



ShibCrush

# Smart Contract Audit Report

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# AUDITED DETAILS

## Audited Project

Project name	Token ticker	Blockchain
ShibCrush	SCRS	Ethereum

## Addresses

Contract address	0x1508b7f0a27D2715A3DfA8D6Eab279F5a74e0c5D
Contract deployer address	0xDf28a172aEBa01234FD1FbF07e2A5DF4B1333264

## Project Website

<https://shibcrush.com/>

## Codebase

<https://etherscan.io/address/0x1508b7f0a27D2715A3DfA8D6Eab279F5a74e0c5D#code>

# SUMMARY

ShibCrush is a token meme running on the Ethereum network with an excellent puzzle game utility, made for the ShibCrush community to play and enjoy free time, aiming at users getting the best score and being the owner of the highest score.

## Contract Summary

### Documentation Quality

ShibCrush 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 ShibCrush 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 411 and 434.
- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 39, 51, 61, 62, 73, 85, 419, 419, 427, 427, 428, 428, 429, 429, 467, 467, 468, 468, 469 and 469.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 10.
- 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 719 and 720.

# CONCLUSION

We have audited the ShibCrush project released on February 2023 to discover issues and identify potential security vulnerabilities in ShibCrushProject. 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 ShibCrush 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, 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. For "a state variable visibility is not set" can be specified as being public, internal, or private. Explicitly define visibility for all state variables.

# 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 <code>abi.encodePacked()</code> with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The <code>transfer()</code> and <code>send()</code> 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





SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
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SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-108	STATE VARIABLE VISIBILITY IS NOT SET.	low	acknowledged
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SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
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# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 39

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
38  function add(uint256 a, uint256 b) internal pure returns (uint256) {
39  uint256 c = a + b;
40  require(c >= a, "SafeMath: addition overflow");
41
42  return c;
43
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 51

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
50  require(b <= a, errorMessage);
51  uint256 c = a - b;
52
53  return c;
54  }
55
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 61

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

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

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 62

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
61  uint256 c = a * b;  
62  require(c / a == b, "SafeMath: multiplication overflow");  
63  
64  return c;  
65  }  
66
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 73

## low SEVERITY

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

## Source File

- PROTOOLSGSC.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

- PROTOOLSGSC.sol

## Locations

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



# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 419

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
418
419     uint256 private minimumTokensBeforeSwap = 100 * 10**_decimals;
420     uint256 private _buyTeamFee = 1;
421     uint256 private _sellTeamFee = 1;
422
423
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 419

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
418
419     uint256 private minimumTokensBeforeSwap = 100 * 10**_decimals;
420     uint256 private _buyTeamFee = 1;
421     uint256 private _sellTeamFee = 1;
422
423
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 427

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
426
427  uint256 private _totalTaxIfBuying = _buyLiquidityFee + _buyMarketingFee +
    _buyTeamFee;
428  uint256 private _totalTaxIfSelling = _sellLiquidityFee + _sellMarketingFee +
    _sellTeamFee;
429  uint256 private _totalDistributionShares = _liquidityShare + _marketingShare +
    _teamShare;
430
431
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 427

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
426
427  uint256 private _totalTaxIfBuying = _buyLiquidityFee + _buyMarketingFee +
    _buyTeamFee;
428  uint256 private _totalTaxIfSelling = _sellLiquidityFee + _sellMarketingFee +
    _sellTeamFee;
429  uint256 private _totalDistributionShares = _liquidityShare + _marketingShare +
    _teamShare;
430
431
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 428

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
427 uint256 private _totalTaxIfBuying = _buyLiquidityFee + _buyMarketingFee +  
_buyTeamFee;  
428 uint256 private _totalTaxIfSelling = _sellLiquidityFee + _sellMarketingFee +  
_sellTeamFee;  
429 uint256 private _totalDistributionShares = _liquidityShare + _marketingShare +  
_teamShare;  
430  
431 IUniswapV2Router02 public uniswapV2Router;  
432
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 428

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
427 uint256 private _totalTaxIfBuying = _buyLiquidityFee + _buyMarketingFee +  
_buyTeamFee;  
428 uint256 private _totalTaxIfSelling = _sellLiquidityFee + _sellMarketingFee +  
_sellTeamFee;  
429 uint256 private _totalDistributionShares = _liquidityShare + _marketingShare +  
_teamShare;  
430  
431 IUniswapV2Router02 public uniswapV2Router;  
432
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 429

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
428  uint256 private _totalTaxIfSelling = _sellLiquidityFee + _sellMarketingFee +
    _sellTeamFee;
429  uint256 private _totalDistributionShares = _liquidityShare + _marketingShare +
    _teamShare;
430
431  IUniswapV2Router02 public uniswapV2Router;
432  address public uniswapPair;
433
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 429

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
428  uint256 private _totalTaxIfSelling = _sellLiquidityFee + _sellMarketingFee +
    _sellTeamFee;
429  uint256 private _totalDistributionShares = _liquidityShare + _marketingShare +
    _teamShare;
430
431  IUniswapV2Router02 public uniswapV2Router;
432  address public uniswapPair;
433
```



# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 467

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
466 marketingWalletAddress = payable(userinput_marketingWallet);
467 _totalSupply = userinput_totalsupply * 10**_decimals;
468 _maxTxAmount = userinput_max_tx * 10**_decimals;
469 _walletMax = userinput_walletMax * 10**_decimals;
470 _buyLiquidityFee = userinput_buyliquidityfee;
471
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 467

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
466 marketingWalletAddress = payable(userinput_marketingWallet);
467 _totalSupply = userinput_totalsupply * 10**_decimals;
468 _maxTxAmount = userinput_max_tx * 10**_decimals;
469 _walletMax = userinput_walletMax * 10**_decimals;
470 _buyLiquidityFee = userinput_buyliquidityfee;
471
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 468

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
467 _totalSupply = userInput_totalsupply * 10**_decimals;
468 _maxTxAmount = userInput_max_tx * 10**_decimals;
469 _walletMax = userInput_walletMax * 10**_decimals;
470 _buyLiquidityFee = userInput_buyliquidityfee;
471 _buyMarketingFee = userInput_buymarketingfee;
472
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 468

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
467 _totalSupply = userInput_totalsupply * 10**_decimals;  
468 _maxTxAmount = userInput_max_tx * 10**_decimals;  
469 _walletMax = userInput_walletMax * 10**_decimals;  
470 _buyLiquidityFee = userInput_buyliquidityfee;  
471 _buyMarketingFee = userInput_buymarketingfee;  
472
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 469

### low SEVERITY

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

### Source File

- PROTOOLSGSC.sol

### Locations

```
468 _maxTxAmount = userInput_max_tx * 10**_decimals;
469 _walletMax = userInput_walletMax * 10**_decimals;
470 _buyLiquidityFee = userInput_buyliquidityfee;
471 _buyMarketingFee = userInput_buymarketingfee;
472 _sellLiquidityFee = userInput_sellliquidityfee;
473
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 469

## low SEVERITY

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

## Source File

- PROTOOLSGSC.sol

## Locations

```
468 _maxTxAmount = userInput_max_tx * 10**_decimals;  
469 _walletMax = userInput_walletMax * 10**_decimals;  
470 _buyLiquidityFee = userInput_buyliquidityfee;  
471 _buyMarketingFee = userInput_buymarketingfee;  
472 _sellLiquidityFee = userInput_sellliquidityfee;  
473
```

## SWC-103 | A FLOATING PRAGMA IS SET.

LINE 10

### 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

- PROTOOLSGSC.sol

### Locations

```
9 // SPDX-License-Identifier: Unlicensed
10 pragma solidity ^0.8.7;
11
12 abstract contract Context {
13
14
```

## SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 411

### low SEVERITY

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

### Source File

- PROTOOLSGSC.sol

### Locations

```
410
411 mapping (address => uint256) _balances;
412 mapping (address => mapping (address => uint256)) private _allowances;
413
414 mapping (address => bool) private isExcludedFromFee;
415
```



## SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 434

### 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

- PROTOOLSGSC.sol

### Locations

```
433
434  bool inSwapAndLiquify;
435  bool private swapAndLiquifyEnabled = true;
436  bool private swapAndLiquifyByLimitOnly = false;
437  bool private checkWalletLimit = true;
438
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 719

### low SEVERITY

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

### Source File

- PROTOOLSGSC.sol

### Locations

```
718     address[] memory path = new address[](2);
719     path[0] = address(this);
720     path[1] = uniswapV2Router.WETH();
721
722     _approve(address(this), address(uniswapV2Router), tokenAmount);
723
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 720

### low SEVERITY

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

### Source File

- PROTOOLSGSC.sol

### Locations

```
719 path[0] = address(this);
720 path[1] = uniswapV2Router.WETH();
721
722 _approve(address(this), address(uniswapV2Router), tokenAmount);
723
724
```

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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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