



Kodachi Token Smart Contract Audit Report

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Kodachi Token	KODACHI	Ethereum

Addresses

Contract address	0x57c411e9a358e2d2d0a6b058cedb709175e8fd16
Contract deployer address	0xCaB769FB35b0b454073E4AddCDB51c42225f7F3D

Project Website

https://kodachitoken.com/

Codebase

https://etherscan.io/address/0x57c411e9a358e2d2d0a6b058cedb709175e8fd16#code

SUMMARY

Kodachi Token is an ERC20 token existing on the Ethereum block chain. Bridges to BSC, FTM and AVAX networks are also being developed in addition to the Holy Grail of Dexs, which will change the way investors view decentralized exchanges. All this made possible by our very own, Mr. Kodachi

Contract Summary

Documentation Quality

Kodachi Token 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 Kodachi Token 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 454.
- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 38, 50, 60, 61, 73, 85, 192, 427, 427, 427, 427, 428, 428, 448, 448, 448, 448, 449, 449, 449, 449, 601, 603, 805, 824, 830 and 603.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 7.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 602, 603, 603, 681, 682, 806, 806, 807 and 808.
- SWC-120 | It is recommended to use external sources of randomness via oracles on lines 928.

CONCLUSION

We have audited the Kodachi Token project released on August 2022 to discover issues and identify potential security vulnerabilities in Kodachi Token Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the Kodachi Token smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some arithmetic operation issues, a floating pragma is set, a state variable visibility is not set, weak sources of randomness and out of bounds array access which the index access expression can cause an exception in case of the 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
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.	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
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.	PASS
Assert Violation	SWC-110 SWC-123	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 Callee	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
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.	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.	ISSUE FOUND
Write to Arbitrary Storage Location	SWC-124	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	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
Insufficient Gas Griefing	SWC-126	Insufficient gas grieving attacks can be performed on contracts which accept data and use it in a sub-call on another contract.	PASS
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	PASS

Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	PASS
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.	PASS
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	PASS
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	PASS
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS

SMART CONTRACT ANALYSIS

Started	Wednesday Aug 17 2022 22:48:21 GMT+0000 (Coordinated Universal Time)
Finished	Thursday Aug 18 2022 08:39:42 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	KodachiToken.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	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	COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED	low	acknowledged

SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-108	STATE VARIABLE VISIBILITY IS NOT SET.	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-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-120	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	low	acknowledged

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 38

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
37  function add(uint256 a, uint256 b) internal pure returns (uint256) {
38      uint256 c = a + b;
39      require(c >= a, "SafeMath: addition overflow");
40
41      return c;
42  }
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 50

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
49  require(b <= a, errorMessage);  
50  uint256 c = a - b;  
51  
52  return c;  
53  }  
54
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 60

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
59
60  uint256 c = a * b;
61  require(c / a == b, "SafeMath: multiplication overflow");
62
63  return c;
64
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 61

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
60  uint256 c = a * b;  
61  require(c / a == b, "SafeMath: multiplication overflow");  
62  
63  return c;  
64  }  
65
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 73

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
72  require(b > 0, errorMessage);
73  uint256 c = a / b;
74  // assert(a == b * c + a % b); // There is no case in which this doesn't hold
75
76  return c;
77
```


SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 85

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
84     require(b != 0, errorMessage);  
85     return a % b;  
86 }  
87 }  
88  
89
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 192

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
191  _owner = address(0);
192  _lockTime = block.timestamp + time;
193  emit OwnershipTransferred(_owner, address(0));
194  }
195
196
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 427

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
426  uint256 private constant MAX = ~uint256(0);
427  uint256 private _tTotal = 100 * 10**9 * 10**18; // 100 Bn tokens
428  uint256 private _rTotal = (MAX - (MAX % _tTotal));
429  uint256 private _tFeeTotal;
430
431
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 427

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
426  uint256 private constant MAX = ~uint256(0);
427  uint256 private _tTotal = 100 * 10**9 * 10**18; // 100 Bn tokens
428  uint256 private _rTotal = (MAX - (MAX % _tTotal));
429  uint256 private _tFeeTotal;
430
431
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 427

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
426  uint256 private constant MAX = ~uint256(0);
427  uint256 private _tTotal = 100 * 10**9 * 10**18; // 100 Bn tokens
428  uint256 private _rTotal = (MAX - (MAX % _tTotal));
429  uint256 private _tFeeTotal;
430
431
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 427

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
426 uint256 private constant MAX = ~uint256(0);
427 uint256 private _tTotal = 100 * 10**9 * 10**18; // 100 Bn tokens
428 uint256 private _rTotal = (MAX - (MAX % _tTotal));
429 uint256 private _tFeeTotal;
430
431
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 428

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
427  uint256 private _tTotal = 100 * 10**9 * 10**18; // 100 Bn tokens
428  uint256 private _rTotal = (MAX - (MAX % _tTotal));
429  uint256 private _tFeeTotal;
430
431  string private _name = "Kodachi Token";
432
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 428

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
427 uint256 private _tTotal = 100 * 10**9 * 10**18; // 100 Bn tokens
428 uint256 private _rTotal = (MAX - (MAX % _tTotal));
429 uint256 private _tFeeTotal;
430
431 string private _name = "Kodachi Token";
432
```


SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 448

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
447
448  uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449  uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451  IUniswapV2Router02 public immutable uniswapV2Router;
452
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 448

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
447
448  uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449  uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451  IUniswapV2Router02 public immutable uniswapV2Router;
452
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 448

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
447
448  uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449  uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451  IUniswapV2Router02 public immutable uniswapV2Router;
452
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 448

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
447
448  uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449  uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451  IUniswapV2Router02 public immutable uniswapV2Router;
452
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 449

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
448 uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449 uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451 IUniswapV2Router02 public immutable uniswapV2Router;
452 address public immutable uniswapV2Pair;
453
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 449

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
448 uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449 uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451 IUniswapV2Router02 public immutable uniswapV2Router;
452 address public immutable uniswapV2Pair;
453
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 449

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
448 uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449 uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451 IUniswapV2Router02 public immutable uniswapV2Router;
452 address public immutable uniswapV2Pair;
453
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 449

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
448 uint256 public _maxTxAmount = 100 * 10**6 * 10**18;
449 uint256 private minimumTokensBeforeSwap = 1 * 10**6 * 10**18;
450
451 IUniswapV2Router02 public immutable uniswapV2Router;
452 address public immutable uniswapV2Pair;
453
```


SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 601

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
600   require(!_isExcluded[account], "Account is already excluded");
601   for (uint256 i = 0; i < _excluded.length; i++) {
602       if (_excluded[i] == account) {
603           _excluded[i] = _excluded[_excluded.length - 1];
604           _rOwned[account] = _tOwned[account].mul(_getRate());
605       }
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 603

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
602     if (_excluded[i] == account) {  
603         _excluded[i] = _excluded[_excluded.length - 1];  
604         _rOwned[account] = _tOwned[account].mul(_getRate());  
605         _tOwned[account] = 0;  
606         _isExcluded[account] = false;  
607     }
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 805

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
804  uint256 tSupply = _tTotal;
805  for (uint256 i = 0; i < _excluded.length; i++) {
806    if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return
      (_rTotal, _tTotal);
807    rSupply = rSupply.sub(_rOwned[_excluded[i]]);
808    tSupply = tSupply.sub(_tOwned[_excluded[i]]);
809  }
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 824

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
823     return _amount.mul(_taxFee).div(  
824         10**3  
825     );  
826 }  
827  
828
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 830

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
829     return _amount.mul(_totalFee).div(  
830         10**3  
831     );  
832 }  
833  
834
```

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

LINE 603

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
602     if (_excluded[i] == account) {  
603         _excluded[i] = _excluded[_excluded.length - 1];  
604         _rOwned[account] = _tOwned[account].mul(_getRate());  
605         _tOwned[account] = 0;  
606         _isExcluded[account] = false;  
607     }
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 7

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

- KodachiToken.sol

Locations

```
6
7  pragma solidity ^0.8.7;
8
9  abstract contract Context {
10     function _msgSender() internal view virtual returns (address payable) {
11
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 454

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

- KodachiToken.sol

Locations

```
453
454     bool inSwapAndLiquify;
455     bool public swapAndLiquifyEnabled = false;
456     // bool public contractLockEnabled = true;
457
458
```


SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 602

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
601   for (uint256 i = 0; i < _excluded.length; i++) {  
602     if (_excluded[i] == account) {  
603       _excluded[i] = _excluded[_excluded.length - 1];  
604       _rOwned[account] = _tOwned[account].mul(_getRate());  
605       _tOwned[account] = 0;  
606     }
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 603

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
602  if (_excluded[i] == account) {  
603    _excluded[i] = _excluded[_excluded.length - 1];  
604    _rOwned[account] = _tOwned[account].mul(_getRate());  
605    _tOwned[account] = 0;  
606    _isExcluded[account] = false;  
607  }
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 603

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
602   if (_excluded[i] == account) {  
603     _excluded[i] = _excluded[_excluded.length - 1];  
604     _rOwned[account] = _tOwned[account].mul(_getRate());  
605     _tOwned[account] = 0;  
606     _isExcluded[account] = false;  
607   }
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 681

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
680     address[] memory path = new address[](2);
681     path[0] = address(this);
682     path[1] = uniswapV2Router.WETH();
683
684     _approve(address(this), address(uniswapV2Router), tokenAmount);
685
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 682

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
681     path[0] = address(this);  
682     path[1] = uniswapV2Router.WETH();  
683  
684     _approve(address(this), address(uniswapV2Router), tokenAmount);  
685  
686
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 806

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
805   for (uint256 i = 0; i < _excluded.length; i++) {  
806     if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return  
      (_rTotal, _tTotal);  
807     rSupply = rSupply.sub(_rOwned[_excluded[i]]);  
808     tSupply = tSupply.sub(_tOwned[_excluded[i]]);  
809   }  
810
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 806

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
805   for (uint256 i = 0; i < _excluded.length; i++) {  
806     if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return  
      (_rTotal, _tTotal);  
807     rSupply = rSupply.sub(_rOwned[_excluded[i]]);  
808     tSupply = tSupply.sub(_tOwned[_excluded[i]]);  
809   }  
810
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 807

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
806  if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return
      (_rTotal, _tTotal);
807  rSupply = rSupply.sub(_rOwned[_excluded[i]]);
808  tSupply = tSupply.sub(_tOwned[_excluded[i]]);
809  }
810  if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
811
```


SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 808

low SEVERITY

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

Source File

- KodachiToken.sol

Locations

```
807     rSupply = rSupply.sub(_rOwned[_excluded[i]]);
808     tSupply = tSupply.sub(_tOwned[_excluded[i]]);
809 }
810 if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
811 return (rSupply, tSupply);
812
```

SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 928

low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

Source File

- KodachiToken.sol

Locations

```
927
928   emit BuyTaxEnabled(_enable, block.number);
929   }
930
931   function transferToAddressETH(address payable recipient, uint256 amount) private {
932
```

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