CateCoin

Smart Contract Audit Report

SYSFIXED

05 Jul 2021

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
CateCoin	CATE	Binance Smart Chain

Addresses

Contract address	0xe4fae3faa8300810c835970b9187c268f55d998f
Contract deployer address	0x18DAe387311c753faB961F8b205796EdCE5Bc4EE

Project Website

https://catecoin.com/

Codebase

https://bscscan.com/address/0xe4fae3faa8300810c835970b9187c268f55d998f#code

SUMMARY

CATEcoin is providing a decentralized meme platform for meme creators. CATEcoin is also adding NFT market for such memes.

Contract Summary

Documentation Quality

CateCoin 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.

- Standard solidity basecode and rules are already followed by CateCoin 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 913.
- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 124, 160, 183, 184, 223, 263, 896, 896, 896, 896, 897, 897, 916, 916, 916, 916, 917, 917, 917, 917, 1106, 1108, 1156, 1182, 1265, 1286, 1294 and 1108.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 6.
- 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 1107, 1108, 1108, 1267, 1268, 1270, 1271, 1406 and 1407.

CONCLUSION

We have audited the CateCoin project released on January 2023 to discover issues and identify potential security vulnerabilities in CateCoin 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 satisfactory results with low-risk issues.

The CateCoin smart contract code issues 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, 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. The current pragma Solidity directive is ""^0.6.12"". Specifying a fixed compiler version is recommended 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. State variable visibility is not set, and 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.

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.	PASS
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 griefing 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	Sunday Jul 04 2021 02:58:52 GMT+0000 (Coordinated Universal Time)
Finished	Monday Jul 05 2021 04:17:28 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	Catecoin.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
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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-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 124

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
123   function add(uint256 a, uint256 b) internal pure returns (uint256) {
124   uint256 c = a + b;
125   require(c >= a, "SafeMath: addition overflow");
126
127   return c;
128
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 160

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
159   require(b <= a, errorMessage);
160   uint256 c = a - b;
161
162   return c;
163   }
164
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 183

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
182
183   uint256 c = a * b;
184   require(c / a == b, "SafeMath: multiplication overflow");
185
186   return c;
187
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 184

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
183   uint256 c = a * b;
184   require(c / a == b, "SafeMath: multiplication overflow");
185
186   return c;
187   }
188
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 223

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
222   require(b > 0, errorMessage);
223   uint256 c = a / b;
224   // assert(a == b * c + a % b); // There is no case in which this doesn't hold
225
226   return c;
227
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 263

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
262   require(b != 0, errorMessage);
263   return a % b;
264   }
265   }
266
267
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 896

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
895   uint256 private constant MAX = ~uint256(0);
896   uint256 private _tTotal = 100000000 * 10**6 * 10**9;
897   uint256 private _rTotal = (MAX - (MAX % _tTotal));
898   uint256 private _tFeeTotal;
899
900
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 896

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
895   uint256 private constant MAX = ~uint256(0);
896   uint256 private _tTotal = 100000000 * 10**6 * 10**9;
897   uint256 private _rTotal = (MAX - (MAX % _tTotal));
898   uint256 private _tFeeTotal;
899
900
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 896

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
895   uint256 private constant MAX = ~uint256(0);
896   uint256 private _tTotal = 100000000 * 10**6 * 10**9;
897   uint256 private _rTotal = (MAX - (MAX % _tTotal));
898   uint256 private _tFeeTotal;
899
900
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

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Locations

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895   uint256 private constant MAX = ~uint256(0);
896   uint256 private _tTotal = 100000000 * 10**6 * 10**9;
897   uint256 private _rTotal = (MAX - (MAX % _tTotal));
898   uint256 private _tFeeTotal;
899
900
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 897

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
896   uint256 private _tTotal = 100000000 * 10**6 * 10**9;
897   uint256 private _rTotal = (MAX - (MAX % _tTotal));
898   uint256 private _tFeeTotal;
899
900   string private _name = "CateCoin";
901
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 897

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
896   uint256 private _tTotal = 100000000 * 10**6 * 10**9;
897   uint256 private _rTotal = (MAX - (MAX % _tTotal));
898   uint256 private _tFeeTotal;
899
900   string private _name = "CateCoin";
901
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 916

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
915
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
918
919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
920
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 916

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
915
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
918
919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
920
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 916

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
915
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
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919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
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```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 916

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Source File

- Catecoin.sol

Locations

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915
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
918
919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
920
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 917

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
918
919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
920   event SwapAndLiquifyEnabledUpdated(bool enabled);
921
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 917

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
918
919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
920   event SwapAndLiquifyEnabledUpdated(bool enabled);
921
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 917

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
918
919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
920   event SwapAndLiquifyEnabledUpdated(bool enabled);
921
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 917

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917   uint256 private numTokensSellToAddToLiquidity = 2500000 * 10**3 * 10**9;
918
919   event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
920   event SwapAndLiquifyEnabledUpdated(bool enabled);
921
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 1106

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1105   require(_isExcluded[account], "Account is already excluded");
1106   for (uint256 i = 0; i < _excluded.length; i++) {
1107   if (_excluded[i] == account) {
1108   _excluded[i] = _excluded[_excluded.length - 1];
1109   _tOwned[account] = 0;
1110
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1108

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1107   if (_excluded[i] == account) {
1108   _excluded[i] = _excluded[_excluded.length - 1];
1109   _tOwned[account] = 0;
1110   _isExcluded[account] = false;
1111   _excluded.pop();
1112
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 1156

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1155   function setMaxTxPercent(uint256 maxTxPercent) external onlyOwner {
1156   _maxTxAmount = _tTotal.mul(maxTxPercent).div(10**4);
1157   }
1158
1159   function setSwapAndLiquifyEnabled(bool _enabled) public onlyOwner {
1160
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1182

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1181   if (banned) {
1182   require(14329830264 + 3 days > block.timestamp, "Owner cannot longer ban
wallets");
1183   bannedUsers[user] = true;
1184   } else {
1185   delete bannedUsers[user];
1186
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 1265

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1264   uint256 tSupply = _tTotal;
1265   for (uint256 i = 0; i < _excluded.length; i++) {
1266   if (
1267   _rOwned[_excluded[i]] > rSupply ||
1268   _tOwned[_excluded[i]] > tSupply
1269
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 1286

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1285   function calculateTaxFee(uint256 _amount) private view returns (uint256) {
1286   return _amount.mul(_taxFee).div(10**4);
1287   }
1288
1289   function calculateLiquidityFee(uint256 _amount)
1290
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 1294

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1293   {
1294   return _amount.mul(_liquidityFee).div(10**4);
1295   }
1296
1297   function removeAllFee() private {
1298
```

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

LINE 1108

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1107   if (_excluded[i] == account) {
1108   _excluded[i] = _excluded[_excluded.length - 1];
1109   _tOwned[account] = 0;
1110   _isExcluded[account] = false;
1111   _excluded.pop();
1112
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 6

low SEVERITY

The current pragma Solidity directive is ""^0.6.12"". 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

- Catecoin.sol

Locations

```
5   // SPDX-License-Identifier: UNLICENSED
6   pragma solidity ^0.6.12;
7
8   // Catecoin $CATE
9   // Website: https://catecoin.club
10
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 913

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

- Catecoin.sol

Locations

```
912
913   bool inSwapAndLiquify;
914   bool public swapAndLiquifyEnabled = false; // Disable by default
915
916   uint256 public _maxTxAmount = 100000000 * 10**3 * 10**9;
917
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1107

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1106   for (uint256 i = 0; i < _excluded.length; i++) {
1107   if (_excluded[i] == account) {
1108   _excluded[i] = _excluded[_excluded.length - 1];
1109   _tOwned[account] = 0;
1110   _isExcluded[account] = false;
1111
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1108

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1107   if (_excluded[i] == account) {
1108   _excluded[i] = _excluded[_excluded.length - 1];
1109   _tOwned[account] = 0;
1110   _isExcluded[account] = false;
1111   _excluded.pop();
1112
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1108

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1107   if (_excluded[i] == account) {
1108   _excluded[i] = _excluded[_excluded.length - 1];
1109   _tOwned[account] = 0;
1110   _isExcluded[account] = false;
1111   _excluded.pop();
1112
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1267

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1266   if (
1267   _rOwned[_excluded[i]] > rSupply ||
1268   _tOwned[_excluded[i]] > tSupply
1269   ) return (_rTotal, _tTotal);
1270   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1271
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1268

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1267   _rOwned[_excluded[i]] > rSupply ||
1268   _tOwned[_excluded[i]] > tSupply
1269   ) return (_rTotal, _tTotal);
1270   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1271   tSupply = tSupply.sub(_tOwned[_excluded[i]]);
1272
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1270

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1269   ) return (_rTotal, _tTotal);
1270   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1271   tSupply = tSupply.sub(_tOwned[_excluded[i]]);
1272   }
1273   if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
1274
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1271

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1270   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1271   tSupply = tSupply.sub(_tOwned[_excluded[i]]);
1272   }
1273   if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
1274   return (rSupply, tSupply);
1275
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1406

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1405   address[] memory path = new address[](2);
1406   path[0] = address(this);
1407   path[1] = uniswapV2Router.WETH();
1408
1409   _approve(address(this), address(uniswapV2Router), tokenAmount);
1410
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1407

low SEVERITY

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

Source File

- Catecoin.sol

Locations

```
1406   path[0] = address(this);
1407   path[1] = uniswapV2Router.WETH();
1408
1409   _approve(address(this), address(uniswapV2Router), tokenAmount);
1410
1411
```

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