CFG NINJA AUDITS

Security Assessment

Web3Farming Contract

April 20, 2023

Audit Status: Pass

Audit Edition: Advance

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Assessment Summary

This report has been prepared for Web3Farming Contract on the Binance Smart Chain network. CFGNINJA provides both client-centered and user-centered examination of the smart contracts and their current status when applicable. This report represents the security assessment made to find issues and vulnerabilities on the source code along with the current liquidity and token holder statistics of the protocol.

A comprehensive examination has been performed, utilizing Cross Referencing, Static Analysis, In-House Security Tools, and line-by-line Manual Review.

The auditing process pays special attention to the following considerations:

- Testing the smart contracts against both common and uncommon attack vectors.
- Inspecting liquidity and holders statistics to inform the current status to both users and client when applicable.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Verifying contract functions that allow trusted and/or untrusted actors to mint, lock, pause, and transfer assets.
- Cross referencing contract structure and implementation against similar smart contracts produced by industry leaders
- Thorough line-by-line manual review of the entire codebase by industry experts.

Project Overview

Token Summary

Parameter	Result
Address	0x7f8f18e427539667AAF25e9E071C3AC57AD68819
Name	Web3Farming
Token Tracker	Web3Farming (Staking)
Decimals	0
Supply	0
Platform	Binance Smart Chain
compiler	v0.8.17+commit.8df45f5f/Zsolcv1.3.7
Contract Name	web3FarmingBnb
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://bscscan.com/address/0x7f8f18e427539667aaf25e9e071c3ac57ad68819#code
Payment Tx	0x7c01448176f2e9c940183803a4b648038cc99df24f0b796575b3ddf549ebe89f

MainNet Contract was Not Assessed

TestNet Contract Assessed
Contract Name

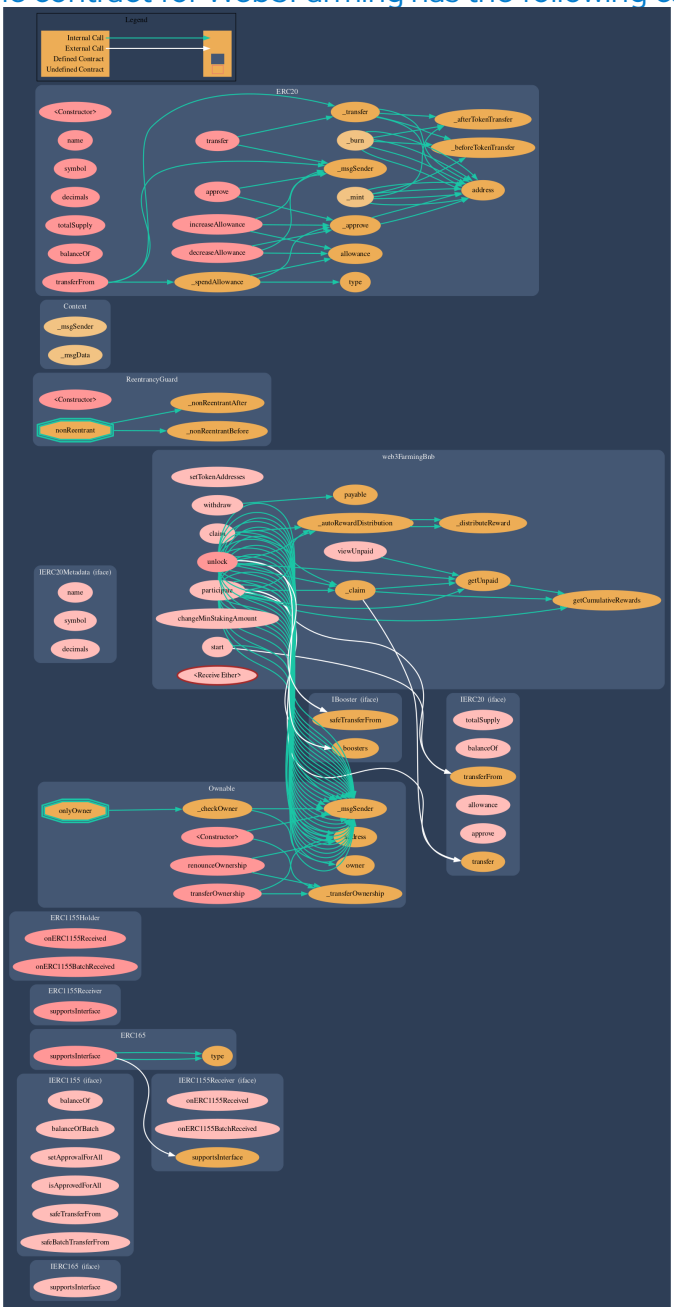
Name	Contract	Live
Web3Farming	0x6BbEBae8E93CaD7696f30C8C4f43f00BB87C21b8	No

Solidity Code Provided

SolID	File Sha-1	FileName
Web3FarmingBNB	92d2a10e4bb51a3bf8b45bf99c14de81566a52f8	web3farmingbnb.sol
Web3FarmingBNB		
Web3FarmingBNB		
Web3FarmingBNB		
Web3FarmingBNB		
Web3FarmingBNB		

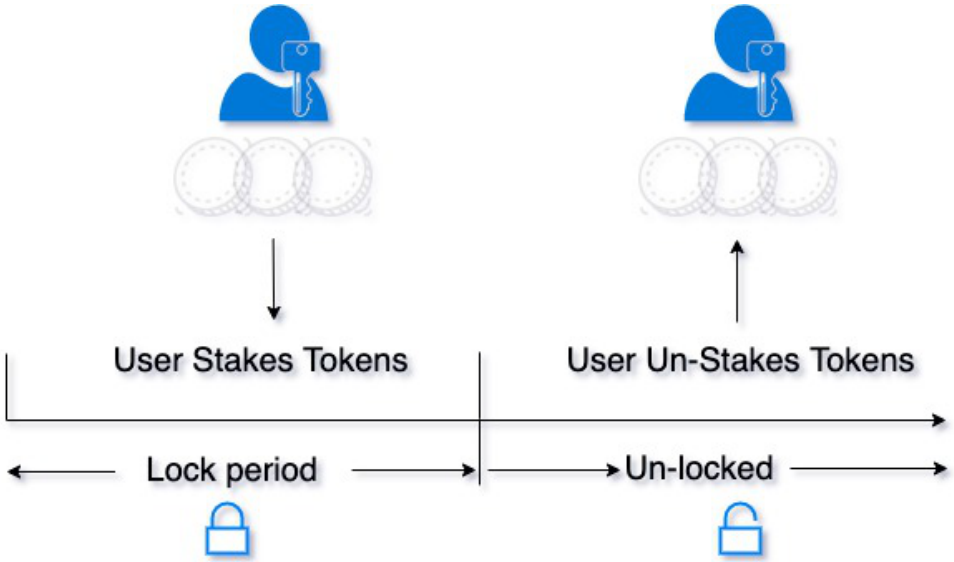
Call Graph

The contract for Web3Farming has the following call graph structure.



What is a Staking Contract

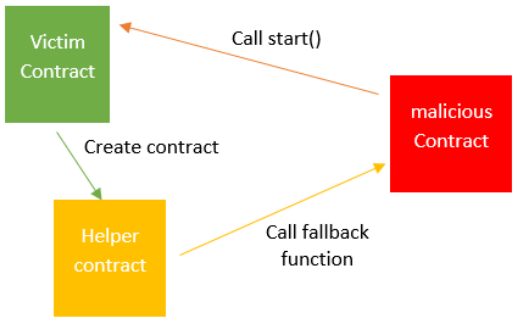
A smart contract which allows users to stake and un-stake a specified ERC20 token. Staked tokens are locked for a specific length of time (set by the contrat owner at the outset). Once the time period has elapsed, the user can remove their tokens again.



The Project Owners of Web3Farming have implemented Reentrancy Guard Library

The Team has done a great job to avoid potential reentrancy issues in the contract.

You can read more about the reentrancy library used.
ReentrancyGuard



KYC Information

The Project Owners of Web3Farming have provided KYC Documentation.

KYC Certificated can be found on the Following: KYC Data

KYC Information Notes:

Auditor Notes: KYC to be completed by PinkSale, project will be a SAFU Project.

Project Owner Notes:

Smart Contract Vulnerability Checks

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) while overlaying a wide range of weakness variants that are specific to smart contracts.

ID	Severity	Name	File	location
SWC-100	Pass	Function Default Visibility	web3farmingbnb.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	web3farmingbnb.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	web3farmingbnb.sol	L: 0 C: 0
SWC-103	Low	A floating pragma is set.	web3farmingbnb.sol	L: 10 C: 0
SWC-104	Pass	Unchecked Call Return Value.	web3farmingbnb.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	web3farmingbnb.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	web3farmingbnb.sol	L: 0 C: 0
SWC-107	Low	Read of persistent state following external call.	web3farmingbnb.sol	L: 1274 C: 26
SWC-108	Pass	State variable visibility is not set..	web3farmingbnb.sol	L: 0 C: 0
SWC-109	Pass	Uninitialized Storage Pointer.	web3farmingbnb.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	web3farmingbnb.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-111	Pass	Use of Deprecated Solidity Functions.	web3farmingbnb.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	web3farmingbnb.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	web3farmingbnb.sol	L: 0 C: 0
SWC-114	Pass	Transaction Order Dependence.	web3farmingbnb.sol	L: 0 C: 0
SWC-115	Pass	Authorization through tx.origin.	web3farmingbnb.sol	L: 0 C: 0
SWC-116	Low	A control flow decision is made based on The block.timestamp environment variable.	web3farmingbnb.sol	L: 1234 C: 12
SWC-117	Pass	Signature Malleability.	web3farmingbnb.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	web3farmingbnb.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	web3farmingbnb.sol	L: 0 C: 0
SWC-120	Pass	Potential use of block.number as source of randonmness.	web3farmingbnb.sol	L: 0 C: 0
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	web3farmingbnb.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	web3farmingbnb.sol	L: 0 C: 0
SWC-123	Low	Requirement Violation.	web3farmingbnb.sol	L: 1089 C: 8
SWC-124	Pass	Write to Arbitrary Storage Location.	web3farmingbnb.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-125	Pass	Incorrect Inheritance Order.	web3farmingbnb.sol	L: 0 C: 0
SWC-126	Pass	Insufficient Gas Griefing.	web3farmingbnb.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	web3farmingbnb.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	web3farmingbnb.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	web3farmingbnb.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U +202E).	web3farmingbnb.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	web3farmingbnb.sol	L: 0 C: 0
SWC-132	Pass	Unexpected Ether balance.	web3farmingbnb.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	web3farmingbnb.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	web3farmingbnb.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	web3farmingbnb.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	web3farmingbnb.sol	L: 0 C: 0

We scan the contract for additional security issues using MYTHX and industry-standard security scanning tools.

Smart Contract Vulnerability Details

SWC-103 - Floating Pragma.

CWE-664: Improper Control of a Resource Through its Lifetime.

References:

Description:

Contracts should be deployed with the same compiler version and flags that they have been tested with thoroughly. Locking the pragma helps to ensure that contracts do not accidentally get deployed using, for example, an outdated compiler version that might introduce bugs that affect the contract system negatively.

Remediation:

Lock the pragma version and also consider known bugs (https://github.com/ethereum/solidity/releases) for the compiler version that is chosen.

Pragma statements can be allowed to float when a contract is intended for consumption by other developers, as in the case with contracts in a library or EthPM package. Otherwise, the developer would need to manually update the pragma in order to compile locally.

References:

Ethereum Smart Contract Best Practices - Lock pragmas to specific compiler version.

Smart Contract Vulnerability Details

SWC-107 - Reentrancy.

CWE-841: Improper Enforcement of Behavioral Workflow.

Description:

One of the major dangers of calling external contracts is that they can take over the control flow. In the reentrancy attack (a.k.a. recursive call attack), a malicious contract calls back into the calling contract before the first invocation of the function is finished. This may cause the different invocations of the function to interact in undesirable ways.

Remediation:

The best practices to avoid Reentrancy weaknesses are: Make sure all internal state changes are performed before the call is executed. This is known as the Checks-Effects-Interactions pattern Use a reentrancy lock.

References:

Ethereum Smart Contract Best Practices - Reentrancy

Smart Contract Vulnerability Details

SWC-116 - Block values as a proxy for time

CWE-829: Inclusion of Functionality from Untrusted Control Sphere

Description:

Contracts often need access to time values to perform certain types of functionality. Values such as block.timestamp, and block.number can give you a sense of the current time or a time delta, however, they are not safe to use for most purposes.

Remediation:

Developers should write smart contracts with the notion that block values are not precise, and the use of them can lead to unexpected effects. Alternatively, they may make use oracles..

References:

Safety: Timestamp dependence

Ethereum Smart Contract Best Practices - Timestamp Dependence

How do Ethereum mining nodes maintain a time consistent with the network?.

Solidity: Timestamp dependency, is it possible to do safely?.

Avoid using block.number as a timestamp

Smart Contract Vulnerability Details

SWC-123 - Requirement Violation

CWE-573: Improper Following of Specification by Caller

Description:

The Solidity require() construct is meant to validate external inputs of a function. In most cases, such external inputs are provided by callers, but they may also be returned by callees. In the former case, we refer to them as precondition violations. Violations of a requirement can indicate one of two possible issues:

A bug exists in the contract that provided the external input.
The condition used to express the requirement is too strong.

Remediation:

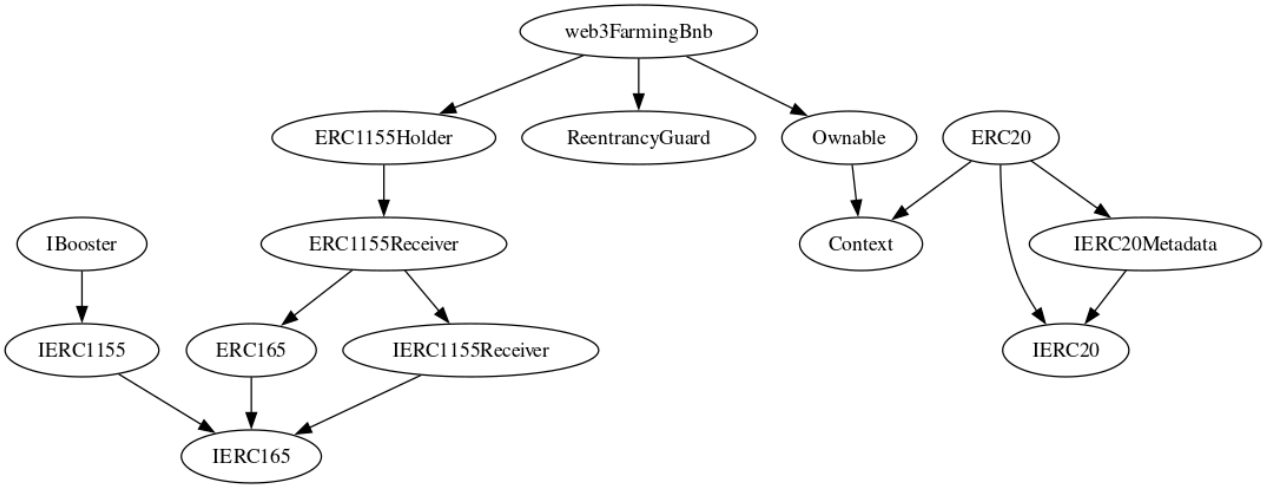
If the required logical condition is too strong, it should be weakened to allow all valid external inputs.Otherwise, the bug must be in the contract that provided the external input and one should consider fixing its code by making sure no invalid inputs are provided.

References:

The use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM

Inheritance

The contract for Web3Farming has the following inheritance structure.



Privileged Functions (onlyOwner)

Please Note if the contract is Renounced none of this functions can be executed.

Function Name	Parameters	Visibility
setTokenAddresses	address _reward	External
start	uint256 _rewardAmount	External
changeMinStakingAmount	uint256 _newMinStakingAmount	External
withdraw	address recipient, uint256 amount	External

Smart Contract Advance Checks

ID	Severity	Name	Result	Status
Staking-01	Minor	Potential Sandwich Attacks.	Pass	Not-Found
Staking-02	Minor	Function Visibility Optimization	Pass	Not-Found
Staking-03	Minor	Lack of Input Validation.	Fail	Pending
Staking-04	Major	Centralized Risk In addLiquidity.	Pass	Not-Found
Staking-05	Major	Missing Event Emission.	Pass	Remediated
Staking-06	Minor	Conformance with Solidity Naming Conventions.	Pass	Not-Found
Staking-07	Minor	State Variables could be Declared Constant.	Pass	Not-Found
Staking-08	Minor	Dead Code Elimination.	Fail	Pending
Staking-09	Major	Third Party Dependencies.	Pass	Not-Found
Staking-10	Major	Initial Token Distribution.	Pass	Not-Found
Staking-11	Major	dAPP Approval is set to all NFTs on the wallet an not limited to an specific contract.	Pass	Remediated
Staking-12	Major	Centralization Risks In The X Role	Pass	Not-Found
Staking-13	Informational	Extra Gas Cost For User..	Pass	Not-Found
Staking-14	Medium	Unnecessary Use Of SafeMath	Pass	Not-Found

ID	Severity	Name	Result	Status
Staking-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not-Found
Staking-16	Medium	Invalid collection of Taxes during Transfer.	Pass	Not-Found

Staking-03 | Lack of Input Validation.

Category	Severity	Location	Status
Volatile Code	Minor	web3farmingbnb.sol: 1267,14	Pending

Description

The given input is missing the check for the non-zero address.

The given input is missing the check for the changeMinStakingAmount, is missing required function.

Remediation

We advise the client to add the check for the passed-in values to prevent unexpected errors as below:

```
...
 require(receiver != address(0), "Receiver is the zero address");
...
...
require(value X limitation, "Your not able to do this function");
...
```

We also recommend customer to review the following function that is missing a required validation. changeMinStakingAmount, is missing required function.

Staking-08 | Dead Code Elimination.

Category	Severity	Location	Status
Coding Style	Minor	web3farmingbnb.sol: 1064,11	Pending

Description

Functions that are not used in the contract, and make the code s size bigger.

```
event SettingsUpdated
```

Remediation

Remove unused functions. dead-code elimination (also known as DCE, dead-code removal, dead-code stripping, or dead-code strip) is a compiler optimization to remove code which does not affect the program results. Removing such code has several benefits: it shrinks program size, an important consideration in some contexts, and it allows the running program to avoid executing irrelevant operations, which reduces its running time. It can also enable further optimizations by simplifying program structure.

https://docs.soliditylang.org/en/latest/cheatsheet.html

Technical Findings Summary

Classification of Risk

Severity	Description
Critical	Risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks.
Major	Risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project.
Medium	Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform
Minor	Risks can be any of the above but on a smaller scale. They generally do not compromise the overall integrity of the Project, but they may be less efficient than other solutions.
Informational	Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

Findings

Severity	Found	Pending	Resolved
Critical	0	0	0
Major	0	0	2
Medium	0	0	0
Minor	2	0	
Informational	0	0	0
Total	2	0	2

Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/web3_Farm	Pass
Other	https://t.me/web3_farming	Pass
Website	https://www.web3farm.online/	Pass
Telegram	https://t.me/web3farming_portal	Pass

We recommend to have 3 or more social media sources including a completed working websites.

Social Media Information Notes:

Auditor Notes: undefined

Project Owner Notes:

Aduit Result

Final Audit Score

Review	Score
Security Score	85
Auditor Score	85

The Following Score System Has been Added to this page to help understand the value of the audit, the maximun score is 100, however to attain that value the project most pass and provide all the data needed for the assessment. Our Passing Score has been changed to 80 Points, if a project does not attain 80% is an automatic failure. Read our notes and final assessment below.

Audit Passed

Assessment Results

Important Notes:

- No issues or vulnerabilities were found.
- This is a staking contract, the changeMinStakingRewards allow a value of 0, this need to have a required function to allow more than 0 tokens to avoid issues.
- The dApp Auto Connect has been corrected.
- Be advice that dapps can be updated at any given time.

Auditor Score =85
Audit Passed

Appendix

Finding Categories

Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that actagainst the nature of decentralization, such as explicit ownership or specialized access roles incombination with a mechanism to relocate funds.

Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimalEVM opcodes resulting in a reduction on the total gas cost of a transaction.

Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on howblock.timestamp works.

Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functionsbeing invoke-able by anyone under certain circumstances.

Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that mayresult in a vulnerability.

Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to makethe codebase more legible and, as a result, easily maintainable.

Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code,such as a constructor assignment imposing different require statements on the input variables than a setterfunction.

Coding Best Practices

ERC 20 Conding Standards are a set of rules that each developer should follow to ensure the code meet a set of creterias and is readable by all the developers.

Disclaimer

CFGNINJA has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocation for the Project, and users relying on this report should not consider this as having any merit for financial advice in any shape, form, or nature. The contracts audited do not account for any economic developments that the Project in question may pursue, and the veracity of the findings thus presented in this report relate solely to the proficiency, competence, aptitude, and discretion of our independent auditors, who make no guarantees nor assurance that the contracts are entirely free of exploits, bugs, vulnerabilities or deprecation of technologies.

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