FAT CAT

Smart Contract
Audit Report

SYSFIXED

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
FAT CAT	FATCAT	Binance Smart Chain

Addresses

Contract address	0x55493e35e33fcf811571707ac5bf1dbcb658bafc
Contract deployer address	0x992f8736641D15f33cb7B16BF949aD9E3239a978

Project Website

https://fatcat.army/

Codebase

https://bscscan.com/address/0x55493e35e33fcf811571707ac5bf1dbcb658bafc#code

SUMMARY

FATCAT Manifesto. We believe what we believe, and we will all win together. We want to build a system that relies not on new buyers coming in to keep token prices rising but on an autonomous system that continuously creates reflections regardless of recent buyers/sellers also; it will be hyper-deflationary.

Contract Summary

Documentation Quality

FAT CAT 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 FAT CAT 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 959.
- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 213, 227, 242, 243, 256, 268, 283, 297, 311, 325, 341, 364, 387, 413, 927, 927, 997, 997, 1006, 1006, 1018, 1202, 1204, 1244, 1244, 1255, 1255, 1263, 1263, 1270, 1374, 1408, 1416, 1425 and 1204.
- 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 1203, 1204, 1204, 1376, 1377, 1379, 1380, 1526 and 1527.

CONCLUSION

We have audited the FAT CAT project released on January 2023 to discover issues and identify potential security vulnerabilities in FAT CAT 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 issues found in the FAT CAT 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 state variable visibility is not set and out-of-bounds array access which the index access expression can cause an exception in case 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.	PASS
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	Thursday Nov 10 2022 20:38:56 GMT+0000 (Coordinated Universal Time)
Finished	Friday Nov 11 2022 11:09:03 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	LiquidityGeneratorToken.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	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-108	STATE VARIABLE VISIBILITY IS NOT SET.	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	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 213

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
212    unchecked {
213    uint256 c = a + b;
214    if (c < a) return (false, 0);
215    return (true, c);
216    }
217
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED
LINE 227

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
226   if (b > a) return (false, 0);
227   return (true, a - b);
228   }
229   }
230
231
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED
LINE 242

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
241   if (a == 0) return (true, 0);
242   uint256 c = a * b;
243   if (c / a != b) return (false, 0);
244   return (true, c);
245   }
246
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED
LINE 243

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
242   uint256 c = a * b;
243   if (c / a != b) return (false, 0);
244   return (true, c);
245   }
246   }
247
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED
LINE 256

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
255   if (b == 0) return (false, 0);
256   return (true, a / b);
257   }
258   }
259
260
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED
LINE 268

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
267   if (b == 0) return (false, 0);
268   return (true, a % b);
269   }
270   }
271
272
```

SYSFIXED

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 283

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

Source File
- LiquidityGeneratorToken.sol

Locations

```
282    function add(uint256 a, uint256 b) internal pure returns (uint256) {
283    return a + b;
284    }
285
286    /**
287
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED
LINE 297

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
296    function sub(uint256 a, uint256 b) internal pure returns (uint256) {
297    return a - b;
298    }
299
300    /**
301
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 311

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
310    function mul(uint256 a, uint256 b) internal pure returns (uint256) {
311    return a * b;
312    }
313
314    /**
315
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED
LINE 325

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
324    function div(uint256 a, uint256 b) internal pure returns (uint256) {
325    return a / b;
326    }
327
328    /**
329
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 341

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
340    function mod(uint256 a, uint256 b) internal pure returns (uint256) {
341    return a % b;
342    }
343
344    /**
345
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED
LINE 364

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
363   require(b <= a, errorMessage);
364   return a - b;
365   }
366   }
367
368
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED
LINE 387

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
386    require(b > 0, errorMessage);
387    return a / b;
388    }
389    }
390
391
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED
LINE 413

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
412    require(b > 0, errorMessage);
413    return a % b;
414    }
415    }
416    }
417
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED
LINE 927

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
926
927   uint256 public constant MAX_FEE = 10**4 / 4;
928
929   mapping(address => uint256) private _rOwned;
930   mapping(address => uint256) private _tOwned;
931
```

SYSFIXED

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED
LINE 927

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
926
927    uint256 public constant MAX_FEE = 10**4 / 4;
928
929    mapping(address => uint256) private _rOwned;
930    mapping(address => uint256) private _tOwned;
931
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 997

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
996    require(
997    taxFeeBps_ + liquidityFeeBps_ + charityFeeBps_ <= MAX_FEE,
998    "Total fee is over 25%"
999    );
1000
1001
```

SYSFIXED

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 997

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
996    require(
997    taxFeeBps_ + liquidityFeeBps_ + charityFeeBps_ <= MAX_FEE,
998    "Total fee is over 25%"
999    );
1000
1001
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED
LINE 1006

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

Source File
- LiquidityGeneratorToken.sol

Locations

```
1005   _tTotal = totalSupply_;
1006   _rTotal = (MAX - (MAX % _tTotal));
1007
1008   _taxFee = taxFeeBps_;
1009   _previousTaxFee = _taxFee;
1010
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED
LINE 1006

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1005    _tTotal = totalSupply_;
1006    _rTotal = (MAX - (MAX % _tTotal));
1007
1008    _taxFee = taxFeeBps_;
1009    _previousTaxFee = _taxFee;
1010
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 1018

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1017
1018    numTokensSellToAddToLiquidity = totalSupply_.div(10**3); // 0.1%
1019
1020    swapAndLiquifyEnabled = true;
1021
1022
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED
LINE 1202

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1201   require(_isExcluded[account], "Account is already excluded");
1202   for (uint256 i = 0; i < _excluded.length; i++) {
1203   if (_excluded[i] == account) {
1204   _excluded[i] = _excluded[_excluded.length - 1];
1205   _tOwned[account] = 0;
1206
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED
LINE 1204

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

Source File
- LiquidityGeneratorToken.sol

Locations

```
1203   if (_excluded[i] == account) {
1204   _excluded[i] = _excluded[_excluded.length - 1];
1205   _tOwned[account] = 0;
1206   _isExcluded[account] = false;
1207   _excluded.pop();
1208
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 1244

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1243   require(
1244   _taxFee + _liquidityFee + _charityFee <= MAX_FEE,
1245   "Total fee is over 25%"
1246   );
1247   }
1248
```

SYSFIXED

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 1244

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1243   require(
1244   _taxFee + _liquidityFee + _charityFee <= MAX_FEE,
1245   "Total fee is over 25%"
1246   );
1247   }
1248
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 1255

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1254   require(
1255   _taxFee + _liquidityFee + _charityFee <= MAX_FEE,
1256   "Total fee is over 25%"
1257   );
1258   }
1259
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1255

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1254   require(
1255   _taxFee + _liquidityFee + _charityFee <= MAX_FEE,
1256   "Total fee is over 25%"
1257   );
1258   }
1259
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 1263

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1262   require(
1263   _taxFee + _liquidityFee + _charityFee <= MAX_FEE,
1264   "Total fee is over 25%"
1265   );
1266   }
1267
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED
LINE 1263

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1262   require(
1263   _taxFee + _liquidityFee + _charityFee <= MAX_FEE,
1264   "Total fee is over 25%"
1265   );
1266   }
1267
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED
LINE 1270

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1269   require(
1270   _amount >= totalSupply().mul(5).div(10**4),
1271   "Swapback amount should be at least 0.05% of total supply"
1272   );
1273   numTokensSellToAddToLiquidity = _amount;
1274
```

SYSFIXED

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED
LINE 1374

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1373   uint256 tSupply = _tTotal;
1374   for (uint256 i = 0; i < _excluded.length; i++) {
1375   if (
1376   _rOwned[_excluded[i]] > rSupply ||
1377   _tOwned[_excluded[i]] > tSupply
1378
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 1408

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1407    function calculateTaxFee(uint256 _amount) private view returns (uint256) {
1408    return _amount.mul(_taxFee).div(10**4);
1409    }
1410
1411    function calculateLiquidityFee(uint256 _amount)
1412
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED
LINE 1416

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1415    {
1416    return _amount.mul(_liquidityFee).div(10**4);
1417    }
1418
1419    function calculateCharityFee(uint256 _amount)
1420
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED
LINE 1425

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1424    if (_charityAddress == address(0)) return 0;
1425    return _amount.mul(_charityFee).div(10**4);
1426    }
1427
1428    function removeAllFee() private {
1429
```

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

LINE 1204

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1203   if (_excluded[i] == account) {
1204   _excluded[i] = _excluded[_excluded.length - 1];
1205   _tOwned[account] = 0;
1206   _isExcluded[account] = false;
1207   _excluded.pop();
1208
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.
LINE 959

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

- LiquidityGeneratorToken.sol

Locations

```
958
959    bool inSwapAndLiquify;
960    bool public swapAndLiquifyEnabled;
961
962    uint256 private numTokensSellToAddToLiquidity;
963
```

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SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1203

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1202   for (uint256 i = 0; i < _excluded.length; i++) {
1203   if (_excluded[i] == account) {
1204   _excluded[i] = _excluded[_excluded.length - 1];
1205   _tOwned[account] = 0;
1206   _isExcluded[account] = false;
1207
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1204

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1203   if (_excluded[i] == account) {
1204   _excluded[i] = _excluded[_excluded.length - 1];
1205   _tOwned[account] = 0;
1206   _isExcluded[account] = false;
1207   _excluded.pop();
1208
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1204

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1203    if (_excluded[i] == account) {
1204    _excluded[i] = _excluded[_excluded.length - 1];
1205    _tOwned[account] = 0;
1206    _isExcluded[account] = false;
1207    _excluded.pop();
1208
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1376

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1375    if (
1376    _rOwned[_excluded[i]] > rSupply ||
1377    _tOwned[_excluded[i]] > tSupply
1378    ) return (_rTotal, _tTotal);
1379    rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1380
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1377

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

Source File
- LiquidityGeneratorToken.sol

Locations

```
1376    _rOwned[_excluded[i]] > rSupply ||
1377    _tOwned[_excluded[i]] > tSupply
1378    ) return (_rTotal, _tTotal);
1379    rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1380    tSupply = tSupply.sub(_tOwned[_excluded[i]]);
1381
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1379

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

Source File
- LiquidityGeneratorToken.sol

Locations

```
1378   ) return (_rTotal, _tTotal);
1379   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1380   tSupply = tSupply.sub(_tOwned[_excluded[i]]);
1381   }
1382   if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
1383
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1380

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1379    rSupply = rSupply.sub(_rOwned[_excluded[i]]);
1380    tSupply = tSupply.sub(_tOwned[_excluded[i]]);
1381    }
1382    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
1383    return (rSupply, tSupply);
1384
```

SYSFIXED

SWC-110 | OUT OF BOUNDS ARRAY ACCESS
LINE 1526

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1525   address[] memory path = new address[](2);
1526   path[0] = address(this);
1527   path[1] = uniswapV2Router.WETH();
1528
1529   _approve(address(this), address(uniswapV2Router), tokenAmount);
1530
```

SYSFIXED

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1527

low SEVERITY

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

Source File

- LiquidityGeneratorToken.sol

Locations

```
1526    path[0] = address(this);
1527    path[1] = uniswapV2Router.WETH();
1528
1529    _approve(address(this), address(uniswapV2Router), tokenAmount);
1530
1531
```

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