39e => _resetTokenRoyalty(uint256)
70a08231 => balanceOf(address)
6352211e => ownerOf(uint256)
b88d4fde => safeTransferFrom(address,address,uint256,bytes)
42842e0e => safeTransferFrom(address,address,uint256)
23b872dd => transferFrom(address,address,uint256)
095ea7b3 => approve(address,uint256)
a22cb465 => setApprovalForAll(address,bool)
081812fc => getApproved(uint256)
e985e9c5 => isApprovedForAll(address,address)
06fdde03 => name()
95d89b41 => symbol()
c87b56dd => tokenURI(uint256)
743976a0 => _baseURI()
24b6b8c0 => _safeTransfer(address,address,uint256,bytes)
f8e76cc0 => _exists(uint256)
4cdc9549 => _isApprovedOrOwner(address,uint256)
b3e1c718 => _safeMint(address,uint256)
6a4f832b => _safeMint(address,uint256,bytes)
4e6ec247 => _mint(address,uint256)
9b1f9e74 => _burn(uint256)
30e0789e => _transfer(address,address,uint256)
7b7d7225 => _approve(address,uint256)
8c4e3f32 => _setApprovalForAll(address,address,bool)
a0aea85d => _requireMinted(uint256)
1fd01de1 => _checkOnERC721Received(address,address,uint256,bytes)
```

```
2bd9a459 => _beforeTokenTransfer(address,address,uint256,uint256)
98d28eeb => _afterTokenTransfer(address,address,uint256,uint256)
8456cb59 => pause()
3f4ba83a => unpause()
77046d8f => setURIMode(bool)
b8a25119 => setPresaleMode(bool)
90498f93 => setPreviewURI(string)
55f804b3 => setBaseURI(string)
938e3d7b => setContractURI(string)
162094c4 => setTokenURI(uint256,string)
fc8a584f => setWithdrawalRecipient(address)
7cb64759 => setMerkleRoot(bytes32)
b589e51e => setMintPrices(uint256[])
fdcc584a => setMintLimit(uint256[])
02fa7c47 => setRoyaltyInfo(address,uint96)
853828b6 => withdrawAll()
7eea6d62 => safeMint(address,uint256,uint256,string)
ac6a2b5d => _withdraw(uint256)
fb1126d5 => isTokenIdHaveCorrectTier(uint256,uint256)
9d55b9b9 => isValidMerkleProof(bytes32[],bytes32)
```

## • Automatic General Report

### Files Description Table

File Name	SHA-1 Hash
----- -----	
/Users/macbook/Desktop/smart contracts/Card.sol	1566c828b5867a38c3cf662e9b8cf33041325b53

### Contracts Description Table

Contract	Type	Bases		
:-----: :-----: :-----: :-----: :-----:				
└─	<b>Function Name</b>	<b>Visibility</b>	<b>Mutability</b>	<b>Modifiers</b>
<b>MerkleProof</b>   Library				
└─	verify	Internal	🔒	
└─	verifyCalldata	Internal	🔒	
└─	processProof	Internal	🔒	
└─	processProofCalldata	Internal	🔒	
└─	multiProofVerify	Internal	🔒	
└─	multiProofVerifyCalldata	Internal	🔒	
└─	processMultiProof	Internal	🔒	
└─	processMultiProofCalldata	Internal	🔒	
└─	_hashPair	Private	🔒🔑	
└─	_efficientHash	Private	🔒🔑	
<b>Strings</b>   Library				
└─	toString	Internal	🔒	
└─	toHexString	Internal	🔒	
└─	toHexString	Internal	🔒	
└─	toHexString	Internal	🔒	

```

| **Context** | Implementation | |||
|  L | _msgSender | Internal 🔒 | | |
|  L | _msgData | Internal 🔒 | | |
|||||
| **Ownable** | Implementation | Context |||
|  L | <Constructor> | Public 🔑 | 🔒 | NO🔑 |
|  L | owner | Public 🔑 | | NO🔑 |
|  L | _checkOwner | Internal 🔒 | | |
|  L | renounceOwnership | Public 🔑 | 🔒 | onlyOwner |
|  L | transferOwnership | Public 🔑 | 🔒 | onlyOwner |
|  L | _transferOwnership | Internal 🔒 | 🔒 | |
|||||
| **Pausable** | Implementation | Context |||
|  L | <Constructor> | Public 🔑 | 🔒 | NO🔑 |
|  L | paused | Public 🔑 | | NO🔑 |
|  L | _requireNotPaused | Internal 🔒 | | |
|  L | _requirePaused | Internal 🔒 | | |
|  L | _pause | Internal 🔒 | 🔒 | whenNotPaused |
|  L | _unpause | Internal 🔒 | 🔒 | whenPaused |
|||||
| **Address** | Library | |||
|  L | isContract | Internal 🔒 | | |
|  L | sendValue | Internal 🔒 | 🔒 | |
|  L | functionCall | Internal 🔒 | 🔒 | |
|  L | functionCall | Internal 🔒 | 🔒 | |
|  L | functionCallWithValue | Internal 🔒 | 🔒 | |
|  L | functionCallWithValue | Internal 🔒 | 🔒 | |
|  L | functionStaticCall | Internal 🔒 | | |
|  L | functionStaticCall | Internal 🔒 | | |
|  L | functionDelegateCall | Internal 🔒 | 🔒 | |
|  L | functionDelegateCall | Internal 🔒 | 🔒 | |
|  L | verifyCallResult | Internal 🔒 | | |
|||||
| **IERC721Receiver** | Interface | |||
|  L | onERC721Received | External 🔑 | 🔒 | NO🔑 |
|||||
| **IERC165** | Interface | |||
|  L | supportsInterface | External 🔑 | | NO🔑 |

```

|||||

| **\*\*IERC2981\*\*** | Interface | IERC165 |||

|  $\perp$  | royaltyInfo | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|||||

| **\*\*ERC165\*\*** | Implementation | IERC165 |||

|  $\perp$  | supportsInterface | Public  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|||||

| **\*\*ERC2981\*\*** | Implementation | IERC2981, ERC165 |||

|  $\perp$  | supportsInterface | Public  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | royaltyInfo | Public  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | \_feeDenominator | Internal  $\mathbb{U}$  | ||

|  $\perp$  | \_setDefaultRoyalty | Internal  $\mathbb{U}$  |  $\odot$  ||

|  $\perp$  | \_deleteDefaultRoyalty | Internal  $\mathbb{U}$  |  $\odot$  ||

|  $\perp$  | \_setTokenRoyalty | Internal  $\mathbb{U}$  |  $\odot$  ||

|  $\perp$  | \_resetTokenRoyalty | Internal  $\mathbb{U}$  |  $\odot$  ||

|||||

| **\*\*IERC721\*\*** | Interface | IERC165 |||

|  $\perp$  | balanceOf | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | ownerOf | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | safeTransferFrom | External  $\mathbb{U}$  |  $\odot$  |NO $\mathbb{U}$ |

|  $\perp$  | safeTransferFrom | External  $\mathbb{U}$  |  $\odot$  |NO $\mathbb{U}$ |

|  $\perp$  | transferFrom | External  $\mathbb{U}$  |  $\odot$  |NO $\mathbb{U}$ |

|  $\perp$  | approve | External  $\mathbb{U}$  |  $\odot$  |NO $\mathbb{U}$ |

|  $\perp$  | setApprovalForAll | External  $\mathbb{U}$  |  $\odot$  |NO $\mathbb{U}$ |

|  $\perp$  | getApproved | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | isApprovedForAll | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|||||

| **\*\*IERC721Metadata\*\*** | Interface | IERC721 |||

|  $\perp$  | name | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | symbol | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | tokenURI | External  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|||||

| **\*\*ERC721\*\*** | Implementation | Context, ERC165, IERC721, IERC721Metadata |||

|  $\perp$  | <Constructor> | Public  $\mathbb{U}$  |  $\odot$  |NO $\mathbb{U}$ |

|  $\perp$  | supportsInterface | Public  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | balanceOf | Public  $\mathbb{U}$  | |NO $\mathbb{U}$ |
















|  $\perp$  | ownerOf | Public  $\mathbb{U}$  | |NO $\mathbb{U}$ |

|  $\perp$  | name | Public  $\mathbb{U}$  | |NO $\mathbb{U}$ |

```

| ^ | symbol | Public | | | NO |
| ^ | tokenURI | Public | | | NO |
| ^ | _baseURI | Internal | | |
| ^ | approve | Public | | | NO |
| ^ | getApproved | Public | | | NO |
| ^ | setApprovalForAll | Public | | | NO |
| ^ | isApprovedForAll | Public | | | NO |
| ^ | transferFrom | Public | | | NO |
| ^ | safeTransferFrom | Public | | | NO |
| ^ | safeTransferFrom | Public | | | NO |
| ^ | _safeTransfer | Internal | | |
| ^ | _ownerOf | Internal | | |
| ^ | _exists | Internal | | |
| ^ | _isApprovedOrOwner | Internal | | |
| ^ | _safeMint | Internal | | |
| ^ | _safeMint | Internal | | |
| ^ | _mint | Internal | | |
| ^ | _burn | Internal | | |
| ^ | _transfer | Internal | | |
| ^ | _approve | Internal | | |
| ^ | _setApprovalForAll | Internal | | |
| ^ | _requireMinted | Internal | | |
| ^ | _checkOnERC721Received | Private | | |
| ^ | _beforeTokenTransfer | Internal | | |
| ^ | _afterTokenTransfer | Internal | | |
|||||
| **Card** | Implementation | ERC721, ERC2981, Pausable, Ownable |||
| ^ | <Constructor> | Public | | | ERC721 |
| ^ | pause | Public | | | onlyOwner |
| ^ | unpause | Public | | | onlyOwner |
| ^ | setURIMode | External | | | onlyOwner |
| ^ | setPresaleMode | External | | | onlyOwner |
| ^ | setPreviewURI | External | | | onlyOwner |
| ^ | setBaseURI | External | | | onlyOwner |
| ^ | setContractURI | External | | | onlyOwner |
| ^ | setTokenURI | External | | | onlyOwner isTokenExists |
| ^ | setWithdrawalRecipient | External | | | onlyOwner |
| ^ | setMerkleRoot | External | | | onlyOwner |


```


<sup>L</sup>	setMintPrices	External			onlyOwner	
<sup>L</sup>	setMintLimit	External			onlyOwner	
<sup>L</sup>	setRoyaltyInfo	Public			onlyOwner	
<sup>L</sup>	mintByWhitelist	External			isCallerAllowed isIdAndTierPassed1 isIdAndTierPassed2	
<sup>L</sup>	mint	External			whenNotPaused isCallerAllowed isIdAndTierPassed1 isIdAndTierPassed2	
<sup>L</sup>	mintByOwner	External			onlyOwner isIdAndTierPassed1 isOwnerIdAndTierPassed	
<sup>L</sup>	withdrawAll	External			NO	
<sup>L</sup>	safeMint	Private				
<sup>L</sup>	safeBatchMint	Private				
<sup>L</sup>	\_withdraw	Private				
<sup>L</sup>	isTokenIdHaveCorrectTier	Private				
<sup>L</sup>	isValidMerkleProof	Private				
<sup>L</sup>	tokenURI	Public			isTokenExists	
<sup>L</sup>	supportsInterface	Public			NO	

#### Legend

| Symbol | Meaning |

|:-----:|:-----:|

|  | Function can modify state |

|  | Function is payable |



- **Summary of the Audit**

According to all test, the customer`s solidity smart contract is **Well Secure**.

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, 4 low issues, and 0 notes.