

TwitVi Smart Contract Audit Report



05 Feb 2023



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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain	
TwitVi	TWV	Binance Smart Chain	

Addresses

Contract address	0x4392a96Fec68E162471793db631972ccAf80FE1C
Contract deployer address	0x8A0aEABF90Baa71df59114B60706e14E60E37A97

Project Website

https://twitvi.com/

Codebase

https://bscscan.com/address/0x4392a96Fec68E162471793db631972ccAf80FE1C#code



SUMMARY

TwitVi is a Web3 social networking service with GameFi functionality. Users reserve NFTs featuring bird designs; tweeting on Twitter using #TwitVi earns in-game tokens that can be used in-game or cashed in for profit. twitVi encourages people from all over the world to interact with each other.

Contract Summary

Documentation Quality

TwitVi 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 TwitVi with the discovery of several low issues.

Test Coverage

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

Audit Findings Summary

- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 632, 654, 680, 797, 813, 835, 836, 849, 851, 866, 867, 899, 1023, 1023, 1028, 1032, 1033, 1178, 1178, 1180, 1180, 1183, 1207, 1209 and 1209.
- 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 1196 and 1197.



CONCLUSION

We have audited the TwitVi project released on February-2023 to discover issues and identify potential security vulnerabilities in TwitVi 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 TwitVi 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, tx.origin as a part of authorization control 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.	PASS	
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.		
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	n pattern should be followed PASS cursive call.	
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.		
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach aISfailing assert statement.FC		
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.	
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	
Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	
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.	
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.	
Shadowing State Variable	SWC-119	State variables should not be shadowed.	
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	
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.	
Incorrect Inheritance Order	SWC-125	125When 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/.P	
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.	
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	



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.	
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.	
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	





SMART CONTRACT ANALYSIS

Started	Saturday Feb 04 2023 13:20:28 GMT+0000 (Coordinated Universal Time)			
Finished	Sunday Feb 05 2023 02:07:31 GMT+0000 (Coordinated Universal Time)			
Mode	Standard			
Main Source File	TwitVi.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-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged



LINE 632

Iow SEVERITY

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

Source File

- TwitVi.sol

Locations

631) internal {
632 uint256 newAllowance = token.allowance(address(this), spender) + value;
633 _callOptionalReturn(
634 token,
635 abi.encodeWithSelector(
636



LINE 654

Iow SEVERITY

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

Source File

- TwitVi.sol

Locations

653); 654 uint256 newAllowance = oldAllowance - value; 655 _callOptionalReturn(656 token, 657 abi.encodeWithSelector(658



LINE 680

Iow SEVERITY

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

Source File

- TwitVi.sol

```
679 require(
680 nonceAfter == nonceBefore + 1,
681 "SafeERC20: permit did not succeed"
682 );
683 }
684
```



LINE 797

Iow SEVERITY

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

Source File

- TwitVi.sol

```
796 address owner = _msgSender();
797 _approve(owner, spender, allowance(owner, spender) + addedValue);
798 return true;
799 }
800
801
```



LINE 813

Iow SEVERITY

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

Source File

- TwitVi.sol

```
812 unchecked {
813 _approve(owner, spender, currentAllowance - subtractedValue);
814 }
815
816 return true;
817
```



LINE 835

Iow SEVERITY

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

Source File

- TwitVi.sol

```
834 unchecked {
835 _balances[from] = fromBalance - amount;
836 _balances[to] += amount;
837 }
838
839
```



LINE 836

Iow SEVERITY

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

Source File

- TwitVi.sol

```
835 _balances[from] = fromBalance - amount;
836 _balances[to] += amount;
837 }
838
839 emit Transfer(from, to, amount);
840
```



LINE 849

Iow SEVERITY

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

Source File

- TwitVi.sol

```
848
849 _totalSupply += amount;
850 unchecked {
851 _balances[account] += amount;
852 }
853
```



LINE 851

Iow SEVERITY

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

Source File

- TwitVi.sol

```
850 unchecked {
851 _balances[account] += amount;
852 }
853 emit Transfer(address(0), account, amount);
854
855
```



LINE 866

Iow SEVERITY

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

Source File

- TwitVi.sol

```
865 unchecked {
866 _balances[account] = accountBalance - amount;
867 _totalSupply -= amount;
868 }
869
870
```



LINE 867

Iow SEVERITY

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

Source File

- TwitVi.sol

```
866 _balances[account] = accountBalance - amount;
867 _totalSupply -= amount;
868 }
869
870 emit Transfer(account, address(0), amount);
871
```



LINE 899

Iow SEVERITY

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

Source File

- TwitVi.sol

```
898 unchecked {
899 _approve(owner, spender, currentAllowance - amount);
900 }
901 }
902 }
903
```



LINE 1023

Iow SEVERITY

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

Source File

- TwitVi.sol

Locations

1022 constructor() ERC20("TwitVi", "TWV") {
1023 __mint(owner(), 100_000_000 * (10**18));
1024
1025 taxDenominator = 100;
1026 buyTax = 0;
1027



LINE 1023

Iow SEVERITY

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

Source File

- TwitVi.sol

Locations

1022 constructor() ERC20("TwitVi", "TWV") {
1023 __mint(owner(), 100_000_000 * (10**18));
1024
1025 taxDenominator = 100;
1026 buyTax = 0;
1027



LINE 1028

Iow SEVERITY

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

Source File

- TwitVi.sol

Locations

1027 sellTax = 2; 1028 totalTax = buyTax + sellTax; 1029 1030 marketingWalletShares = 100; 1031 1032





LINE 1032

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1031
1032 setSwapTokensLimit = totalSupply() / 1_000_000; // 0.0001% of Total Supply
1033 swapTokensAtAmount = totalSupply() / 2000; // 0.05% of Total Supply
1034 isSwapBackEnabled = true;
1035
1036
```



LINE 1033

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1032 setSwapTokensLimit = totalSupply() / 1_000_000; // 0.0001% of Total Supply
1033 swapTokensAtAmount = totalSupply() / 2000; // 0.05% of Total Supply
1034 isSwapBackEnabled = true;
1035
1036 address router = getRouterAddress();
1037
```



LINE 1178

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1177 if (_isAutomatedMarketMakerPair[from]) {
1178 fees = (amount * buyTax) / taxDenominator;
1179 } else if (_isAutomatedMarketMakerPair[to]) {
1180 fees = (amount * sellTax) / taxDenominator;
1181 }
1182
```



LINE 1178

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1177 if (_isAutomatedMarketMakerPair[from]) {
1178 fees = (amount * buyTax) / taxDenominator;
1179 } else if (_isAutomatedMarketMakerPair[to]) {
1180 fees = (amount * sellTax) / taxDenominator;
1181 }
1182
```



LINE 1180

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1179 } else if (_isAutomatedMarketMakerPair[to]) {
1180 fees = (amount * sellTax) / taxDenominator;
1181 }
1182
1183 amount = amount - fees;
1184
```





LINE 1180

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1179 } else if (_isAutomatedMarketMakerPair[to]) {
1180 fees = (amount * sellTax) / taxDenominator;
1181 }
1182
1183 amount = amount - fees;
1184
```



LINE 1183

Iow SEVERITY

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

Source File

- TwitVi.sol

Locations

1182
1183 amount = amount - fees;
1184
1185 super._transfer(from, address(this), fees);
1186 }
1187



LINE 1207

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1206
1207 uint256 newBalance = address(this).balance - initialBalance;
1208
1209 uint256 marketingShare = (newBalance * marketingWalletShares) / 100;
1210
1211
```



LINE 1209

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1208
1209 uint256 marketingShare = (newBalance * marketingWalletShares) / 100;
1210
1211 if (marketingShare > 0) {
1212 sendBNB(marketingWallet, marketingShare);
1213
```



LINE 1209

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1208
1209 uint256 marketingShare = (newBalance * marketingWalletShares) / 100;
1210
1211 if (marketingShare > 0) {
1212 sendBNB(marketingWallet, marketingShare);
1213
```



SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1196

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1195 address[] memory path = new address[](2);
1196 path[0] = address(this);
1197 path[1] = uniswapV2Router.WETH();
1198
1199 uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
1200
```



SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1197

Iow SEVERITY

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

Source File

- TwitVi.sol

```
1196 path[0] = address(this);
1197 path[1] = uniswapV2Router.WETH();
1198
1199 uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
1200 tokenAmount,
1201
```



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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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