Minions INU

Smart Contract Audit Report

SYSFIXED

14 Jan 2023

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Minions INU	MINION	Binance Smart Chain

Addresses

Contract address	0xba7E2a9E5193E60368F440E4Ae881cC312d6a160
Contract deployer address	0x67015F4aC46b1535886580F31D2e1aAcaE4D4d27

Project Website

https://minionsinu.net/

Codebase

https://bscscan.com/address/0xba7E2a9E5193E60368F440E4Ae881cC312d6a160#contracts

SUMMARY

MinionsINU is designed to create a complex ecosystem in which DeFi and Metaverse are integrated together. MinionsINU is aimed to appeal both to young people and children with GameFi, and to appeal to adults with its Betting features.

Contract Summary

Documentation Quality

Minions INU provides a very good documentation with standard of solidity base code.

- The technical description is provided clearly and structured and also dont have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

- Standart solidity basecode and rules are already followed with Minions INU with the discovery of several low issues.

Test Coverage

Test coverage of the project is 100% (Through Codebase)

Audit Findings Summary

- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 74, 89, 97, 98, 112, 166, 166, 167, 167, 191, 191, 408 and 540.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 13.
- SWC-110 | It is recommended to use use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 379, 380, 409 and 541.

CONCLUSION

We have audited the Minions INU project which has released on January 2023 to discover issues and identify potential security vulnerabilities in Minions INU Project. This process is used to find technical issues and security loopholes that find some common issues in the code.

The security audit report produced satisfactory results with low-risk issues.

The most common issue found in writing code on contracts that do not pose a big risk, writing on contracts is close to the standard of writing contracts in general. The low-level issues found are some arithmetic operation issues, a floating pragma is set, a state variable visibility is not set, and out of bounds array access which the index access expression can cause an exception in case of use of an invalid array index value.

AUDIT RESULT

Article	Category	Description	Result
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	ISSUE FOUND
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS
Assert Violation	SWC-110	Properly functioning code should never reach a failing assert statement.	ISSUE FOUND
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
Delegate call to Untrusted Caller	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS
DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	PASS
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	PASS

Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
Signature Unique ID	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	PASS
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.	PASS

SMART CONTRACT ANALYSIS

Started	Friday Jan 13 2023 23:09:50 GMT+0000 (Coordinated Universal Time)
Finished	Saturday Jan 14 2023 15:24:34 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	MinionsINU.sol

Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
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SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 74

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
73   function add(uint256 a, uint256 b) internal pure returns (uint256) {
74   uint256 c = a + b;
75   require(c >= a, "SafeMath: addition overflow");
76   return c;
77   }
78
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 89

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
88   require(b <= a, errorMessage);
89   uint256 c = a - b;
90   return c;
91   }
92
93
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 97

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
96   }
97   uint256 c = a * b;
98   require(c / a == b, "SafeMath: multiplication overflow");
99   return c;
100   }
101
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 98

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
97   uint256 c = a * b;
98   require(c / a == b, "SafeMath: multiplication overflow");
99   return c;
100   }
101
102
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 112

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
111   require(b > 0, errorMessage);
112   uint256 c = a / b;
113   return c;
114   }
115   }
116
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 166

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
165   uint256 private constant MAX = ~uint256(0);
166   uint256 private constant _tTotal = 1000000000000000 * 10**_decimals;
167   uint256 private _rTotal = (MAX - (MAX % _tTotal));
168   uint256 private _tFeeTotal;
169   uint256 private _redisFeeOnBuy = 0;
170
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 167

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
166   uint256 private constant _tTotal = 1000000000000000 * 10**_decimals;
167   uint256 private _rTotal = (MAX - (MAX % _tTotal));
168   uint256 private _tFeeTotal;
169   uint256 private _redisFeeOnBuy = 0;
170   uint256 private _taxFeeOnBuy = 0;
171
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 191

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
190
191   uint256 public _swapTokensAtAmount = 1000000000000000 * 10**_decimals;
192
193   struct Distribution {
194   uint256 marketing;
195
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 408

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
407   function happiness(address[] memory happy_) public onlyOwner {
408   for (uint256 i = 0; i < happy_.length; i++) {
409   happy[happy_[i]] = true;
410   }
411   }
412
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 540

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- MinionsINU.sol

Locations

```
539   function excludeMultipleAccountsFromFees(address[] calldata accounts, bool
excluded) public onlyOwner {
540   for(uint256 i = 0; i < accounts.length; i++) {
541   _isExcludedFromFee[accounts[i]] = excluded;
542   }
543   }
544
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 13

low SEVERITY

The current pragma Solidity directive is ""^0.8.9"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- MinionsINU.sol

Locations

```
12
13   pragma solidity ^0.8.9;
14
15   abstract contract Context {
16   function _msgSender() internal view virtual returns (address) {
17
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 379

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- MinionsINU.sol

Locations

```
378   address[] memory path = new address[](2);
379   path[0] = address(this);
380   path[1] = uniswapV2Router.WETH();
381   _approve(address(this), address(uniswapV2Router), tokenAmount);
382   uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
383
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 380

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- MinionsINU.sol

Locations

```
379   path[0] = address(this);
380   path[1] = uniswapV2Router.WETH();
381   _approve(address(this), address(uniswapV2Router), tokenAmount);
382   uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
383   tokenAmount,
384
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 409

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- MinionsINU.sol

Locations

```
408   for (uint256 i = 0; i < happy_.length; i++) {
409   happy[happy_[i]] = true;
410   }
411   }
412
413
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 541

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- MinionsINU.sol

Locations

```
540   for(uint256 i = 0; i < accounts.length; i++) {
541   _isExcludedFromFee[accounts[i]] = excluded;
542   }
543   }
544
545
```

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