GRAIN

Smart Contract Audit Report

SYSFIXED

23 Sep 2022

TABLE OF CONTENTS

AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
GRAIN	grain	Binance Smart Chain

Addresses

Contract address	0x1c73c9a44b3023134f7eac7ab30e9ab5a4615a76
Contract deployer address	0x763577A9E0F5cd1FF4a8667ec8cf878A4b29Db24

Project Website

https://ggoose.farm/

Codebase

https://bscscan.com/address/0x1c73c9a44b3023134f7eac7ab30e9ab5a4615a76#code

SUMMARY

GGoose (Golden Goose) is a community driven project focused on life-education using the famous fable from Aesop; "The Goose that laid the Golden Eggs". Our focus is to leave a mark on the NFT space by making a positive impact on the world. We want to make NFT accessible to most people at a much reduced price point. This will entitle you to the "Wild Goose Chase" event that will take place in the historical city of Malacca, a GGoose token, its utility and involvement in life-education! This is just phase 1, phase 2 will blow your minds as we prepare you for more adventures ahead.

Contract Summary

Documentation Quality

GRAIN 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 GRAIN with the discovery of several low issues.

Test Coverage

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

Audit Findings Summary

- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 8, 1545, 1591, 1661, 1859, 1941, 1981, 2011, 2039, 2083, 2228, 2257, 2718, 2746, 2891, 2899, 2926, 3003, 3032, 3117, 3147, 3532, 3994, 4438, 4666 and 5337.

CONCLUSION

We have audited the GRAIN project released on September 2022 to discover issues and identify potential security vulnerabilities in GRAIN 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 GRAIN 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 issue found is a floating pragma is set. The current pragma Solidity directive is "">=0.4.220.9.0"". 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.

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.	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.	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 Sep 22 2022 08:12:39 GMT+0000 (Coordinated Universal Time)
Finished	Friday Sep 23 2022 13:52:43 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	GrainV1.sol

Detected Issues

ID	Title	Severity	Status
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
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SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 8

low SEVERITY

The current pragma Solidity directive is ""=0.4.22<0.9.0"". 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

- GrainV1.sol

Locations

```
7
8   pragma solidity >= 0.4.22 <0.9.0;
9
10   library console {
11   address constant CONSOLE_ADDRESS =
address(0x000000000000000000636F6e736F6c652e6c6f67);
12
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1545

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
1544
1545   pragma solidity ^0.8.0;
1546
1547   /**
1548   * @title Counters
1549
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1591

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
1590
1591   pragma solidity ^0.8.0;
1592
1593   /**
1594   * @dev String operations.
1595
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1661

low SEVERITY

The current pragma Solidity directive is ""^0.8.1"". 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

- GrainV1.sol

Locations

```
1660
1661   pragma solidity ^0.8.1;
1662
1663   /**
1664   * @dev Collection of functions related to the address type
1665
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1859

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
1858
1859   pragma solidity ^0.8.0;
1860
1861
1862   /**
1863
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1941

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
1940
1941   pragma solidity ^0.8.0;
1942
1943
1944   /**
1945
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1981

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
1980
1981   pragma solidity ^0.8.0;
1982
1983   /**
1984   * @title ERC721 token receiver interface
1985
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2011

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2010
2011   pragma solidity ^0.8.0;
2012
2013   /**
2014   * @dev Interface of the ERC165 standard, as defined in the
2015
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2039

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2038
2039   pragma solidity ^0.8.0;
2040
2041
2042
2043
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2083

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2082
2083   pragma solidity ^0.8.0;
2084
2085
2086   /**
2087
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2228

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2227
2228   pragma solidity ^0.8.0;
2229
2230
2231   /**
2232
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2257

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2256
2257   pragma solidity ^0.8.0;
2258
2259
2260
2261
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2718

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2717
2718   pragma solidity ^0.8.0;
2719
2720   /**
2721   * @dev Interface of the ERC165 standard, as defined in the
2722
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2746

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2745
2746   pragma solidity ^0.8.0;
2747
2748
2749   /**
2750
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2891

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2890
2891   pragma solidity ^0.8.0;
2892
2893
2894   // File: @openzeppelin/contracts/utils/Context.sol
2895
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2899

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2898
2899   pragma solidity ^0.8.0;
2900
2901   /**
2902   * @dev Provides information about the current execution context, including the
2903
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 2926

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
2925
2926   pragma solidity ^0.8.0;
2927
2928
2929   /**
2930
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 3003

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
3002
3003   pragma solidity ^0.8.0;
3004
3005
3006   contract Authorizable is Ownable {
3007
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 3032

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
3031
3032   pragma solidity ^0.8.0;
3033
3034   /**
3035   * @dev Interface of the ERC20 standard as defined in the EIP.
3036
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 3117

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
3116
3117   pragma solidity ^0.8.0;
3118
3119
3120   /**
3121
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 3147

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
3146
3147   pragma solidity ^0.8.0;
3148
3149
3150
3151
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 3532

low SEVERITY

The current pragma Solidity directive is ""=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

- GrainV1.sol

Locations

```
3531
3532   pragma solidity >=0.8.0;
3533
3534
3535
3536
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 3994

low SEVERITY

The current pragma Solidity directive is ""=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

- GrainV1.sol

Locations

```
3993
3994   pragma solidity >=0.8.0;
3995
3996
3997
3998
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 4438

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
4437
4438   pragma solidity ^0.8.0;
4439
4440   // CAUTION
4441   // This version of SafeMath should only be used with Solidity 0.8 or later,
4442
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 4666

low SEVERITY

The current pragma Solidity directive is ""^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

- GrainV1.sol

Locations

```
4665
4666   pragma solidity ^0.8.0;
4667
4668
4669
4670
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 5337

low SEVERITY

The current pragma Solidity directive is ""=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

- GrainV1.sol

Locations

```
5336
5337   pragma solidity >=0.8.0;
5338
5339
5340
5341
```

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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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