



SOOMA

Smart Contract Audit Report

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
SOOMA	SOA	Binance Smart Chain

Addresses

Contract address	0x9a30B72A793a716920cF985Fd9Ae3a3cb278C3a2
Contract deployer address	0x9C0B62E8535849857933efdAB7772e3E468357ee

Project Website

https://sooma.io/

Codebase

https://bscscan.com/address/0x9a30B72A793a716920cF985Fd9Ae3a3cb278C3a2#code

SUMMARY

SOOMA (SOA) is a multipurpose deflation token on the bsc platform. After the launch of the project, 2% of the total amount will be burned every month according to Tokenomics.

Contract Summary

Documentation Quality

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

- The technical description is provided clearly and structured and also don't have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

- Standard solidity basecode and rules are already followed by SOOMA with the discovery of several low issues.

Test Coverage

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

Audit Findings Summary

- SWC-100 SWC-108 | Explicitly define visibility for all state variables on lines 629.
- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 25, 33, 39, 40, 47, 53, 57, 60, 63, 66, 69, 74, 80, 86, 225, 604, 605, 632, 634, 827, 945, 966, 974 and 829.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 9.
- SWC-110 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 828, 829, 947, 948, 950, 951, 1078 and 1079.

CONCLUSION

We have audited the SOOMA project which has released on November 2022 to discover issues and identify potential security vulnerabilities in SOOMA 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.	ISSUE FOUND
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	Saturday Nov 05 2022 12:16:57 GMT+0000 (Coordinated Universal Time)
Finished	Sunday Nov 06 2022 11:20:13 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	SOOMA.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-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

LINE 25

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
24  unchecked {  
25    uint256 c = a + b;  
26    if (c < a) return (false, 0);  
27    return (true, c);  
28  }  
29
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 33

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
32  if (b > a) return (false, 0);
33  return (true, a - b);
34  }
35  }
36  function tryMul(uint256 a, uint256 b) internal pure returns (bool, uint256) {
37
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 39

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
38  if (a == 0) return (true, 0);
39  uint256 c = a * b;
40  if (c / a != b) return (false, 0);
41  return (true, c);
42  }
43
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 40

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
39  uint256 c = a * b;  
40  if (c / a != b) return (false, 0);  
41  return (true, c);  
42  }  
43  }  
44
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 47

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
46  if (b == 0) return (false, 0);
47  return (true, a / b);
48  }
49  }
50  function tryMod(uint256 a, uint256 b) internal pure returns (bool, uint256) {
51
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 53

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
52  if (b == 0) return (false, 0);
53  return (true, a % b);
54  }
55  }
56  function add(uint256 a, uint256 b) internal pure returns (uint256) {
57
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 57

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
56  function add(uint256 a, uint256 b) internal pure returns (uint256) {  
57  return a + b;  
58  }  
59  function sub(uint256 a, uint256 b) internal pure returns (uint256) {  
60  return a - b;  
61  }
```


SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 60

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
59  function sub(uint256 a, uint256 b) internal pure returns (uint256) {  
60  return a - b;  
61  }  
62  function mul(uint256 a, uint256 b) internal pure returns (uint256) {  
63  return a * b;  
64
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 63

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
62  function mul(uint256 a, uint256 b) internal pure returns (uint256) {  
63  return a * b;  
64  }  
65  function div(uint256 a, uint256 b) internal pure returns (uint256) {  
66  return a / b;  
67
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 66

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
65  function div(uint256 a, uint256 b) internal pure returns (uint256) {  
66  return a / b;  
67  }  
68  function mod(uint256 a, uint256 b) internal pure returns (uint256) {  
69  return a % b;  
70  }
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 69

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
68  function mod(uint256 a, uint256 b) internal pure returns (uint256) {
69  return a % b;
70  }
71  function sub(uint256 a, uint256 b, string memory errorMessage) internal pure returns
(uint256) {
72  unchecked {
73
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 74

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
73   require(b <= a, errorMessage);  
74   return a - b;  
75   }  
76   }  
77   function div(uint256 a, uint256 b, string memory errorMessage) internal pure returns  
    (uint256) {  
78
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 80

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
79  require(b > 0, errorMessage);
80  return a / b;
81  }
82  }
83  function mod(uint256 a, uint256 b, string memory errorMessage) internal pure returns
(uint256) {
84
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 86

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
85     require(b > 0, errorMessage);
86     return a % b;
87 }
88 }
89 }
90
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 225

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
224  _owner = address(0);  
225  _lockTime = block.timestamp + time;  
226  emit OwnershipTransferred(_owner, address(0));  
227  }  
228  
229
```


SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 604

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
603  uint256 private constant MAX = ~uint256(0);
604  uint256 private _tTotal = 10000000000 * 10**18;
605  uint256 private _rTotal = (MAX - (MAX % _tTotal));
606  uint256 private _tFeeTotal;
607
608
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 605

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
604  uint256 private _tTotal = 100000000000 * 10**18;  
605  uint256 private _rTotal = (MAX - (MAX % _tTotal));  
606  uint256 private _tFeeTotal;  
607  
608  string private _name = "SOOMA";  
609
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 632

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
631
632  uint256 public _maxTxAmount = 1000000* 10**18;
633
634  uint256 private numTokensSellToAddToLiquidity = 1000000* 10**18;
635
636
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 634

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
633
634  uint256 private numTokensSellToAddToLiquidity = 1000000* 10**18;
635
636  event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
637  event SwapAndLiquifyEnabledUpdated(bool enabled);
638
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 827

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
826   require(!_isExcluded[account], "Account is already excluded");
827   for (uint256 i = 0; i < _excluded.length; i++) {
828       if (_excluded[i] == account) {
829           _excluded[i] = _excluded[_excluded.length - 1];
830           _tOwned[account] = 0;
831       }
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 829

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
828     if (_excluded[i] == account) {  
829         _excluded[i] = _excluded[_excluded.length - 1];  
830         _tOwned[account] = 0;  
831         _isExcluded[account] = false;  
832         _excluded.pop();  
833     }
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 945

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
944 uint256 tSupply = _tTotal;
945 for (uint256 i = 0; i < _excluded.length; i++) {
946     if (
947         _rOwned[_excluded[i]] > rSupply ||
948         _tOwned[_excluded[i]] > tSupply
949     )
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 966

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
965     function calculateTaxFee(uint256 _amount) private view returns (uint256) {  
966         return _amount.mul(_taxFee).div(10**2);  
967     }  
968  
969     function calculateLiquidityFee(uint256 _amount)  
970
```


SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 974

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
973  {  
974  return _amount.mul(_liquidityFee).div(10**2);  
975  }  
976  
977  function removeAllFee() private {  
978
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 829

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
828     if (_excluded[i] == account) {  
829         _excluded[i] = _excluded[_excluded.length - 1];  
830         _tOwned[account] = 0;  
831         _isExcluded[account] = false;  
832         _excluded.pop();  
833     }
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 9

low SEVERITY

The current pragma Solidity directive is `""^0.8.7"`. 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

- SOOMA.sol

Locations

```
8
9  pragma solidity ^0.8.7;
10
11  interface IBEP20 {
12      function totalSupply() external view returns (uint256);
13
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 629

low SEVERITY

It is best practice to set the visibility of state variables explicitly. The default visibility for "inSwapAndLiquify" is internal. Other possible visibility settings are public and private.

Source File

- SOOMA.sol

Locations

```
628
629  bool inSwapAndLiquify;
630  bool public swapAndLiquifyEnabled = false;
631
632  uint256 public _maxTxAmount = 1000000* 10**18;
633
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 828

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
827   for (uint256 i = 0; i < _excluded.length; i++) {  
828     if (_excluded[i] == account) {  
829       _excluded[i] = _excluded[_excluded.length - 1];  
830       _tOwned[account] = 0;  
831       _isExcluded[account] = false;  
832     }
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 829

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
828   if (_excluded[i] == account) {  
829       _excluded[i] = _excluded[_excluded.length - 1];  
830       _tOwned[account] = 0;  
831       _isExcluded[account] = false;  
832       _excluded.pop();  
833   }
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 947

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
946   if (  
947     _rOwned[_excluded[i]] > rSupply ||  
948     _tOwned[_excluded[i]] > tSupply  
949   ) return (_rTotal, _tTotal);  
950   rSupply = rSupply.sub(_rOwned[_excluded[i]]);  
951
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 948

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
947  _rOwned[_excluded[i]] > rSupply ||  
948  _tOwned[_excluded[i]] > tSupply  
949  ) return (_rTotal, _tTotal);  
950  rSupply = rSupply.sub(_rOwned[_excluded[i]]);  
951  tSupply = tSupply.sub(_tOwned[_excluded[i]]);  
952
```


SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 950

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
949     ) return (_rTotal, _tTotal);
950     rSupply = rSupply.sub(_rOwned[_excluded[i]]);
951     tSupply = tSupply.sub(_tOwned[_excluded[i]]);
952 }
953 if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
954
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 951

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
950   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
951   tSupply = tSupply.sub(_tOwned[_excluded[i]]);
952   }
953   if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
954   return (rSupply, tSupply);
955
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1078

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
1077     address[] memory path = new address[](2);
1078     path[0] = address(this);
1079     path[1] = uniswapV2Router.WETH();
1080
1081     _approve(address(this), address(uniswapV2Router), tokenAmount);
1082
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1079

low SEVERITY

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

Source File

- SOOMA.sol

Locations

```
1078     path[0] = address(this);  
1079     path[1] = uniswapV2Router.WETH();  
1080  
1081     _approve(address(this), address(uniswapV2Router), tokenAmount);  
1082  
1083
```

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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 us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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