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Audit Report

May 5th, 2023

Defi Trading Club

www.certifiagency.com

Security Assessment

May 5, 2023

This security assessment report was prepared by CertiFi Agency, a USA-Based Crypto & Blockchain Agency.

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- RETURN VALUE OF LOW LEVEL CALLS
- USE OF SAFEMATH LIBRARY
- UNNECESSARY DEFAULT VALUE INITIALIZATION
- FUNCTION SHOULD BE EXTERNAL
- UNUSED RECEIVE FALLBACK
- USING EXTCODESIZE TO CHECK FOR EXTERNALLY OWNED ACCOUNTS
- IN-LINE ASSEMBLY DETECTED
- VARIABLES SHOULD BE IMMUTABLE

Scan History

Disclaimer

Project Summary

This report has been prepared for Defi Trading Club (DTC) using CertiFi to scan and discover vulnerabilities and safe coding practices in their smart contract including the libraries used by the contract that are not officially recognized. CertiFi runs a comprehensive analysis on the Solidity code and finds vulnerabilities ranging from minor gas optimizations to major vulnerabilities leading to the loss of funds. The coverage scope pays attention to all the informational and critical vulnerabilities with over (100) modules. The scanning and auditing process covers the following areas:

Various common and uncommon attack vectors will be investigated to ensure that the smart contracts are secure from malicious actors. The scanner modules find and flag issues related to Gas optimizations that help in reducing the overall Gas cost It scans and evaluates the codebase against industry best practices and standards to ensure compliance It makes sure that the officially recognized libraries used in the code are secure and up to date

The CertiFi Team recommends running regular audit scans to identify any vulnerabilities that are introduced after introduces new features or refactors the code.

Audit Summary

Contract Name

Defi Trading Club

Contract Type

Smart Contract

Contract Address

0x7cB71D70FcAF9e2206916CBB0a18b33792C817bf

Contract Platform

bscscan

Contract Chain

mainnet

Contract URL

https://bscscan.com/address/0x7cB71D70FcAF9e2206916CBB0a18b33792C817bf

Language

Solidity

Website

www.defitradingclub.com

Date Published

May 04, 2023

Symbol

DTC

Project Contact Email

communitymanager@defitradingclub.com

Audit Methodology

Dynamic Scanning & Manual Review

Findings Summary

Defi Trading Club (DTC)

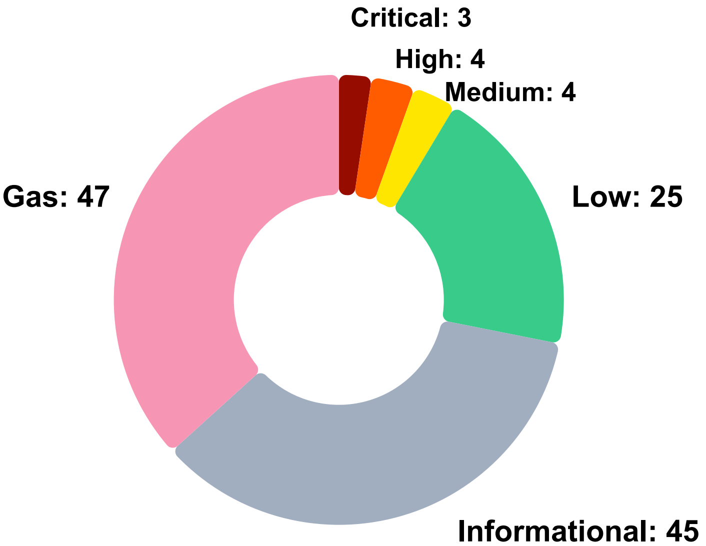
0x7cB71D70FcAF9e2206916CBB0a18b33792C817bf

Lines of Code **1420**

Score

4.35

Out of 5



Critical	3	Low	25
High	4	Informational	45
Medium	4	Gas	47

ACTION TAKEN

Fixed ✓ 0	False Positive ✓ 0
Won't Fix 0	Pending Fix ! 127

Bug ID	Severity	Bug Type	Status
SSB_43839_26	● Medium	ACCOUNT EXISTENCE CHECK FOR LOW LEVEL CALLS	! Pending Fix
SSB_43839_27	● Medium	ACCOUNT EXISTENCE CHECK FOR LOW LEVEL CALLS	! Pending Fix
SSB_43839_62	● Informational	HARD-CODED ADDRESS DETECTED	! Pending Fix
SSB_43839_63	● Informational	HARD-CODED ADDRESS DETECTED	! Pending Fix
SSB_43839_64	● Informational	HARD-CODED ADDRESS DETECTED	! Pending Fix
SSB_43839_58	● Informational	BLOCK VALUES AS A PROXY FOR TIME	! Pending Fix

SSB_43839_59	Informational	BLOCK VALUES AS A PROXY FOR TIME	Pending Fix
SSB_43839_60	Informational	BLOCK VALUES AS A PROXY FOR TIME	Pending Fix
SSB_43839_61	Informational	BLOCK VALUES AS A PROXY FOR TIME	Pending Fix
SSB_43839_61	Informational	BLOCK VALUES AS A PROXY FOR TIME	Pending Fix
SSB_43839_33	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix
SSB_43839_34	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix
SSB_43839_35	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix
SSB_43839_36	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix
SSB_43839_37	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix
SSB_43839_38	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix
SSB_43839_39	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix
SSB_43839_40	Gas	CHEAPER INEQUALITIES IN IF()	Pending Fix

SSB_43839_41	● Gas	CHEAPER INEQUALITIES IN IF()	(!) Pending Fix
SSB_43839_42	● Gas	CHEAPER INEQUALITIES IN IF()	(!) Pending Fix
SSB_43839_43	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_44	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_45	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_46	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_47	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_48	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_49	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_50	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_51	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix
SSB_43839_52	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	(!) Pending Fix

SSB_43839_53	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	Pending Fix
SSB_43839_54	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	Pending Fix
SSB_43839_55	● Gas	CHEAPER INEQUALITIES IN REQUIRE()	Pending Fix
SSB_43839_31	● Low	COMPILER VERSION TOO RECENT	Pending Fix
SSB_43839_30	● Gas	CUSTOM ERRORS TO SAVE GAS	Pending Fix
SSB_43839_98	● High	APPROVE FRONT-RUNNING ATTACK	Pending Fix
SSB_43839_99	● High	APPROVE FRONT-RUNNING ATTACK	Pending Fix
SSB_43839_100	● High	APPROVE FRONT-RUNNING ATTACK	Pending Fix
SSB_43839_101	● High	APPROVE FRONT-RUNNING ATTACK	Pending Fix
SSB_43839_5	● Gas	EXTRA GAS USAGE IN EMIT WITH LONG STRINGS	Pending Fix
SSB_43839_6	● Gas	EXTRA GAS USAGE IN EMIT WITH LONG STRINGS	Pending Fix
SSB_43839_7	● Gas	EXTRA GAS USAGE IN EMIT WITH LONG STRINGS	Pending Fix

SSB_43839_8	● Gas	EXTRA GAS USAGE IN EMIT WITH LONG STRINGS	Pending Fix
SSB_43839_32	● Gas	FUNCTION SHOULD RETURN STRUCT	Pending Fix
SSB_43839_21	● Gas	INTERNAL FUNCTIONS NEVER USED	Pending Fix
SSB_43839_22	● Gas	INTERNAL FUNCTIONS NEVER USED	Pending Fix
SSB_43839_23	● Gas	INTERNAL FUNCTIONS NEVER USED	Pending Fix
SSB_43839_24	● Gas	INTERNAL FUNCTIONS NEVER USED	Pending Fix
SSB_43839_65	● Gas	LONG REQUIRE/REVERT STRINGS	Pending Fix
SSB_43839_66	● Gas	LONG REQUIRE/REVERT STRINGS	Pending Fix
SSB_43839_67	● Gas	LONG REQUIRE/REVERT STRINGS	Pending Fix
SSB_43839_68	● Gas	LONG REQUIRE/REVERT STRINGS	Pending Fix
SSB_43839_74	● Low	MISSING EVENTS	Pending Fix
SSB_43839_75	● Low	MISSING EVENTS	Pending Fix

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SSB_43839_76	● Low	MISSING EVENTS	Pending Fix
SSB_43839_77	● Low	MISSING EVENTS	Pending Fix
SSB_43839_78	● Low	MISSING EVENTS	Pending Fix
SSB_43839_79	● Low	MISSING EVENTS	Pending Fix
SSB_43839_80	● Low	MISSING EVENTS	Pending Fix
SSB_43839_81	● Low	MISSING EVENTS	Pending Fix
SSB_43839_82	● Low	MISSING EVENTS	Pending Fix
SSB_43839_83	● Low	MISSING EVENTS	Pending Fix
SSB_43839_84	● Low	MISSING EVENTS	Pending Fix
SSB_43839_85	● Low	MISSING EVENTS	Pending Fix
SSB_43839_86	● Low	MISSING EVENTS	Pending Fix
SSB_43839_87	● Low	MISSING EVENTS	Pending Fix

SSB_43839_88	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_89	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_90	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_91	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_92	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_93	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_94	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_95	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_96	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_97	● Low	MISSING EVENTS	⚠ Pending Fix
SSB_43839_69	● Informational	MISSING INDEXED KEYWORDS IN EVENTS	⚠ Pending Fix
SSB_43839_70	● Informational	MISSING INDEXED KEYWORDS IN EVENTS	⚠ Pending Fix

SSB_43839_71	Informational	MISSING INDEXED KEYWORDS IN EVENTS	Pending Fix
SSB_43839_72	Informational	MISSING INDEXED KEYWORDS IN EVENTS	Pending Fix
SSB_43839_73	Informational	MISSING INDEXED KEYWORDS IN EVENTS	Pending Fix
SSB_43839_2	Critical	MISSING PAYABLE IN CALL FUNCTION	Pending Fix
SSB_43839_3	Critical	MISSING PAYABLE IN CALL FUNCTION	Pending Fix
SSB_43839_4	Critical	MISSING PAYABLE IN CALL FUNCTION	Pending Fix
SSB_43839_105	Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_106	Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_107	Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_108	Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_109	Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_110	Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix

SSB_43839_111	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_112	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_113	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_114	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_115	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_116	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_117	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_118	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_119	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_120	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_121	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_122	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix

SSB_43839_123	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_124	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_125	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_126	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_127	● Informational	PRESENCE OF OVERPOWERED ROLE	Pending Fix
SSB_43839_29	● Informational	REQUIRE WITH EMPTY MESSAGE	Pending Fix
SSB_43839_25	● Medium	RETURN VALUE OF LOW LEVEL CALLS	Pending Fix
SSB_43839_1	● Gas	USE OF SAFEMATH LIBRARY	Pending Fix
SSB_43839_102	● Gas	UNNECESSARY DEFAULT VALUE INITIALIZATION	Pending Fix
SSB_43839_103	● Gas	UNNECESSARY DEFAULT VALUE INITIALIZATION	Pending Fix
SSB_43839_14	● Gas	FUNCTION SHOULD BE EXTERNAL	Pending Fix
SSB_43839_15	● Gas	FUNCTION SHOULD BE EXTERNAL	Pending Fix

SSB_43839_16	Gas	FUNCTION SHOULD BE EXTERNAL	Pending Fix
SSB_43839_17	Gas	FUNCTION SHOULD BE EXTERNAL	Pending Fix
SSB_43839_18	Gas	FUNCTION SHOULD BE EXTERNAL	Pending Fix
SSB_43839_19	Gas	FUNCTION SHOULD BE EXTERNAL	Pending Fix
SSB_43839_20	Gas	FUNCTION SHOULD BE EXTERNAL	Pending Fix
SSB_43839_104	Informational	UNUSED RECEIVE FALLBACK	Pending Fix
SSB_43839_28	Medium	USING EXTCODESIZE TO CHECK FOR EXTERNALLY OWNED ACCOUNTS	Pending Fix
SSB_43839_56	Informational	IN-LINE ASSEMBLY DETECTED	Pending Fix
SSB_43839_57	Informational	IN-LINE ASSEMBLY DETECTED	Pending Fix
SSB_43839_9	Informational	VARIABLES SHOULD BE IMMUTABLE	Pending Fix
SSB_43839_10	Informational	VARIABLES SHOULD BE IMMUTABLE	Pending Fix
SSB_43839_11	Informational	VARIABLES SHOULD BE IMMUTABLE	Pending Fix

SSB_43839_12	● Informational	VARIABLES SHOULD BE IMMUTABLE	⚠ Pending Fix
SSB_43839_13	● Informational	VARIABLES SHOULD BE IMMUTABLE	⚠ Pending Fix

Vulnerability Details

Bug ID

SSB_43839_26

Severity	Confidence
● **Medium**	Tentative

Line nos	Action Taken
60-60	ⓘ Pending Fix

Bug Type

ACCOUNT EXISTENCE CHECK FOR LOW LEVEL CALLS

File Location

contract.sol

Issue Description

The low-level calls such as the `delegatecall`, `call`, or `callcode`, do not validate prior to the call if the destination account exists or not. They will always return true even if the account is non-existent, therefore, giving invalid output.

Issue Remediation

It is recommended to have an account existence check before making these low-level calls to confirm the presence of an external account with some valid code. The remediation also largely depends on the contract logic since bypasses are possible during constructor calls

Bug ID

SSB_43839_27

Severity	Confidence
● **Medium**	Tentative
Line nos	**Action Taken**
1068-1068	! Pending Fix

Bug Type

ACCOUNT EXISTENCE CHECK FOR LOW LEVEL CALLS

File Location

contract.sol

Issue Description

The low-level calls such as the `delegatecall`, `call`, or `callcode`, do not validate prior to the call if the destination account exists or not. They will always return true even if the account is non-existent, therefore, giving invalid output.

Issue Remediation

It is recommended to have an account existence check before making these low-level calls to confirm the presence of an external account with some valid code. The remediation also largely depends on the contract logic since bypasses are possible during constructor calls

Bug ID

SSB_43839_62

Severity

Informational

Confidence

Tentative

Line nos

336-336

Action Taken

Pending Fix

Bug Type

HARD-CODED ADDRESS DETECTED

File Location

contract.sol

Issue Description

The contract contains an unknown hard-coded address. This address might be used for some malicious activity. Please check the hard-coded address and its usage.
These hard-coded addresses may be used everywhere throughout the code to define states and interact with the functions and external calls.
Therefore, it is extremely crucial to ensure the correctness of these token contracts as they define various important aspects of the protocol operation.
A misconfigured address mapping could lead to the potential loss of user funds or compromise of the contract owner depending on the function logic.
The following hard-coded addresses were found -
`0xde491C65E507d281B6a3688d11e8fC222eee0975`

Issue Remediation

It is required to check the address. Also, it is required to check the code of the called contract for vulnerabilities.
Ensure that the contract validates if there's an address or a code change or test cases to validate if the address is correct.

Bug ID

SSB_43839_63

Severity	Confidence
● **Informational**	**Tentative**

Line nos	Action Taken
337-337	ⓘ Pending Fix

Bug Type

HARD-CODED ADDRESS DETECTED

File Location

contract.sol

Issue Description

The contract contains an unknown hard-coded address. This address might be used for some malicious activity. Please check the hard-coded address and its usage.
These hard-coded addresses may be used everywhere throughout the code to define states and interact with the functions and external calls.
Therefore, it is extremely crucial to ensure the correctness of these token contracts as they define various important aspects of the protocol operation.
A misconfigured address mapping could lead to the potential loss of user funds or compromise of the contract owner depending on the function logic.
The following hard-coded addresses were found -
`0x000000000000000000000000000000000000dEaD`

Issue Remediation

It is required to check the address. Also, it is required to check the code of the called contract for vulnerabilities.
Ensure that the contract validates if there's an address or a code change or test cases to validate if the address is correct.

Bug ID

SSB_43839_64

Severity	Confidence
● **Informational**	**Tentative**
Line nos	Action Taken
407-407	ⓘ Pending Fix

Bug Type

HARD-CODED ADDRESS DETECTED

File Location

contract.sol

Issue Description

The contract contains an unknown hard-coded address. This address might be used for some malicious activity. Please check the hard-coded address and its usage.
These hard-coded addresses may be used everywhere throughout the code to define states and interact with the functions and external calls.
Therefore, it is extremely crucial to ensure the correctness of these token contracts as they define various important aspects of the protocol operation.
A misconfigured address mapping could lead to the potential loss of user funds or compromise of the contract owner depending on the function logic.
The following hard-coded addresses were found -
`0x10ED43C718714eb63d5aA57B78B54704E256024E`

Issue Remediation

It is required to check the address. Also, it is required to check the code of the called contract for vulnerabilities.
Ensure that the contract validates if there's an address or a code change or test cases to validate if the address is correct.

Bug ID

SSB_43839_58

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
687-687	ⓘ Pending Fix

Bug Type

BLOCK VALUES AS A PROXY FOR TIME

File Location

contract.sol

Issue Description

Contracts often need access to time values to perform certain types of functionality. Values such as `block.timestamp` and `block.number` can be used to determine the current time or the time delta. However, they are not recommended for most use cases.

For `block.number`, as Ethereum block times are generally around 14 seconds, the delta between blocks can be predicted. The block times, on the other hand, do not remain constant and are subject to change for a number of reasons, e.g., fork reorganizations and the difficulty bomb.

Due to variable block times, `block.number` should not be relied on for precise calculations of time.

Issue Remediation

It is recommended to use trusted external time sources, block numbers instead of timestamps, and/or utilizing multiple time sources to increase reliability. These practices

can help mitigate risks of timestamp manipulation and inaccurate timing, increasing the reliability and security of the smart contract.

Bug ID

SSB_43839_59

Severity	Confidence
Informational	**Firm**

Line nos	Action Taken
1120-1120	Pending Fix

Bug Type

BLOCK VALUES AS A PROXY FOR TIME

File Location

contract.sol

Issue Description

Contracts often need access to time values to perform certain types of functionality. Values such as `block.timestamp` and `block.number` can be used to determine the current time or the time delta. However, they are not recommended for most use cases.

For `block.number`, as Ethereum block times are generally around 14 seconds, the delta between blocks can be predicted. The block times, on the other hand, do not remain constant and are subject to change for a number of reasons, e.g., fork reorganizations and the difficulty bomb.

Due to variable block times, `block.number` should not be relied on for precise calculations of time.

Issue Remediation

It is recommended to use trusted external time sources, block numbers instead of timestamps, and/or utilizing multiple time sources to increase reliability. These practices

can help mitigate risks of timestamp manipulation and inaccurate timing, increasing the reliability and security of the smart contract.

Bug ID

SSB_43839_60

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
1145-1145	ⓘ Pending Fix

Bug Type

BLOCK VALUES AS A PROXY FOR TIME

File Location

contract.sol

Issue Description

Contracts often need access to time values to perform certain types of functionality. Values such as `block.timestamp` and `block.number` can be used to determine the current time or the time delta. However, they are not recommended for most use cases.

For `block.number`, as Ethereum block times are generally around 14 seconds, the delta between blocks can be predicted. The block times, on the other hand, do not remain constant and are subject to change for a number of reasons, e.g., fork reorganizations and the difficulty bomb.

Due to variable block times, `block.number` should not be relied on for precise calculations of time.

Issue Remediation

It is recommended to use trusted external time sources, block numbers instead of timestamps, and/or utilizing multiple time sources to increase reliability. These practices

can help mitigate risks of timestamp manipulation and inaccurate timing, increasing the reliability and security of the smart contract.

Bug ID

SSB_43839_61

Severity	Confidence
• **Informational**	**Firm**

Line nos	Action Taken
1287-1287	Pending Fix

Bug Type

BLOCK VALUES AS A PROXY FOR TIME

File Location

contract.sol

Issue Description

Contracts often need access to time values to perform certain types of functionality. Values such as `block.timestamp` and `block.number` can be used to determine the current time or the time delta. However, they are not recommended for most use cases.

For `block.number`, as Ethereum block times are generally around 14 seconds, the delta between blocks can be predicted. The block times, on the other hand, do not remain constant and are subject to change for a number of reasons, e.g., fork reorganizations and the difficulty bomb.

Due to variable block times, `block.number` should not be relied on for precise calculations of time.

Issue Remediation

It is recommended to use trusted external time sources, block numbers instead of timestamps, and/or utilizing multiple time sources to increase reliability. These practices

can help mitigate risks of timestamp manipulation and inaccurate timing, increasing the reliability and security of the smart contract.

Bug ID

SSB_43839_61

Severity	Confidence
● **Informational**	Firm
Line nos	Action Taken
1301-1301	ⓘ Pending Fix

Bug Type

BLOCK VALUES AS A PROXY FOR TIME

File Location

contract.sol

Issue Description

Contracts often need access to time values to perform certain types of functionality. Values such as `block.timestamp` and `block.number` can be used to determine the current time or the time delta. However, they are not recommended for most use cases.

For `block.number`, as Ethereum block times are generally around 14 seconds, the delta between blocks can be predicted. The block times, on the other hand, do not remain constant and are subject to change for a number of reasons, e.g., fork reorganizations and the difficulty bomb.

Due to variable block times, `block.number` should not be relied on for precise calculations of time.

Issue Remediation

It is recommended to use trusted external time sources, block numbers instead of timestamps, and/or utilizing multiple time sources to increase reliability. These practices

can help mitigate risks of timestamp manipulation and inaccurate timing, increasing the reliability and security of the smart contract.

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Bug ID

SSB_43839_33

Severity

● **Gas**

Confidence

Firm

Line nos

513-513

Action Taken

ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_34

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
713-713	Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_35

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
719-719	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_36

Severity	Confidence
● **Gas**	**Firm**
Line nos	Action Taken
923-923	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_37

Severity	Confidence
● **Gas**	Firm

Line nos	Action Taken
1247-1247	Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_38

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
1253-1253	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

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Bug ID

SSB_43839_39

Severity

● **Gas**

Confidence

Firm

Line nos

1262-1262

Action Taken

ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_40

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
1369-1369	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_41

Severity

● **Gas**

Confidence

Firm

Line nos

1376-1376

Action Taken

Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_42

Severity

• **Gas**

Confidence

Firm

Line nos

1386-1386

Action Taken

ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN IF()

File Location

contract.sol

Issue Description

The contract was found to be doing comparisons using inequalities inside the if statement. When inside the `if` statements, non-strict inequalities `(>=, <=)` are usually cheaper than the strict equalities `(>, <).`

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the strict inequalities with the non-strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_43

Severity	Confidence
● **Gas**	Firm

Line nos	Action Taken
32-32	Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_44

Severity	Confidence
● **Gas**	Firm

Line nos	Action Taken
59-59	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_45

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
77-77	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_46

Severity	Confidence
• **Gas**	**Firm**

Line nos	Action Taken
557-561	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_47

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
586-590	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_48

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
628-628	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_49

Severity	Confidence
● **Gas**	**Firm**
Line nos	Action Taken
629-629	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_50

Severity	Confidence
• **Gas**	**Firm**

Line nos	Action Taken
635-635	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

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Bug ID

SSB_43839_51

Severity

● **Gas**

Confidence

Firm

Line nos

636-636

Action Taken

ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_52

Severity	Confidence
● Gas	Firm

Line nos	Action Taken
673-673	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_53

Severity

● **Gas**

Confidence

Firm

Line nos

1089-1089

Action Taken

ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_54

Severity	Confidence
● **Gas**	**Firm**
Line nos	Action Taken
1165-1165	Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_55

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
1172-1172	ⓘ Pending Fix

Bug Type

CHEAPER INEQUALITIES IN REQUIRE()

File Location

contract.sol

Issue Description

The contract was found to be performing comparisons using inequalities inside the `require` statement. When inside the `require` statements, non-strict inequalities `(>=, <=)` are usually costlier than strict equalities `(>, <)`.

Issue Remediation

It is recommended to go through the code logic, and, if possible, modify the non-strict inequalities with the strict ones to save `~3` gas as long as the logic of the code is not affected.

Bug ID

SSB_43839_31

Severity	Confidence
● **Low**	**Certain**

Line nos	Action Taken
6-6	ⓘ Pending Fix

Bug Type

COMPILER VERSION TOO RECENT

File Location

contract.sol

Issue Description

The compiler version detected in the code is too recent. Therefore, it is not time-tested and may be susceptible to multiple bugs and vulnerabilities, both from the usage and security perspectives. The following compiler versions were detected which were too recent - ['contract.sol'] - 0.8.19

Issue Remediation

It is suggested to use a compiler version that is neither too recent nor too old i.e., Solidity `0.8.18`. A stable compiler version should be used that is time-tested by the community, which fixed vulnerabilities introduced in older compiler versions.

The code should be kept updated according to the compiler release cycle. It should be tested before going on the Mainnet to reduce the chances of new vulnerabilities being introduced.

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Bug ID

SSB_43839_30

Severity

- **Gas**

Confidence

Certain

Line nos

114-114

Action Taken

Pending Fix

Bug Type

CUSTOM ERRORS TO SAVE GAS

File Location

contract.sol

Issue Description

The contract was found to be using `revert()` statements. Since Solidity `v0.8.4`, custom errors have been introduced which are a better alternative to the revert.
This allows the developers to pass custom errors with dynamic data while reverting the transaction and also making the whole implementation a bit cheaper than using `revert`.

Issue Remediation

It is recommended to replace all the instances of `revert()` statements with `error()` to save gas.

Bug ID

SSB_43839_98

Severity	Confidence
● **High**	**Tentative**

Line nos	Action Taken
1044-1047	ⓘ Pending Fix

Bug Type

APPROVE FRONT-RUNNING ATTACK

File Location

contract.sol

Issue Description

The `approve()` method overrides current allowance regardless of whether the spender already used it or not, so there is no way to increase or decrease allowance by a certain value atomically unless the token owner is a smart contract, not an account.
This can be abused by a token receiver when they try to withdraw certain tokens from the sender's account.
Meanwhile, if the sender decides to change the amount and sends another `approve` transaction, the receiver can notice this transaction before it's mined and can extract tokens from both the transactions, therefore, ending up with tokens from both the transactions. This is a front-running attack affecting the `ERC20 Approve` function.
The function approve can be front-run by abusing the `_approve` function.

Issue Remediation

Only use the approve function of the ERC/BEP standard to change the allowed amount to 0 or from 0 (wait till transaction is mined and approved).
Token owner just needs to make sure that the first transaction actually changed allowance from N to 0, i.e., that the spender didn't manage to transfer some of N allowed tokens before the first transaction was mined. Such checking is possible using advanced

blockchain explorers such as [Etherscan.io](https://etherscan.io/)

Another way to mitigate the threat is to approve token transfers only to smart contracts with verified source code that does not contain logic for performing attacks like described above, and to accounts owned by the people you may trust.

Bug ID

SSB_43839_99

Severity	Confidence
● **High**	**Tentative**

Line nos	Action Taken
1061-1065	ⓘ Pending Fix

Bug Type

APPROVE FRONT-RUNNING ATTACK

File Location

contract.sol

Issue Description

The `transferFrom()` method overrides current allowance regardless of whether the spender already used it or not, so there is no way to increase or decrease allowance by a certain value atomically unless the token owner is a smart contract, not an account.
This can be abused by a token receiver when they try to withdraw certain tokens from the sender's account.
Meanwhile, if the sender decides to change the amount and sends another `approve` transaction, the receiver can notice this transaction before it's mined and can extract tokens from both the transactions, therefore, ending up with tokens from both the transactions. This is a front-running attack affecting the `ERC20 Approve` function.
The function transferFrom can be front-run by abusing the `_approve` function.

Issue Remediation

Only use the approve function of the ERC/BEP standard to change the allowed amount to 0 or from 0 (wait till transaction is mined and approved).
Token owner just needs to make sure that the first transaction actually changed allowance from N to 0, i.e., that the spender didn't manage to transfer some of N allowed tokens before the first transaction was mined. Such checking is possible using advanced

blockchain explorers such as [Etherscan.io](https://etherscan.io/)
Another way to mitigate the threat is to approve token transfers only to smart contracts with verified source code that does not contain logic for performing attacks like described above, and to accounts owned by the people you may trust.

Bug ID

SSB_43839_100

Severity	Confidence
● **High**	**Tentative**

Line nos	Action Taken
1276-1289	ⓘ Pending Fix

Bug Type

APPROVE FRONT-RUNNING ATTACK

File Location

contract.sol

Issue Description

The `swapTokensForBNB()` method overrides current allowance regardless of whether the spender already used it or not, so there is no way to increase or decrease allowance by a certain value atomically unless the token owner is a smart contract, not an account.
This can be abused by a token receiver when they try to withdraw certain tokens from the sender's account.
Meanwhile, if the sender decides to change the amount and sends another `approve` transaction, the receiver can notice this transaction before it's mined and can extract tokens from both the transactions, therefore, ending up with tokens from both the transactions. This is a front-running attack affecting the `ERC20 Approve` function.
The function swapTokensForBNB can be front-run by abusing the `_approve` function.

Issue Remediation

Only use the approve function of the ERC/BEP standard to change the allowed amount to 0 or from 0 (wait till transaction is mined and approved).
Token owner just needs to make sure that the first transaction actually changed allowance from N to 0, i.e., that the spender didn't manage to transfer some of N allowed tokens before the first transaction was mined. Such checking is possible using advanced

blockchain explorers such as [Etherscan.io](https://etherscan.io/)
Another way to mitigate the threat is to approve token transfers only to smart contracts with verified source code that does not contain logic for performing attacks like described above, and to accounts owned by the people you may trust.

Bug ID

SSB_43839_101

Severity

● **High**

Confidence

Tentative

Line nos

1292-1303

Action Taken

Pending Fix

Bug Type

APPROVE FRONT-RUNNING ATTACK

File Location

contract.sol

Issue Description

The `addLiquidity()` method overrides current allowance regardless of whether the spender already used it or not, so there is no way to increase or decrease allowance by a certain value atomically unless the token owner is a smart contract, not an account.
This can be abused by a token receiver when they try to withdraw certain tokens from the sender's account.
Meanwhile, if the sender decides to change the amount and sends another `approve` transaction, the receiver can notice this transaction before it's mined and can extract tokens from both the transactions, therefore, ending up with tokens from both the transactions. This is a front-running attack affecting the `ERC20 Approve` function.
The function addLiquidity can be front-run by abusing the `_approve` function.

Issue Remediation

Only use the approve function of the ERC/BEP standard to change the allowed amount to 0 or from 0 (wait till transaction is mined and approved).
Token owner just needs to make sure that the first transaction actually changed allowance from N to 0, i.e., that the spender didn't manage to transfer some of N allowed tokens before the first transaction was mined. Such checking is possible using advanced

blockchain explorers such as [Etherscan.io](https://etherscan.io/)
Another way to mitigate the threat is to approve token transfers only to smart contracts with verified source code that does not contain logic for performing attacks like described above, and to accounts owned by the people you may trust.

Bug ID

SSB_43839_5

Severity

Gas

Confidence

Firm

Line nos

859-877

Action Taken

Pending Fix

Bug Type

EXTRA GAS USAGE IN EMIT WITH LONG STRINGS

File Location

contract.sol

Issue Description

The only limits to how long a string argument to a function call can be is the block gas limit of the EVM, currently 30 million. If the function call arguments gets passed directly inside any emitted events, it will also affect the gas cost and refund. Gas refunds will include the gas price of emitting this event, which could potentially be very large.
The contract was passing parameter ['newOwner'] inside event OwnershipTransferred.

Issue Remediation

It is recommended to not pass user-controlled parameters directly inside emitted events. If it's absolutely necessary, consider having input validations on the parameter.

Bug ID

SSB_43839_6

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
913-916	ⓘ Pending Fix

Bug Type

EXTRA GAS USAGE IN EMIT WITH LONG STRINGS

File Location

contract.sol

Issue Description

The only limits to how long a string argument to a function call can be is the block gas limit of the EVM, currently 30 million. If the function call arguments gets passed directly inside any emitted events, it will also affect the gas cost and refund. Gas refunds will include the gas price of emitting this event, which could potentially be very large.
The contract was passing parameter ['true_or_false'] inside event updated_SwapAndLiquify_Enabled.

Issue Remediation

It is recommended to not pass user-controlled parameters directly inside emitted events. If it's absolutely necessary, consider having input validations on the parameter.

Bug ID

SSB_43839_7

Severity	Confidence
● **Gas**	**Firm**

Line nos	Action Taken
1049-1054	ⓘ Pending Fix

Bug Type

EXTRA GAS USAGE IN EMIT WITH LONG STRINGS

File Location

contract.sol

Issue Description

The only limits to how long a string argument to a function call can be is the block gas limit of the EVM, currently 30 million. If the function call arguments gets passed directly inside any emitted events, it will also affect the gas cost and refund. Gas refunds will include the gas price of emitting this event, which could potentially be very large.
The contract was passing parameter ['owner', 'spender', 'amount'] inside event Approval.

Issue Remediation

It is recommended to not pass user-controlled parameters directly inside emitted events. If it's absolutely necessary, consider having input validations on the parameter.

Bug ID

SSB_43839_8

Severity	Confidence
● **Gas**	**Firm**
Line nos	**Action Taken**
1319-1401	Pending Fix

Bug Type

EXTRA GAS USAGE IN EMIT WITH LONG STRINGS

File Location

contract.sol

Issue Description

The only limits to how long a string argument to a function call can be is the block gas limit of the EVM, currently 30 million. If the function call arguments gets passed directly inside any emitted events, it will also affect the gas cost and refund. Gas refunds will include the gas price of emitting this event, which could potentially be very large.
The contract was passing parameter ['sender', 'recipient'] inside event Transfer.

Issue Remediation

It is recommended to not pass user-controlled parameters directly inside emitted events. If it’s absolutely necessary, consider having input validations on the parameter.

Bug ID

SSB_43839_32

Severity

● **Gas**

Confidence

Tentative

Line nos

485-531

Action Taken

ⓘ Pending Fix

Bug Type

FUNCTION SHOULD RETURN STRUCT

File Location

contract.sol

Issue Description

The function Project_Information was detected to be returning multiple values. Consider using a `struct` instead of multiple return values for the function. It can improve code readability.

Issue Remediation

Use `struct` for returning multiple values inside a function, which returns several parameters and improves code readability.

Bug ID

SSB_43839_21

Severity	Confidence
● **Gas**	**Tentative**

Line nos	Action Taken
27-28	ⓘ Pending Fix

Bug Type

INTERNAL FUNCTIONS NEVER USED

File Location

contract.sol

Issue Description

The contract declared internal functions but was not using them in any of the functions or contracts.
Since internal functions can only be called from inside the contracts, it makes no sense to have them if they are not used. This uses up gas and causes issues for auditors when understanding the contract logic.

Issue Remediation

Having dead code in the contracts uses up unnecessary gas and increases the complexity of the overall smart contract.
It is recommended to remove the internal functions from the contracts if they are never used.

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Bug ID

SSB_43839_22

Severity	Confidence
● **Gas**	**Tentative**

Line nos	Action Taken
34-36	ⓘ Pending Fix

Bug Type

INTERNAL FUNCTIONS NEVER USED

File Location

contract.sol

Issue Description

The contract declared internal functions but was not using them in any of the functions or contracts.
Since internal functions can only be called from inside the contracts, it makes no sense to have them if they are not used. This uses up gas and causes issues for auditors when understanding the contract logic.

Issue Remediation

Having dead code in the contracts uses up unnecessary gas and increases the complexity of the overall smart contract.
It is recommended to remove the internal functions from the contracts if they are never used.

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Bug ID

SSB_43839_23

Severity

● **Gas**

Confidence

Tentative

Line nos

43-46

Action Taken

ⓘ Pending Fix

Bug Type

INTERNAL FUNCTIONS NEVER USED

File Location

contract.sol

Issue Description

The contract declared internal functions but was not using them in any of the functions or contracts.
Since internal functions can only be called from inside the contracts, it makes no sense to have them if they are not used. This uses up gas and causes issues for auditors when understanding the contract logic.

Issue Remediation

Having dead code in the contracts uses up unnecessary gas and increases the complexity of the overall smart contract.
It is recommended to remove the internal functions from the contracts if they are never used.

Bug ID

SSB_43839_24

Severity	Confidence
● **Gas**	**Tentative**

Line nos	Action Taken
58-62	ⓘ Pending Fix

Bug Type

INTERNAL FUNCTIONS NEVER USED

File Location

contract.sol

Issue Description

The contract declared internal functions but was not using them in any of the functions or contracts.
Since internal functions can only be called from inside the contracts, it makes no sense to have them if they are not used. This uses up gas and causes issues for auditors when understanding the contract logic.

Issue Remediation

Having dead code in the contracts uses up unnecessary gas and increases the complexity of the overall smart contract.
It is recommended to remove the internal functions from the contracts if they are never used.

Bug ID

SSB_43839_65

Severity	Confidence
● **Gas**	**Certain**
Line nos	**Action Taken**
61-61	Pending Fix

Bug Type

LONG REQUIRE/REVERT STRINGS

File Location

contract.sol

Issue Description

The `require()` and `revert()` functions take an input string to show errors if the validation fails.
This strings inside these functions that are longer than `32 bytes` require at least one additional `MSTORE`, along with additional overhead for computing memory offset, and other parameters.

Issue Remediation

It is recommended to short the strings passed inside `require()` and `revert()` to fit under `32 bytes`. This will decrease the gas usage at the time of deployment and at runtime when the validation condition is met.

Bug ID

SSB_43839_66

Severity

● **Gas**

Confidence

Certain

Line nos

1050-1050

Action Taken

ⓘ Pending Fix

Bug Type

LONG REQUIRE/REVERT STRINGS

File Location

contract.sol

Issue Description

The `require()` and `revert()` functions take an input string to show errors if the validation fails.
This strings inside these functions that are longer than `32 bytes` require at least one additional `MSTORE`, along with additional overhead for computing memory offset, and other parameters.

Issue Remediation

It is recommended to short the strings passed inside `require()` and `revert()` to fit under `32 bytes`. This will decrease the gas usage at the time of deployment and at runtime when the validation condition is met.

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Bug ID

SSB_43839_67

Severity

● **Gas**

Confidence

Certain

Line nos

1051-1051

Action Taken

ⓘ Pending Fix

Bug Type

LONG REQUIRE/REVERT STRINGS

File Location

contract.sol

Issue Description

The `require()` and `revert()` functions take an input string to show errors if the validation fails.
This strings inside these functions that are longer than `32 bytes` require at least one additional `MSTORE`, along with additional overhead for computing memory offset, and other parameters.

Issue Remediation

It is recommended to short the strings passed inside `require()` and `revert()` to fit under `32 bytes`. This will decrease the gas usage at the time of deployment and at runtime when the validation condition is met.

Bug ID

SSB_43839_68

Severity

● **Gas**

Confidence

Certain

Line nos

1109-1109

Action Taken

Pending Fix

Bug Type

LONG REQUIRE/REVERT STRINGS

File Location

contract.sol

Issue Description

The `require()` and `revert()` functions take an input string to show errors if the validation fails.
This strings inside these functions that are longer than `32 bytes` require at least one additional `MSTORE`, along with additional overhead for computing memory offset, and other parameters.

Issue Remediation

It is recommended to short the strings passed inside `require()` and `revert()` to fit under `32 bytes`. This will decrease the gas usage at the time of deployment and at runtime when the validation condition is met.

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Bug ID

SSB_43839_74

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
58-62	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract Address was found to be missing these events on the function sendValue which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_75

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
64-66	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract Address was found to be missing these events on the function functionCall which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_76

Severity	Confidence
● **Low**	**Firm**
Line nos	**Action Taken**
68-70	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract Address was found to be missing these events on the function functionCall which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_77

Severity	Confidence
● **Low**	**Firm**
Line nos	Action Taken
72-74	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract Address was found to be missing these events on the function functionCallWithValue which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_78

Severity

● **Low**

Confidence

Firm

Line nos

76-81

Action Taken

Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract Address was found to be missing these events on the function functionCallWithValue which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_79

Severity	Confidence
● **Low**	**Firm**
Line nos	Action Taken
94-96	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract Address was found to be missing these events on the function functionDelegateCall which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_80

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
98-102	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract Address was found to be missing these events on the function functionDelegateCall which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_81

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
534-544	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract_SetUp_01__Presale_Address which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_82

Severity	Confidence
● **Low**	Firm

Line nos	Action Taken
666-678	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract_SetUp_05__Bot_Protection which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_83

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
681-691	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract_SetUp_06__Open_Trade which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_84

Severity	Confidence
● **Low**	**Firm**
Line nos	Action Taken
694-703	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract_SetUp_07__Blacklist_Bots which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_85

Severity

● **Low**

Confidence

Firm

Line nos

706-724

Action Taken

ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract_SetUp_08__Deactivate_Launch_Mode which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_86

Severity

● **Low**

Confidence

Firm

Line nos

734-755

Action Taken

ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract_SetUp_09__Update_Wallets which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

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Bug ID

SSB_43839_87

Severity	Confidence
● **Low**	**Firm**
Line nos	Action Taken
765-777	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract_SetUp_10__Update_Links which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_88

Severity	Confidence
● **Low**	**Firm**
Line nos	Action Taken
795-799	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract__Options__Burn_From_Supply which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_89

Severity	Confidence
● **Low**	**Firm**
Line nos	Action Taken
816-820	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Contract__Options__Free_Wallet_Transfers which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_90

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
823-832	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Maintenance__Add_Liquidity_Pair which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

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Bug ID

SSB_43839_91

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
889-902	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Maintenance__Remove_Contract_Fee which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_92

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
931-934	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction's log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Processing__Swap_Trigger_Count which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_93

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
958-966	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Wallet_Settings__Exclude_From_Fees which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

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Bug ID

SSB_43839_94

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
969-976	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Wallet_Settings__Exempt_From_Limits which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_95

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
979-986	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Wallet_Settings__Pre_Launch_Access which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_96

Severity	Confidence
● **Low**	**Firm**

Line nos	Action Taken
989-995	Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function Wallet_Settings__Remove_Early_Buyer_Tag which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_97

Severity	Confidence
● **Low**	Firm
Line nos	Action Taken
1067-1069	ⓘ Pending Fix

Bug Type

MISSING EVENTS

File Location

contract.sol

Issue Description

Events are inheritable members of contracts. When you call them, they cause the arguments to be stored in the transaction’s log—a special data structure in the blockchain. These logs are associated with the address of the contract which can then be used by developers and auditors to keep track of the transactions.
The contract STANDARD_TOKEN was found to be missing these events on the function send_BNB which would make it difficult or impossible to track these transactions off-chain.

Issue Remediation

Consider emitting events for the functions mentioned above. It is also recommended to have the addresses indexed.

Bug ID

SSB_43839_69

Severity	Confidence
● **Informational**	**Certain**
Line nos	Action Taken
157-157	ⓘ Pending Fix

Bug Type

MISSING INDEXED KEYWORDS IN EVENTS

File Location

contract.sol

Issue Description

Events are essential for tracking off-chain data and when the event paraemters are `indexed` they can be used as filter options which will help getting only the specific data instead of all the logs.

Issue Remediation

Consider adding `indexed` keyword to crucial event parameters that could be used in off-chain tracking. Do remember that the `indexed` keyword costs more gas.

Bug ID

SSB_43839_70

Severity

● **Informational**

Confidence

Certain

Line nos

441-441

Action Taken

ⓘ Pending Fix

Bug Type

MISSING INDEXED KEYWORDS IN EVENTS

File Location

contract.sol

Issue Description

Events are essential for tracking off-chain data and when the event paraemters are `indexed` they can be used as filter options which will help getting only the specific data instead of all the logs.

Issue Remediation

Consider adding `indexed` keyword to crucial event parameters that could be used in off-chain tracking. Do remember that the `indexed` keyword costs more gas.

Bug ID

SSB_43839_71

Severity	Confidence
● **Informational**	Certain

Line nos	Action Taken
442-442	Pending Fix

Bug Type

MISSING INDEXED KEYWORDS IN EVENTS

File Location

contract.sol

Issue Description

Events are essential for tracking off-chain data and when the event paraemters are `indexed` they can be used as filter options which will help getting only the specific data instead of all the logs.

Issue Remediation

Consider adding `indexed` keyword to crucial event parameters that could be used in off-chain tracking. Do remember that the `indexed` keyword costs more gas.

Bug ID

SSB_43839_72

Severity	Confidence
● **Informational**	Certain
Line nos	**Action Taken**
443-443	Pending Fix

Bug Type

MISSING INDEXED KEYWORDS IN EVENTS

File Location

contract.sol

Issue Description

Events are essential for tracking off-chain data and when the event paraemters are `indexed` they can be used as filter options which will help getting only the specific data instead of all the logs.

Issue Remediation

Consider adding `indexed` keyword to crucial event parameters that could be used in off-chain tracking. Do remember that the `indexed` keyword costs more gas.

Bug ID

SSB_43839_73

Severity	Confidence
● **Informational**	**Certain**
Line nos	Action Taken
445-445	Pending Fix

Bug Type

MISSING INDEXED KEYWORDS IN EVENTS

File Location

contract.sol

Issue Description

Events are essential for tracking off-chain data and when the event paraemters are `indexed` they can be used as filter options which will help getting only the specific data instead of all the logs.

Issue Remediation

Consider adding `indexed` keyword to crucial event parameters that could be used in off-chain tracking. Do remember that the `indexed` keyword costs more gas.

Bug ID

SSB_43839_2

Severity	Confidence
● **Critical**	Firm

Line nos	Action Taken
60-60	Pending Fix

Bug Type

MISSING PAYABLE IN CALL FUNCTION

File Location

contract.sol

Issue Description

The contract is using a `.call()` method to make external calls along with passing some Ether as `msg.value`. Since the function sendValue is not marked as `payable`, the transaction will fail.

Issue Remediation

If the function needs to pass some Ether as `msg.value` inside a function, make sure to set that function as `payable`. No changes are required if the use case is to send Ether from the contract's balance.

Bug ID

SSB_43839_3

Severity	Confidence
● **Critical**	Firm

Line nos	Action Taken
79-79	ⓘ Pending Fix

Bug Type

MISSING PAYABLE IN CALL FUNCTION

File Location

contract.sol

Issue Description

The contract is using a `.call()` method to make external calls along with passing some Ether as `msg.value`. Since the function functionCallWithValue is not marked as `payable`, the transaction will fail.

Issue Remediation

If the function needs to pass some Ether as `msg.value` inside a function, make sure to set that function as `payable`. No changes are required if the use case is to send Ether from the contract’s balance.

Bug ID

SSB_43839_4

Severity	Confidence
● **Critical**	**Firm**

Line nos	Action Taken
1068-1068	Pending Fix

Bug Type

MISSING PAYABLE IN CALL FUNCTION

File Location

contract.sol

Issue Description

The contract is using a `.call()` method to make external calls along with passing some Ether as `msg.value`. Since the function send_BNB is not marked as `payable`, the transaction will fail.

Issue Remediation

If the function needs to pass some Ether as `msg.value` inside a function, make sure to set that function as `payable`. No changes are required if the use case is to send Ether from the contract's balance.

Bug ID

SSB_43839_105

Severity

● **Informational**

Confidence

Firm

Line nos

534-544

Action Taken

Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_106

Severity	Confidence
● **Informational**	Firm
Line nos	**Action Taken**
547-573	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_107

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
576-603	Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_108

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
618-646	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_109

Severity	Confidence
● **Informational**	**Firm**
Line nos	Action Taken
666-678	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_110

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
681-691	Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.

Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].

For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

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Bug ID

SSB_43839_111

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
694-703	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_112

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
706-724	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

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Bug ID

SSB_43839_113

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
734-755	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

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Bug ID

SSB_43839_114

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
765-777	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_115

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
795-799	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_116

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
816-820	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.

Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].

For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_117

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
823-832	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_118

Severity

● **Informational**

Confidence

Firm

Line nos

845-856

Action Taken

Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.

Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].

For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_119

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
859-877	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.

Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].

For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_120

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
913-916	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_121

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
919-928	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_122

Severity	Confidence
● **Informational**	Firm
Line nos	Action Taken
931-934	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_123

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
937-947	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.

Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].

For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

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Bug ID

SSB_43839_124

Severity	Confidence
● **Informational**	**Firm**
Line nos	**Action Taken**
958-966	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.

Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].

For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_125

Severity	Confidence
● **Informational**	Firm

Line nos	Action Taken
969-976	Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_126

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
979-986	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

Bug ID

SSB_43839_127

Severity	Confidence
● **Informational**	**Firm**

Line nos	Action Taken
989-995	ⓘ Pending Fix

Bug Type

PRESENCE OF OVERPOWERED ROLE

File Location

contract.sol

Issue Description

The overpowered owner (i.e., the person who has too much power) is a project design where the contract is tightly coupled to their owner (or owners); only they can manually invoke critical functions.
Due to the fact that this function is only accessible from a single address, the system is heavily dependent on the address of the owner. In this case, there are scenarios that may lead to undesirable consequences for investors, e.g., if the private key of this address is compromised, then an attacker can take control of the contract.

Issue Remediation

We recommend designing contracts in a trust-less manner. For instance, this functionality can be implemented in the contract's constructor. Another option is to use a MultiSig wallet for this address. For systems that are provisioned for a single user, you can use [Ownable.sol].
For systems that require provisioning users in a group, you can use [@openzeppelin/Roles.sol] or [@hq20/Whitelist.sol].

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Bug ID

SSB_43839_29

Severity	Confidence
● **Informational**	**Certain**

Line nos	Action Taken
684-684	ⓘ Pending Fix

Bug Type

REQUIRE WITH EMPTY MESSAGE

File Location

contract.sol

Issue Description

A `require` statement was detected with an empty message. It takes two parameters and the message part is optional. This is shown to the user when and if the `require` statement evaluates to `false`. This message gives more information about the statement and why it gave a `false` response.

Issue Remediation

It is recommended to add a descriptive message, no longer than `32 bytes`, inside the `require` statement to give more detail to the user about why the condition failed.

Bug ID

SSB_43839_25

Severity	Confidence
● **Medium**	**Certain**

Line nos	Action Taken
1068-1068	Pending Fix

Bug Type

RETURN VALUE OF LOW LEVEL CALLS

File Location

contract.sol

Issue Description

The functions do not check the return value of low-level calls. This can lock Ether in the contract if the call fails or may compromise the contract if the ownership is being changed. The following calls were detected without return value validations - call

Issue Remediation

Ensure return value is checked using conditional statements for low-level calls. We should also ensure that we log failed calls using events.

Bug ID

SSB_43839_1

Severity	Confidence
● **Gas**	Certain
Line nos	**Action Taken**
328-328	ⓘ Pending Fix

Bug Type

USE OF SAFEMATH LIBRARY

File Location

contract.sol

Issue Description

`SafeMath` library is found to be used in the contract. This increases gas consumption than traditional methods and validations if done manually.
Also, Solidity `0.8.0` includes checked arithmetic operations by default, and this renders `SafeMath` unnecessary.

Issue Remediation

We do not recommend using `SafeMath` library for all arithmetic operations. It is good practice to use explicit checks where it is really needed and to avoid extra checks where overflow/underflow is impossible.
The compiler should be upgraded to Solidity version `0.8.0+` which automatically checks for overflows and underflows.

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Bug ID

SSB_43839_102

Severity	Confidence
● **Gas**	**Certain**

Line nos	Action Taken
478-478	ⓘ Pending Fix

Bug Type

UNNECESSARY DEFAULT VALUE INITIALIZATION

File Location

contract.sol

Issue Description

The contract was found to be initializing the value of bool to it's default value, i.e., false. This is redundant and not required.

Issue Remediation

It's not recommended to initialize the data types to their default values unless there's a use-case because it's unnecessary and costs around ~3 gas.

Bug ID

SSB_43839_103

Severity	Confidence
● **Gas**	**Certain**

Line nos	Action Taken
479-479	ⓘ Pending Fix

Bug Type

UNNECESSARY DEFAULT VALUE INITIALIZATION

File Location

contract.sol

Issue Description

The contract was found to be initializing the value of bool to it's default value, i.e., false. This is redundant and not required.

Issue Remediation

It's not recommended to initialize the data types to their default values unless there's a use-case because it's unnecessary and costs around ~3 gas.

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Bug ID

SSB_43839_14

Severity	Confidence
● **Gas**	**Certain**

Line nos	Action Taken
1061-1065	Pending Fix

Bug Type

FUNCTION SHOULD BE EXTERNAL

File Location

contract.sol

Issue Description

A function with `public` visibility modifier was detected that is not called internally. `public` and `external` differs in terms of gas usage. The former use more than the latter when used with large arrays of data. This is due to the fact that Solidity copies arguments to memory on a `public` function while `external` read from calldata which a cheaper than memory allocation.

Issue Remediation

If you know the function you create only allows for `external` calls, use the `external` visibility modifier instead of `public`. It provides performance benefits and you will save on gas.

Bug ID

SSB_43839_15

Severity	Confidence
● **Gas**	**Certain**
Line nos	Action Taken
1039-1042	ⓘ Pending Fix

Bug Type

FUNCTION SHOULD BE EXTERNAL

File Location

contract.sol

Issue Description

A function with `public` visibility modifier was detected that is not called internally. `public` and `external` differs in terms of gas usage. The former use more than the latter when used with large arrays of data. This is due to the fact that Solidity copies arguments to memory on a `public` function while `external` read from calldata which a cheaper than memory allocation.

Issue Remediation

If you know the function you create only allows for `external` calls, use the `external` visibility modifier instead of `public`. It provides performance benefits and you will save on gas.

Bug ID

SSB_43839_16

Severity

Gas

Confidence

Certain

Line nos

859-877

Action Taken

Pending Fix

Bug Type

FUNCTION SHOULD BE EXTERNAL

File Location

contract.sol

Issue Description

A function with `public` visibility modifier was detected that is not called internally. `public` and `external` differs in terms of gas usage. The former use more than the latter when used with large arrays of data. This is due to the fact that Solidity copies arguments to memory on a `public` function while `external` read from calldata which a cheaper than memory allocation.

Issue Remediation

If you know the function you create only allows for `external` calls, use the `external` visibility modifier instead of `public`. It provides performance benefits and you will save on gas.

Bug ID

SSB_43839_17

Severity	Confidence
• **Gas**	**Certain**

Line nos	Action Taken
1044-1047	Pending Fix

Bug Type

FUNCTION SHOULD BE EXTERNAL

File Location

contract.sol

Issue Description

A function with `public` visibility modifier was detected that is not called internally. `public` and `external` differs in terms of gas usage. The former use more than the latter when used with large arrays of data. This is due to the fact that Solidity copies arguments to memory on a `public` function while `external` read from calldata which a cheaper than memory allocation.

Issue Remediation

If you know the function you create only allows for `external` calls, use the `external` visibility modifier instead of `public`. It provides performance benefits and you will save on gas.

Bug ID

SSB_43839_18

Severity	Confidence
● **Gas**	**Certain**
Line nos	Action Taken
1034-1037	Pending Fix

Bug Type

FUNCTION SHOULD BE EXTERNAL

File Location

contract.sol

Issue Description

A function with `public` visibility modifier was detected that is not called internally. `public` and `external` differs in terms of gas usage. The former use more than the latter when used with large arrays of data. This is due to the fact that Solidity copies arguments to memory on a `public` function while `external` read from calldata which a cheaper than memory allocation.

Issue Remediation

If you know the function you create only allows for `external` calls, use the `external` visibility modifier instead of `public`. It provides performance benefits and you will save on gas.

Bug ID

SSB_43839_19

Severity

● **Gas**

Confidence

Certain

Line nos

816-820

Action Taken

ⓘ Pending Fix

Bug Type

FUNCTION SHOULD BE EXTERNAL

File Location

contract.sol

Issue Description

A function with `public` visibility modifier was detected that is not called internally. `public` and `external` differs in terms of gas usage. The former use more than the latter when used with large arrays of data. This is due to the fact that Solidity copies arguments to memory on a `public` function while `external` read from calldata which a cheaper than memory allocation.

Issue Remediation

If you know the function you create only allows for `external` calls, use the `external` visibility modifier instead of `public`. It provides performance benefits and you will save on gas.

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Bug ID

SSB_43839_20

Severity	Confidence
● **Gas**	**Certain**

Line nos	Action Taken
845-856	ⓘ Pending Fix

Bug Type

FUNCTION SHOULD BE EXTERNAL

File Location

contract.sol

Issue Description

A function with `public` visibility modifier was detected that is not called internally. `public` and `external` differs in terms of gas usage. The former use more than the latter when used with large arrays of data. This is due to the fact that Solidity copies arguments to memory on a `public` function while `external` read from calldata which a cheaper than memory allocation.

Issue Remediation

If you know the function you create only allows for `external` calls, use the `external` visibility modifier instead of `public`. It provides performance benefits and you will save on gas.

Bug ID

SSB_43839_104

Severity	Confidence
● **Informational**	**Tentative**
Line nos	Action Taken
1404-1404	ⓘ Pending Fix

Bug Type

UNUSED RECEIVE FALLBACK

File Location

contract.sol

Issue Description

NOT DEFINED YET

Issue Remediation

NOT DEFINED YET

Bug ID

SSB_43839_28

Severity

● **Medium**

Confidence

Tentative

Line nos

54-54

Action Taken

Pending Fix

Bug Type

USING EXTCODESIZE TO CHECK FOR EXTERNALLY OWNED ACCOUNTS

File Location

contract.sol

Issue Description

`extcodesize` is used to check if a contract is an externally owned account or another contract.
`extcodesize` returns `0` for externally owned accounts but there's a specific condition here that when an `extcodesize` check is made to a contract that is still under construction or when the contract's constructor is running, extcodesize for its address returns zero.
This may give erroneous outputs for checking externally owned contracts.

Issue Remediation

It is recommended to manually check and validate at compile-time that the contract/account address being checked inside `extcodesize` does not return improper values due to the external contract's construction.

Bug ID

SSB_43839_56

Severity	Confidence
● **Informational**	**Certain**
Line nos	**Action Taken**
54-54	ⓘ Pending Fix

Bug Type

IN-LINE ASSEMBLY DETECTED

File Location

contract.sol

Issue Description

Inline assembly is a way to access the Ethereum Virtual Machine at a low level. This bypasses several important safety features and checks of Solidity. This should only be used for tasks that need it and if there is confidence in using it.

Multiple vulnerabilities have been detected previously when the assembly is not properly used within the Solidity code; therefore, caution should be exercised while using them.

Issue Remediation

Avoid using inline assembly instructions if possible because it might introduce certain issues in the code if not dealt with properly because it bypasses several safety features that are already implemented in Solidity.

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Bug ID

SSB_43839_57

Severity	Confidence
● **Informational**	**Certain**
Line nos	Action Taken
109-112	ⓘ Pending Fix

Bug Type

IN-LINE ASSEMBLY DETECTED

File Location

contract.sol

Issue Description

Inline assembly is a way to access the Ethereum Virtual Machine at a low level. This bypasses several important safety features and checks of Solidity. This should only be used for tasks that need it and if there is confidence in using it.

Multiple vulnerabilities have been detected previously when the assembly is not properly used within the Solidity code; therefore, caution should be exercised while using them.

Issue Remediation

Avoid using inline assembly instructions if possible because it might introduce certain issues in the code if not dealt with properly because it bypasses several safety features that are already implemented in Solidity.

Bug ID

SSB_43839_9

Severity

● **Informational**

Confidence

Tentative

Line nos

385-385

Action Taken

Pending Fix

Bug Type

VARIABLES SHOULD BE IMMUTABLE

File Location

contract.sol

Issue Description

Constants and Immutables should be used in their appropriate contexts. `constant` should only be used for literal values written into the code. `immutable` variables should be used for expressions, or values calculated in, or passed into the constructor.

Issue Remediation

It is recommended to use `immutable` instead of `constant`.

Bug ID

SSB_43839_10

Severity	Confidence
● **Informational**	**Tentative**
Line nos	**Action Taken**
386-386	Pending Fix

Bug Type

VARIABLES SHOULD BE IMMUTABLE

File Location

contract.sol

Issue Description

Constants and Immutables should be used in their appropriate contexts. `constant` should only be used for literal values written into the code. `immutable` variables should be used for expressions, or values calculated in, or passed into the constructor.

Issue Remediation

It is recommended to use `immutable` instead of `constant`.

Bug ID

SSB_43839_11

Severity	Confidence
● **Informational**	Tentative

Line nos	Action Taken
387-387	! Pending Fix

Bug Type

VARIABLES SHOULD BE IMMUTABLE

File Location

contract.sol

Issue Description

Constants and Immutables should be used in their appropriate contexts. `constant` should only be used for literal values written into the code. `immutable` variables should be used for expressions, or values calculated in, or passed into the constructor.

Issue Remediation

It is recommended to use `immutable` instead of `constant`.

Bug ID

SSB_43839_12

Severity	Confidence
● **Informational**	Tentative
Line nos	Action Taken
410-410	! Pending Fix

Bug Type

VARIABLES SHOULD BE IMMUTABLE

File Location

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Scan History

● Critical ● High ● Medium ● Low ● Informational ● Gas

No	Date	Score	Scan Overview
1.	2023-05-03	**4.35**	● 3 ● 4 ● 4 ● 25 ● 45 ● 47

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