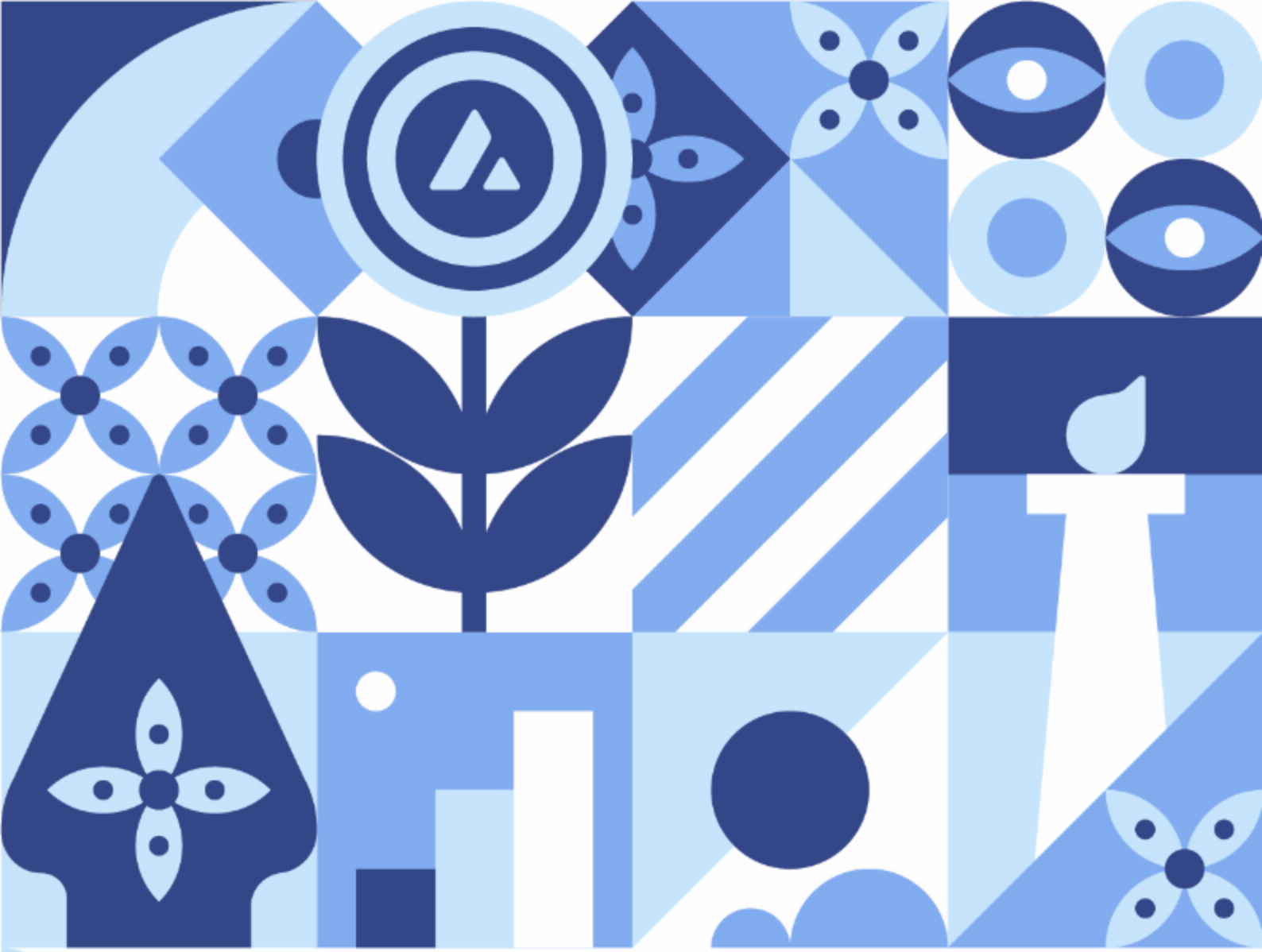

Avaxtars Token

Smart Contract Audit Report

SYSFIXED

15 Jun 2021

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Avaxtars Token	AVXT	Avalanche

Addresses

Contract address	0x397bbd6a0e41bdf4c3f971731e180db8ad06ebc1
Contract deployer address	0x50423E551035F9F920089c2a23b225dC0d995d58

Project Website

https://avaxtars.com/

Codebase

https://snowtrace.io/address/0x397bbd6a0e41bdf4c3f971731e180db8ad06ebc1#code

SUMMARY

Avaxtars is a Browser Based Idle Sci-Fi Game on Blockchain. AVAXTARS is an abbreviation of AVAX Stars. AVAX is the name of the main coin of the Avalanche blockchain platform where Avaxtars was launched on. Avaxtars is the first browser based Play to Earn (P2E) idle game on Avalanche platform.

Contract Summary

Documentation Quality

Avaxtars Token provides a very poor documentation with standard of solidity base code.

- The technical description is provided unclear and disorganized.

Code Quality

The Overall quality of the basecode is poor.

- Solidity basecode and rules are unclear and disorganized by Avaxtars Token.

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 790 and 791.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 12, 38, 117, 333 and 640.
- SWC-127 | A developer should not allow a user to assign arbitrary values to function type variables on lines 851.

CONCLUSION

We have audited the Avaxtars Token project released in June 2021 to discover issues and identify potential security vulnerabilities in Avaxtars 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 gave unsatisfactory results with the discovery of high-risk issues and several other low-risk issues.

The issues found in the Avaxtars 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 and high-risk issues found are the caller can redirect execution to arbitrary bytecode locations, a floating pragma is set, a state variable visibility is not set. It is possible to redirect the control flow to arbitrary locations in the code. This may allow an attacker to bypass security controls or manipulate the business logic of the smart contract. Avoid using low-level-operations and assembly to prevent this issue.

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.	PASS
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.	PASS
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.	ISSUE FOUND

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	Monday Jun 14 2021 21:59:20 GMT+0000 (Coordinated Universal Time)
Finished	Tuesday Jun 15 2021 11:52:15 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	TestToken.sol

Detected Issues

ID	Title	Severity	Status
SWC-127	THE CALLER CAN REDIRECT EXECUTION TO ARBITRARY BYTECODE LOCATIONS.	high	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-108	STATE VARIABLE VISIBILITY IS NOT SET.	low	acknowledged
SWC-108	STATE VARIABLE VISIBILITY IS NOT SET.	low	acknowledged

SWC-127 | THE CALLER CAN REDIRECT EXECUTION TO ARBITRARY BYTECODE LOCATIONS.

LINE 851

high SEVERITY

It is possible to redirect the control flow to arbitrary locations in the code. This may allow an attacker to bypass security controls or manipulate the business logic of the smart contract. Avoid using low-level-operations and assembly to prevent this issue.

Source File

- TestToken.sol

Locations

```
850
851   function recoverSigner(bytes32 message, bytes memory sig)
852   public
853   pure
854   returns (address)
855
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 12

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<0.8.0"". 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

- TestToken.sol

Locations

```
11
12  pragma solidity >=0.6.0 <0.8.0;
13
14  /*
15  * @dev Provides information about the current execution context, including the
16
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 38

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<0.8.0"". 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

- TestToken.sol

Locations

```
37
38   pragma solidity >=0.6.0 <0.8.0;
39
40   /**
41   * @dev Interface of the ERC20 standard as defined in the EIP.
42
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 117

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<0.8.0"". 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

- TestToken.sol

Locations

```
116
117   pragma solidity >=0.6.0 <0.8.0;
118
119   /**
120   * @dev Wrappers over Solidity's arithmetic operations with added overflow
121
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 333

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<0.8.0"". 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

- TestToken.sol

Locations

```
332
333   pragma solidity >=0.6.0 <0.8.0;
334
335
336
337
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 640

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<0.8.0"". 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

- TestToken.sol

Locations

```
639
640   pragma solidity >=0.6.0 <0.8.0;
641
642   /**
643   * @dev Contract module which provides a basic access control mechanism, where
644
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 790

low SEVERITY

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

Source File

- TestToken.sol

Locations

```
789   // MinterAddress which would eventually be set to address(0)
790   address minterAddress;
791   address signer;
792
793   mapping(uint => bool) public executed;
794
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 791

low SEVERITY

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

Source File

- TestToken.sol

Locations

```
790   address minterAddress;
791   address signer;
792
793   mapping(uint => bool) public executed;
794
795
```

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