Solo Audit Report

Project Name: Birds of Space NFT Marketplace

Introduction

The Birds of Space NFT Marketplace project aims to establish a decentralized platform on the Ethereum blockchain for the trading of non-fungible tokens (NFTs). This marketplace, known as "Birds of Space NFT Marketplace," seeks to create a vibrant ecosystem where users can securely buy, sell, and trade digital assets representing unique collectibles, artworks, and virtual goods.

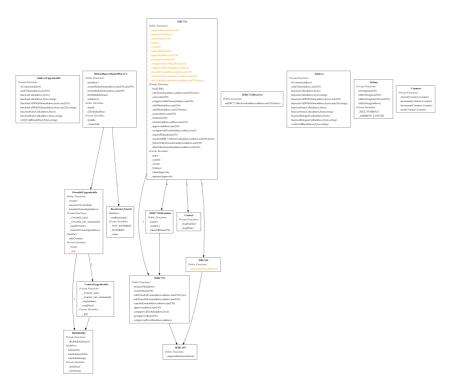
Audit Overview

The objective of this audit report is to evaluate the smart contract code and the comprehensive security measures integrated into the Birds of Space NFT Marketplace project. The assessment involves scrutinizing the solidity codebase for potential vulnerabilities and verifying adherence to the industry's best practices in smart contract development. Additionally, the audit will assess the platform's user interface for usability, accessibility, and responsiveness, ensuring a seamless and intuitive experience for users interacting with the marketplace.

Conclusion

The audit report aims to provide insights into the security posture of the Birds of Space NFT Marketplace project and identify areas for improvement. By conducting this audit, we aim to enhance the overall robustness and reliability of the smart contract codebase and user interface, thereby promoting trust and confidence among stakeholders participating in the NFT marketplace ecosystem.

Summary of Code Compilation and Quality Analysis



- flow.png
- Compiled with solc
- Total number of contracts in source files: 16
- Source lines of code (SLOC) in source files: 688

- Number of assembly lines: 0
- Number of optimization issues: 0
- Number of informational issues: 69
- Number of low issues: 0
- Number of medium issues: 0
- Number of high issues: 1
- ERCs: ERC165, ERC721

| Name | # functions | ERCS | ERC20 info | Complex code | Features | |
|---------------------------|-------------|---------------|------------|--------------|--------------------|--|
| AddressUpgradeable | 9 | | | No | Send ETH | |
| | | | | | Assembly | |
| IERC721Receiver | 1 | | | No | | |
| Address | n | | | No | Send ETH | |
| | | | | | Delegatecall | |
| | | | | | Assembly | |
| Strings | 5 | | | No | | |
| ERC721 | 45 | ERC165,ERC721 | | No | Assembly | |
| Counters | 4 | | | No | | |
| BirdsofSpaceMarketPlaceV1 | 19 | | | No | Receive ETH | |
| | | | | | Send ETH | |
| | | | | | Tokens interaction | |
| | | | | | Upgradeable | |

Contract AddressUpgradeable

| Function | Modifiers |
|-----------------------|-----------|
| isContract | [] |
| sendValue | [] |
| functionCall | [] |
| functionCall | [] |
| functionCallWithValue | [] |
| functionCallWithValue | [] |
| functionStaticCall | [] |
| functionStaticCall | [] |
| verifyCallResult | [] |

Contract IERC721Receiver

| Function | Modifiers |
|------------------|-----------|
| onERC721Received | [] |

Contract Address

| Function | Modifiers |
|-----------------------|-----------|
| isContract | [] |
| sendValue | [] |
| functionCall | [] |
| functionCall | [] |
| functionCallWithValue | [] |
| functionCallWithValue | [] |
| functionStaticCall | [] |

| Function | Modifiers |
|----------------------|-----------|
| functionStaticCall | [] |
| functionDelegateCall | [] |
| functionDelegateCall | [] |
| verifyCallResult | п |

Contract Strings

| Function | Modifiers |
|-------------------------------------|-----------|
| toString | [] |
| toHexString | [] |
| toHexString | [] |
| toHexString | [] |
| slitherConstructorConstantVariables | [] |

Contract ERC721

| Function | Modifiers |
|------------------------|-----------|
| name | [] |
| symbol | [] |
| tokenURI | [] |
| balanceOf | [] |
| ownerOf | [] |
| safeTransferFrom | [] |
| safeTransferFrom | [] |
| transferFrom | [] |
| approve | [] |
| setApprovalForAll | [] |
| getApproved | [] |
| isApprovedForAll | [] |
| supportsinterface | [] |
| supportsinterface | [] |
| _msgSender | [] |
| _msgData | [] |
| constructor | [] |
| supportsinterface | [] |
| balanceOf | [] |
| ownerOf | [] |
| name | [] |
| symbol | [] |
| tokenURI | 0 |
| _baseURI | 0 |
| approve | 0 |
| getApproved | 0 |
| setApprovalForAll | [] |
| isApprovedForAll | [] |
| transferFrom | [] |
| safeTransferFrom | [] |
| safeTransferFrom | [] |
| _safeTransfer | [] |
| _exists | [] |
| _isApprovedOrOwner | [] |
| _safeMint | [] |
| _safeMint | [] |
| _mint | [] |
| _burn | [] |
| _transfer | [] |
| _approve | [] |
| _setApprovalForAll | [] |
| _requireMinted | [] |
| _checkOnERC721Received | 0 |
| _beforeTokenTransfer | [] |
| _afterTokenTransfer | 0 |

Contract Counters

| Function | Modifiers |
|-----------|-----------|
| current | [] |
| increment | [] |
| decrement | [] |
| reset | [] |

Contract BirdsofSpaceMarketPlaceV1

| Function | Modifiers |
|------------------------|-------------------------------------|
| Ownable_init | ['onlyInitializing'] |
| Ownable_init_unchained | ['onlyInitializing'] |
| owner | [] |
| _checkOwner | [] |
| renounceOwnership | ['onlyOwner'] |
| transferOwnership | ['onlyOwner'] |
| _transferOwnership | [] |
| Context_init | ['onlyInitializing'] |
| Context_init_unchained | ['onlyInitializing'] |
| _msgSender | [] |
| _msgData | [] |
| _disableInitializers | [] |
| constructor | [] |
| constructor | [] |
| initialize | ['initializer', 'onlyInitializing'] |
| createMarketItem | ['nonReentrant'] |
| createMarketSale | ['nonReentrant'] |
| fetchMarketitems | 0 |
| withdraw | ['onlyOwner'] |

Contract AddressUpgradeable

• Contract vars: []

• Inheritance:: []

| 0 | [] ['this'] [] | [] [] [] [] | ['code(address)'] ['balance(address)', require(bool,string)'] [functionCall'] [functionCallWithValue'] | [] ['recipient.call{value: amount}()'] [] [] | 1 1 1 |
|----|----------------|----------------------|--|--|---|
| 0 | [] | 0 0 0 | ['functionCall'] | [recipient.call(value: amount)()*] [] [] | 1 1 |
| 0 | | [] [] | | 0 | 1 |
| [] | [] | [] | ['functionCallWithValue'] | 0 | 1 |
| n | | | | | |
| IJ | [] | [] | ['functionCallWithValue'] | П | 1 |
| [] | ['this'] | [] | ['balance(address)', 'isContract'] | ['target.call{value: value}(data)'] | 1 |
| [] | [] | [] | ['functionStaticCall'] | [] | 1 |
| [] | [] | [] | ['isContract', 'require(bool,string)'] | ['target.staticcall(data)'] | 1 |
| [] | [] | [] | ['mload(uint256)', 'revert(string)'] | 0 | 2 |
| [] | | [] | 0 0 | [] ['isContract', 'require(bool,string)'] | [] [] [scontract', 'require(bool,string)'] [target.staticcall(data)'] |

Contract Initializable

• Contract vars: ['_initialized', '_initializing']

• Inheritance:: []

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|------------------------|------------|-----------|-----------------------------------|------------------|--------------------------|----------------|-----------------------|
| _disableInitializers() | internal | [] | ['_initialized', '_initializing'] | ['_initialized'] | ['require(bool,string)'] | [] | 2 |

| Modifiers | Visibility | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity | |
|---|--|-----------------------------------|-----------------------------------|--------------------------|--|-----------------------|--|
| initializer() | itializer() internal ['_initialized', '_initializing'] | | ['_initialized', '_initializing'] | ['require(bool,string)'] | ['AddressUpgradeable.isContract(address(this))'] | 3 | |
| | ['this'] | | | | | | |
| reinitializer(uint8) | internal | ['_initialized', '_initializing'] | ['_initialized', '_initializing'] | ['require(bool,string)'] | 0 | 1 | |
| onlyInitializing() internal ['_initializing'] | | 0 | ['require(bool,string)'] | 0 | 1 | | |

Contract ContextUpgradeable

Contract vars: ['__gap']

• Inheritance:: ['Initializable']

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|--------------------------|------------|----------------------|-----------------------------------|------------------|--------------------------|----------------|-----------------------|
| _disableInitializers() | internal | [] | ['_initialized', '_initializing'] | ['_initialized'] | ['require(bool,string)'] | [] | 2 |
| Context_init() | internal | ['onlyInitializing'] | [] | [] | ['onlyInitializing'] | [] | 1 |
| Context_init_unchained() | internal | ['onlyInitializing'] | [] | [] | ['onlyInitializing'] | [] | 1 |
| _msgSender() | internal | [] | ['msg.sender'] | [] | 0 | [] | 1 |
| _msgData() | internal | [] | ['msg.data'] | [] | 0 | [] | 1 |

| Modifiers | Visibility | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|----------------------|---|-----------------------------------|-----------------------------------|--------------------------|--|-----------------------|
| initializer() | nitializer() internal ['_initialized', '_initializing'] | | ['_initialized', '_initializing'] | ['require(bool,string)'] | ['AddressUpgradeable.isContract(address(this))'] | 3 |
| | | ['this'] | | | | |
| reinitializer(uint8) | internal | ['_initialized', '_initializing'] | ['_initialized', '_initializing'] | ['require(bool,string)'] | 0 | 1 |
| onlyInitializing() | internal | ['_initializing'] | [] | ['require(bool,string)'] | 0 | 1 |

Contract OwnableUpgradeable

Contract vars: ['_owner', '__gap']

• Inheritance:: ['ContextUpgradeable', 'Initializable']

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|-----------------------------|------------|----------------------|-----------------------------------|------------------|--|----------------|-----------------------|
| Context_init() | internal | ['onlyInitializing'] | П | [] | ['onlyInitializing'] | [] | 1 |
| Context_init_unchained() | internal | ['onlyInitializing'] | П | [] | ['onlyInitializing'] | [] | 1 |
| _msgSender() | internal | 0 | ['msg.sender'] | [] | 0 | [] | 1 |
| _msgData() | internal | 0 | ['msg.data'] | [] | 0 | [] | 1 |
| _disableInitializers() | internal | 0 | ['_initialized', '_initializing'] | ['_initialized'] | ['require(bool,string)'] | [] | 2 |
| Ownable_init() | internal | ['onlyInitializing'] | П | [] | ['Ownable_init_unchained', 'onlyInitializing'] | [] | 1 |
| Ownable_init_unchained() | internal | ['onlyInitializing'] | П | [] | ['_msgSender', '_transferOwnership'] | [] | 1 |
| owner() | public | 0 | ['_owner'] | [] | 0 | [] | 1 |
| _checkOwner() | internal | 0 | П | [] | ['_msgSender', 'owner'] | [] | 1 |
| renounceOwnership() | public | ['onlyOwner'] | П | [] | ['_transferOwnership', 'onlyOwner'] | [] | 1 |
| transferOwnership(address) | public | ['onlyOwner'] | П | [] | ['_transferOwnership', 'onlyOwner'] | [] | 1 |
| _transferOwnership(address) | internal | [] | ['_owner'] | ['_owner'] | 0 | 0 | 1 |

| Modifiers | Visibility Read | | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|----------------------|-----------------|---|-----------------------------------|--------------------------|--|--------------------------|
| initializer() | internal | ['_initialized', '_initializing', 'this'] | ['_initialized', '_initializing'] | ['require(bool,string)'] | ['AddressUpgradeable.isContract(address(this))'] | 3 |
| reinitializer(uint8) | internal | ['_initialized', '_initializing'] | ['_initialized', '_initializing'] | ['require(bool,string)'] | 0 | 1 |
| onlyInitializing() | internal | ['_initializing'] | [] | ['require(bool,string)'] | 0 | 1 |
| onlyOwner() | internal | 0 | 0 | ['_checkOwner'] | 0 | 1 |

Contract IERC165

• Contract vars: []

• Inheritance:: []

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|---------------------------|------------|-----------|------|-------|----------------|----------------|-----------------------|
| supportsinterface(bytes4) | external | [] | [] | 0 | [] | 0 | 2 |

Modifiers Visibility Read Write Internal Calls External Calls Cyclomatic Complexity

Contract IERC721

• Contract vars: []

• Inheritance:: ['IERC165']

| Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|------------|--|----------|----------|---|----------------|-----------------------|
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| external | [] | [] | [] | [] | [] | 2 |
| | external external external external external external external external external | external | external | externol [] [] [] externol [] [] [] | externol | external |

Modifiers Visibility Read Write Internal Calls External Calls Cyclomatic Complexity

Contract IERC721Metadata

• Contract vars: []

• Inheritance:: ['IERC721', 'IERC165']

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|---|------------|-----------|------|-------|----------------|----------------|-----------------------|
| balanceOf(address) | external | [] | [] | [] | [] | [] | 2 |
| ownerOf(uint256) | external | [] | [] | [] | [] | [] | 2 |
| safeTransferFrom(address,address,uint256,bytes) | external | [] | [] | [] | [] | [] | 2 |
| safeTransferFrom(address,address,uint256) | external | [] | [] | [] | [] | [] | 2 |
| transferFrom(address,address,uint256) | external | [] | [] | [] | [] | [] | 2 |
| approve(address,uint256) | external | [] | [] | [] | [] | [] | 2 |
| setApprovalForAll(address,bool) | external | [] | [] | [] | [] | [] | 2 |
| getApproved(uint256) | external | [] | [] | [] | [] | [] | 2 |
| isApprovedForAll(address,address) | external | [] | [] | [] | [] | [] | 2 |
| supportsinterface(bytes4) | external | [] | [] | [] | [] | [] | 2 |
| name() | external | [] | [] | [] | [] | [] | 2 |
| symbol() | external | [] | [] | [] | [] | [] | 2 |
| tokenURI(uint256) | external | [] | [] | [] | [] | [] | 2 |

Modifiers Visibility Read Write Internal Calls External Calls Cyclomatic Complexity

Contract IERC721Receiver

• Contract vars: []

• Inheritance:: []

| | Function ODEDC 731Page is address address sint 256 butes) | | | | | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity | |
|---|--|--|--|--|--|------------|-----------|------|-------|----------------|----------------|-----------------------|---|
| | onERC721Received(address,address,uint256,bytes) | | | | | external | [] | [] | [] | [] | 0 | 2 | |
| ľ | | | | | | | | . 1 | | | . 1 | - | - |

Contract Address

• Contract vars: []

• Inheritance:: []

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|---|------------|-----------|----------|-------|--|-------------------------------------|-----------------------|
| isContract(address) | internal | [] | [] | [] | ['code(address)'] | [] | 1 |
| sendValue(address,uint256) | internal | [] | ['this'] | [] | ['balance(address)', 'require(bool,string)'] | ['recipient.call{value: amount}()'] | 1 |
| functionCall(address,bytes) | internal | [] | [] | [] | ['functionCall'] | [] | 1 |
| functionCall(address,bytes,string) | internal | [] | [] | [] | ['functionCallWithValue'] | [] | 1 |
| functionCallWithValue(address,bytes,uint256) | internal | [] | [] | [] | ['functionCallWithValue'] | [] | 1 |
| functionCallWithValue(address,bytes,uint256,string) | internal | [] | ['this'] | [] | ['balance(address)', 'isContract'] | ['target.call{value: value}(data)'] | 1 |
| | | | | | ['require(bool,string)', 'verifyCallResult'] | | |
| functionStaticCall(address,bytes) | internal | 0 | [] | [] | ['functionStaticCall'] | [] | 1 |
| functionStaticCall(address,bytes,string) | internal | 0 | [] | [] | ['isContract', 'require(bool,string)'] | ['target.staticcall(data)'] | 1 |
| | | | | | ['verifyCallResult'] | | |
| functionDelegateCall(address,bytes) | internal | 0 | [] | [] | ['functionDelegateCall'] | [] | 1 |
| functionDelegateCall(address,bytes,string) | internal | 0 | [] | [] | ['isContract', 'require(bool,string)'] | ['target.delegatecall(data)'] | 1 |
| | | | | | ['verifyCallResult'] | | |
| verifyCallResult(bool,bytes,string) | internal | 0 | [] | [] | ['mload(uint256)', 'revert(string)'] | [] | 2 |
| | | | | | ['revert(uint256,uint256)'] | | |

Modifiers Visibility Read Write Internal Calls External Calls Cyclomatic Complexity

Contract Context

• Contract vars: []

• Inheritance:: []

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|--------------|------------|-----------|-------------------|-------|----------------|----------------|-----------------------|
| _msgSender() | internal | [] | ['msg.sender'] | [] | [] | [] | 1 |
| _msgData() | internal | [] | ['msg.data'] | [] | [] | [] | 1 |
| Madifiara | Violbility | Dond Wei | to Internal Calle | | External Calle | Cualemetia Can | mlovity |

Contract ERC165

• Contract vars: []

• Inheritance:: ['IERC165']

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|---------------------------|------------|-----------|------|-------|----------------|----------------|-----------------------|
| supportsinterface(bytes4) | external | [] | [] | [] | [] | 0 | 2 |
| supportsinterface(bytes4) | public | [] | [] | [] | ['type()'] | [] | 1 |

| Modifiers | Visibility Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|-----------|-----------------|-------|----------------|----------------|-----------------------|
|-----------|-----------------|-------|----------------|----------------|-----------------------|

Contract Strings

- Contract vars: ['_HEX_SYMBOLS', '_ADDRESS_LENGTH']
- Inheritance:: []

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|---------------------------------------|------------|-----------|---------------------|-------------------------------------|--------------------------|-------------------------------|-----------------------|
| toString(uint256) | internal | [] | 0 | 0 | [] | ['new bytes(digits)'] | 3 |
| toHexString(uint256) | internal | [] | 0 | 0 | ['toHexString'] | [] | 2 |
| toHexString(uint256,uint256) | internal | [] | ['_HEX_SYMBOLS'] | 0 | ['require(bool,string)'] | ['new bytes(2 * length + 2)'] | 2 |
| toHexString(address) | internal | [] | ['_ADDRESS_LENGTH'] | 0 | ['toHexString'] | [] | 1 |
| slitherConstructorConstantVariables() | internal | [] | [] | ['_ADDRESS_LENGTH', '_HEX_SYMBOLS'] | 0 | П | 1 |

| | ı | Modifiers | Visibility | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|--|---|-----------|------------|------|-------|----------------|----------------|-----------------------|
|--|---|-----------|------------|------|-------|----------------|----------------|-----------------------|

Contract ERC721

- Contract vars: ['_name', '_symbol', '_owners', '_balances',
 '_tokenApprovals', '_operatorApprovals']
- Inheritance:: ['IERC721Metadata', 'IERC721', 'ERC165', 'IERC165', 'Context']

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|---|------------|-----------|----------------|----------------------|-----------------------------------|---|--------------------------|
| name() | external | [] | [] | [] | 0 | II . | 2 |
| symbol() | external | [] | [] | [] | [] | 0 | 2 |
| tokenURI(uint256) | external | [] | [] | [] | [] | 0 | 2 |
| balanceOf(address) | external | [] | [] | [] | [] | 0 | 2 |
| ownerOf(uint256) | external | [] | [] | [] | [] | II . | 2 |
| safeTransferFrom(address,address,uint256,bytes) | external | [] | 0 | [] | 0 | П | 2 |
| safeTransferFrom(address,address,uint256) | external | [] | 0 | [] | 0 | П | 2 |
| transferFrom(address,address,uint256) | external | [] | [] | [] | [] | 0 | 2 |
| approve(address,uint256) | external | [] | [] | [] | [] | 0 | 2 |
| setApprovalForAll(address,bool) | external | [] | [] | [] | [] | 0 | 2 |
| getApproved(uint256) | external | [] | [] | [] | [] | 0 | 2 |
| isApprovedForAll(address,address) | external | [] | [] | [] | [] | 0 | 2 |
| supportsInterface(bytes4) | external | [] | [] | [] | [] | 0 | 2 |
| supportsinterface(bytes4) | public | [] | 0 | [] | ['type()'] | П | 1 |
| _msgSender() | internal | [] | ['msg.sender'] | [] | [] | 0 | 1 |
| _msgData() | internal | [] | ['msg.data'] | [] | [] | II . | 1 |
| constructor(string,string) | public | [] | 0 | ['_name', '_symbol'] | 0 | П | 1 |
| supportsinterface(bytes4) | public | [] | [] | 0 | ['supportsInterface', 'type()'] | n | 1 |
| balanceOf(address) | public | [] | ['_balances'] | [] | ['require(bool,string)'] | 0 | 1 |
| ownerOf(uint256) | public | [] | ['_owners'] | [] | ['require(bool,string)'] | 0 | 1 |
| name() | public | [] | ['_name'] | [] | [] | 0 | 1 |
| symbol() | public | [] | ['_symbol'] | [] | [] | 0 | 1 |
| tokenURI(uint256) | public | [] | 0 | 0 | ['_baseURI', '_requireMinted'] | $[\mbox{"abi.encodePacked(baseURI,tokenld.toString())"}, \mbox{"tokenld.toString()"}] \label{tostring()}$ | 1 |
| | | | | | ['abi.encodePacked()'] | | |
| _baseURI() | internal | [] | [] | [] | [] | n . | 1 |

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomati Complexit |
|---|------------|-----------|--------------------------|--------------------------|--|--|------------------------|
| approve(address,uint256) | public | [] | [] | ['_tokenApprovals'] | ['ownerOf'] | ['ERC721.ownerOf(tokenId)'] | 1 |
| | | | | | ['isApprovedForAll', 'ownerOf'] | | |
| | | | | | ['require(bool,string)'] | | |
| getApproved(uint256) | public | [] | ['_tokenApprovals'] | [] | ['_requireMinted'] | П | 1 |
| setApprovalForAll(address,bool) | public | [] | 0 | [] | ['_msgSender', '_setApprovalForAll'] | 0 | 1 |
| isApprovedForAll(address,address) | public | [] | ['_operatorApprovals'] | [] | 0 | II . | 1 |
| transferFrom(address,address,uint256) | public | [] | [] | [] | ['_isApprovedOrOwner', '_msgSender'] | 0 | 1 |
| | | | | | ['_transfer', 'require(bool,string)'] | | |
| safeTransferFrom(address,address,uint256) | public | [] | 0 | П | ['safeTransferFrom'] | II . | 1 |
| safeTransferFrom(address,address,uint256,bytes) | public | [] | 0 | 0 | ['_isApprovedOrOwner', '_msgSender'] | O . | 1 |
| | | | | | ['_safeTransfer', 'require(bool,string)'] | | |
| _safeTransfer(address,address,uint256,bytes) | internal | [] | [] | 0 | ['_checkOnERC721Received', '_transfer'] | 0 | 1 |
| | | | | | ['require(bool,string)'] | | |
| _exists(uint256) | internal | [] | ['_owners'] | [] | 0 | П | 1 |
| _isApprovedOrOwner(address,uint256) | internal | [] | [] | 0 | ['getApproved', 'isApprovedForAll'] | ['ERC721.ownerOf(tokenId)'] | 1 |
| | | | | | ['ownerOf'] | | |
| _safeMint(address,uint256) | internal | [] | [] | [] | ['_safeMint'] | 0 | 1 |
| _safeMint(address,uint256,bytes) | internal | [] | 0 | 0 | ['_checkOnERC721Received', '_mint'] | O . | 1 |
| | | | | | ['require(bool,string)'] | | |
| _mint(address,uint256) | internal | [] | ['_balances'] | ['_balances', '_owners'] | ['_afterTokenTransfer', '_beforeTokenTransfer'] | ['_exists', 'require(bool,string)'] | 1 |
| | | | | | ['_transfer', 'require(bool,string)'] | | |
| _burn(uint256) | internal | [] | ['_balances', '_owners'] | ['_balances', '_owners'] | ['_afterTokenTransfer', '_approve'] | ['ERC721.ownerOf(tokenId)'] | 1 |
| | | | | | ['_beforeTokenTransfer', 'ownerOf'] | | |
| _transfer(address,address,uint256) | internal | [] | ['_balances'] | ['_balances', '_owners'] | ['_afterTokenTransfer', '_approve'] | ['ERC721.ownerOf(tokenId)'] | 1 |
| | | | | | ['_beforeTokenTransfer', 'ownerOf'] | | |
| | | | | | ['require(bool,string)'] | | |
| _approve(address,uint256) | internal | [] | [] | ['_tokenApprovals'] | ['ownerOf'] | ['ERC721.ownerOf(tokenId)'] | 1 |
| _setApprovalForAll(address,address,bool) | internal | [] | [] | ['_operatorApprovals'] | ['require(bool,string)'] | П | 1 |
| requireMinted(uint256) | internal | [] | Π | [] | ['_exists', 'require(bool,string)'] | 0 | 1 |
| _checkOnERC721Received(address,address,uint256,bytes) | private | [] | П | 0 | ['_msgSender', 'mload(uint256)'] | $[{\tt TERC72 Receiver(to).onERC72 Received(_msgSender(),from,tokenld,data)'}, {\tt To.isContract()'}]$ | 3 |
| | | | | | ['revert(string)', 'revert(uint256,uint256)'] | | |
| _beforeTokenTransfer(address,address,uint256) | internal | [] | [] | [] | 0 | П | 1 |
| _afterTokenTransfer(address,address,uint256) | internal | [] | [] | [] | [] | [] | 1 |

Contract ReentrancyGuard

• Contract vars: ['_NOT_ENTERED', '_ENTERED', '_status']

• Inheritance:: []

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|---------------------------------------|------------|-----------|------------------|------------------------------|----------------|----------------|-----------------------|
| constructor() | internal | [] | ['_NOT_ENTERED'] | ['_status'] | [] | [] | 1 |
| slitherConstructorConstantVariables() | internal | [] | [] | ['_ENTERED', '_NOT_ENTERED'] | [] | [] | 1 |

| Modifiers | Visibility | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|----------------|------------|------------------------------|-------------|--------------------------|----------------|-----------------------|
| nonReentrant() | internal | ['_ENTERED', '_NOT_ENTERED'] | ['_status'] | ['require(bool,string)'] | [] | 1 |
| | | ['_status'] | | | | |

Contract Counters

• Contract vars: []

• Inheritance:: []

| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|-----------------------------|------------|-----------|------|-------|--------------------------|----------------|-----------------------|
| current(Counters.Counter) | internal | [] | [] | [] | [] | [] | 1 |
| increment(Counters.Counter) | internal | [] | [] | [] | [] | [] | 1 |
| decrement(Counters.Counter) | internal | [] | [] | [] | ['require(bool,string)'] | [] | 1 |
| reset(Counters.Counter) | internal | [] | [] | [] | [] | [] | 1 |

Contract BirdsofSpaceMarketPlaceV1

- Contract vars: ['itemIds', '_itemsSold', 'itemId', 'idToMarketItem']
- Inheritance:: ['OwnableUpgradeable', 'ContextUpgradeable', 'Initializable', 'ReentrancyGuard']

| | | | | | | | Cyclomatic |
|---|------------|----------------------|-------------------------------------|---------------------------------|--|---|------------|
| Function | Visibility | Modifiers | Read | Write | Internal Calls | External Calls | Complexity |
| Ownable_init() | internal | ['onlyInitializing'] | [] | 0 | ['Ownable_init_unchained', 'onlyInitializing'] | 0 | 1 |
| Ownable_init_unchained() | internal | ['onlyInitializing'] | 0 | 0 | ['_msgSender', '_transferOwnership'] | О | 1 |
| | | | | | ['onlyInitializing'] | 0 | |
| owner() | public | [] | ['_owner'] | [] | 0 | 0 | 1 |
| _checkOwner() | internal | [] | [] | [] | ['_msgSender', 'owner'] | 0 | 1 |
| | | | | | ['require(bool,string)'] | 0 | |
| renounceOwnership() | public | ['onlyOwner'] | [] | [] | ['_transferOwnership', 'onlyOwner'] | 0 | 1 |
| transferOwnership(address) | public | ['onlyOwner'] | [] | [] | ['_transferOwnership', 'onlyOwner'] | 0 | 1 |
| | | | | | ['require(bool,string)'] | 0 | |
| _transferOwnership(address) | internal | [] | ['_owner'] | ['_owner'] | [] | 0 | 1 |
| Context_init() | internal | ['onlyInitializing'] | [] | [] | ['onlyInitializing'] | 0 | 1 |
| Context_init_unchained() | internal | ['onlyInitializing'] | [] | [] | ['onlyInitializing'] | 0 | 1 |
| _msgSender() | internal | [] | ['msg.sender'] | [] | [] | 0 | 1 |
| _msgData() | internal | [] | ['msg.data'] | [] | [] | 0 | 1 |
| _disableInitializers() | internal | 0 | ['_initialized', '_initializing'] | ['_initialized'] | ['require(bool,string)'] | П | 2 |
| constructor() | internal | [] | ['_NOT_ENTERED'] | ['_status'] | 0 | П | 1 |
| constructor() | public | [] | [] | [] | ['_disableInitializers'] | П | 1 |
| initialize() | public | ['initializer'] | [] | [] | ['Ownable_init', 'initializer'] | П | 1 |
| createMarketItem(address,uint256,uint256) | public | ['nonReentrant'] | ['itemId', 'itemIds'] | ['idToMarketItem', 'itemId'] | ['nonReentrant', 'require(bool,string)'] | ['IERC72!(nftContract).transferFrom(msg.sender,address(this),tokenId)', 'itemIds.increment()', 'itemIds.current()', 'new BirdsofSpaceMarketPlaceV1.MarketItem'] | 1 |
| createMarketSale(address,uint256) | public | ['nonReentrant'] | ['_itemsSold', 'idToMarketItem'] | ['idToMarketItem'] | ['nonReentrant', 'require(bool,string)'] | ['IERC72!(nftContract).transferFrom(address(this),msg.sender,tokenid)', '_itemsSold.increment()', 'idToMarketItem[_itemid].seller.transfer(msg.value)'] | 1 |
| | | | ['msg.sender', 'this'] | | | П | |
| fetchMarketitems() | public | [] | ['_itemsSold', 'idToMarketItem'] | 0 | 0 | ['_itemsSold.current()', 'itemids.current()', 'itemids.current()', 'new BirdsofSpaceMarketPlaceV1.MarketItem'] | 3 |
| | | | ['itemIds'] | | | 0 | |
| withdraw() | public | ['onlyOwner'] | ['this'] | 0 | ['balance(address)', 'onlyOwner'] | $[\mbox{"address(owner()).call} \{ \mbox{value: address(this).balance} \} ()', \mbox{"owner', "require(bool)"}]$ | 1 |

| Modifiers | Visibility | Read | Write | Internal Calls | External Calls | Cyclomatic Complexity |
|----------------------|------------|-----------------------------------|-----------------------------------|--------------------------|--|-----------------------|
| onlyOwner() | internal | 0 | [] | ['_checkOwner'] | 0 | 1 |
| initializer() | internal | ['_initialized', '_initializing'] | ['_initialized', '_initializing'] | ['require(bool,string)'] | ['AddressUpgradeable.isContract(address(this))'] | 3 |
| | | ['this'] | | | | |
| reinitializer(uint8) | internal | ['_initialized', '_initializing'] | ['_initialized', '_initializing'] | ['require(bool,string)'] | 0 | 1 |
| onlyInitializing() | internal | ['_initializing'] | [] | ['require(bool,string)'] | 0 | 1 |
| nonReentrant() | internal | ['_ENTERED', '_NOT_ENTERED'] | ['_status'] | ['require(bool,string)'] | О | 1 |
| | | ['_status'] | | | | |