



# Smart Contract Audit

FOR  
**Coin31**  
DATED : 3 July 24'



# MANUAL TESTING

**Centralization – Enabling Trades**

**Severity: High**

**Function: EnableTrading**

**Status: Open**

**Overview:**

The EnableTrading function permits only the contract owner to activate trading capabilities. Until this function is executed, no investors can buy, sell, or transfer their tokens. This places a high degree of control and centralization in the hands of the contract owner.

```
function enableTrading() external onlyOwner {  
    tradeEnable = !tradeEnable;  
}
```

**Suggestion:**

To reduce centralization and potential manipulation, consider one of the following approaches:

1. Automatically enable trading after a specified condition, such as the completion of a presale, is met.
2. If manual activation is still desired, consider transferring the ownership of the contract to a trustworthy, third-party entity like a certified "PinkSale Safu" developer. This can give investors more confidence in the eventual activation of trading capabilities, mitigating concerns of potential bad-faith actions by the original owner.



# AUDIT SUMMARY

**Project name - Coin31**

**Date:** 3 July, 2024

**Scope of Audit-** Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

**Audit Status: Passed with High Risk**

## Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	0	3	1
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0



# USED TOOLS

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## Tools:

### 1- Manual Review:

A line by line code review has been performed by audit ace team.

**2- BSC Test Network:** All tests were conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.

### 3- Slither :

The code has undergone static analysis using Slither.

### Testnet version:

The tests were performed using the contract deployed on the BSC Testnet, which can be found at the following address:

<https://testnet.bscscan.com/address/0x7524bdc3604a3953a10436afaae68654bf9a93d5#code>

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# Token Information

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**Token Address:** --

**Name:** --

**Symbol:** --

**Decimals:** --

**Network:** --

**Token Type:** --

**Owner:** --

**Deployer:** --

**Token Supply:** --

**Checksum:** Ae032c616934aeb47e6039f76b20d513

**Testnet:**

<https://testnet.bscscan.com/address/0x7524bdc3604a3953a10436afaae68654bf9a93d5#code>



# TOKEN OVERVIEW

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**Buy Fee:** 0-0%

---

**Sell Fee:** 0-0%

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**Transfer Fee:** 0-0%

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**Fee Privilege:** Owner

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**Ownership:** Owned

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**Minting:** None

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**Max Tx:** No

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**Blacklist:** No

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# AUDIT METHODOLOGY

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The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
- Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
- Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
- Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
- Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
- Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.

# VULNERABILITY CHECKLIST



Return values of low-level calls



**Gasless Send**



Private modifier



Using block.timestamp



Multiple Sends



Re-entrancy



Using Suicide



Tautology or contradiction



Gas Limit and Loops



Timestamp Dependence



Address hardcoded



Revert/require functions



Exception Disorder



Use of tx.origin



Using inline assembly



Integer overflow/underflow



Divide before multiply



Dangerous strict equalities



Missing Zero Address Validation



Using SHA3

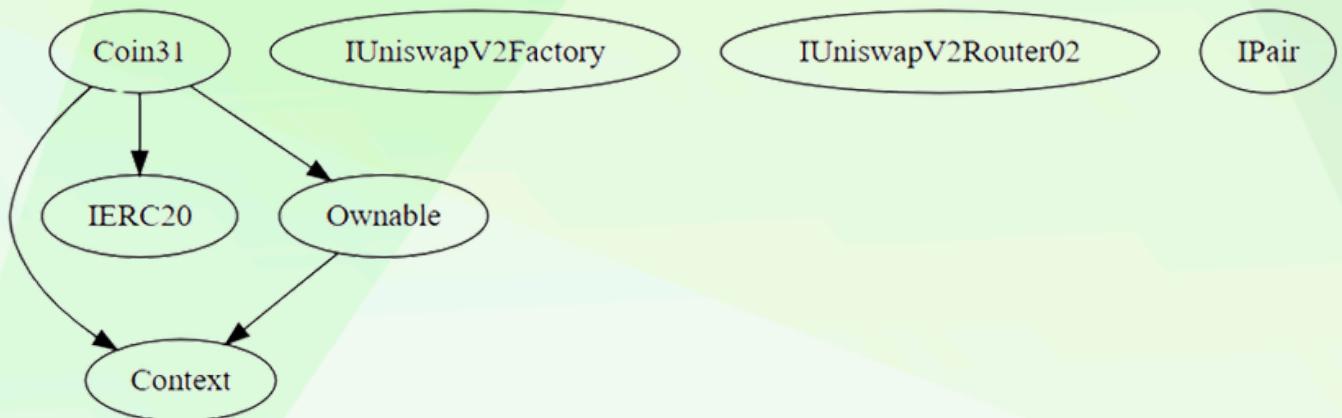


Compiler version not fixed



Using throw

# INHERITANCE TREE





## POINTS TO NOTE

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- The owner can transfer ownership.
- The owner can renounce ownership.
- The owner can Enable trading.
- The owner can recover BEP20.
- The owner can add/remove the W address.
- The owner can add/remove the B address.



# STATIC ANALYSIS

```
Coin31.recoverBEP20FromContract(address,uint256,address) (Coin31.sol#294-299) ignores return value by IERC20(_tokenAddy)
.transfer(to,_amount) (Coin31.sol#297)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unchecked-transfer
INFO:Detectors:
Coin31.allowance(address,address).owner (Coin31.sol#248) shadows:
- Ownable.owner() (Coin31.sol#117-119) (function)
Coin31._approve(address,address,uint256).owner (Coin31.sol#265) shadows:
- Ownable.owner() (Coin31.sol#117-119) (function)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#local-variable-shadowing
INFO:Detectors:
Ownable.constructor().msgSender (Coin31.sol#112) lacks a zero-check on :
- _owner = msgSender (Coin31.sol#113)
Coin31.recoverBNBfromContract(address).to (Coin31.sol#301) lacks a zero-check on :
- address(address(to)).transfer(contractETHBalance) (Coin31.sol#305)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-address-validation
INFO:Detectors:
Reentrancy in Coin31.recoverBEP20FromContract(address,uint256,address) (Coin31.sol#294-299):
    External calls:
        - IERC20(_tokenAddy).transfer(to,_amount) (Coin31.sol#297)
    Event emitted after the call(s):
        - ERC20TokensRecovered(_amount) (Coin31.sol#298)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3
INFO:Detectors:
Coin31.cbl(address) (Coin31.sol#285-287) uses timestamp for comparisons
    Dangerous comparisons:
        - bl[addr] > 0 && block.timestamp < bl[addr] (Coin31.sol#286)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#block-timestamp
Reentrancy in Coin31.recoverBEP20FromContract(address,uint256,address) (Coin31.sol#294-299):
    External calls:
        - IERC20(_tokenAddy).transfer(to,_amount) (Coin31.sol#297)
    Event emitted after the call(s):
        - ERC20TokensRecovered(_amount) (Coin31.sol#298)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3
INFO:Detectors:
Coin31.cbl(address) (Coin31.sol#285-287) uses timestamp for comparisons
    Dangerous comparisons:
        - bl[addr] > 0 && block.timestamp < bl[addr] (Coin31.sol#286)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#block-timestamp
INFO:Detectors:
Coin31.min(uint256,uint256) (Coin31.sol#239-241) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version0.8.17 (Coin31.sol#2) allows old versions
solc-0.8.17 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Function IUniswapV2Router02.WETH() (Coin31.sol#35) is not in mixedCase
Function IPair.DOMAIN_SEPARATOR() (Coin31.sol#69) is not in mixedCase
Function IPair.PERMIT_TYPEHASH() (Coin31.sol#70) is not in mixedCase
Function IPair.MINIMUM_LIQUIDITY() (Coin31.sol#87) is not in mixedCase
Parameter Coin31.recoverBEP20FromContract(address,uint256,address).._tokenAddy (Coin31.sol#294) is not in mixedCase
Parameter Coin31.recoverBEP20FromContract(address,uint256,address).._amount (Coin31.sol#294) is not in mixedCase
Constant Coin31._decimals (Coin31.sol#160) is not in UPPER_CASE_WITH_UNDERSCORES

Function IUniswapV2Router02.WETH() (Coin31.sol#35) is not in mixedCase
Function IPair.DOMAIN_SEPARATOR() (Coin31.sol#69) is not in mixedCase
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Parameter Coin31.recoverBEP20FromContract(address,uint256,address).._tokenAddy (Coin31.sol#294) is not in mixedCase
Parameter Coin31.recoverBEP20FromContract(address,uint256,address).._amount (Coin31.sol#294) is not in mixedCase
Constant Coin31._decimals (Coin31.sol#160) is not in UPPER_CASE_WITH_UNDERSCORES

INFO:Detectors:
Reentrancy in Coin31.recoverBNBfromContract(address) (Coin31.sol#301-307):
    External calls:
        - address(address(to)).transfer(contractETHBalance) (Coin31.sol#305)
    Event emitted after the call(s):
        - ETHBalanceRecovered() (Coin31.sol#306)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4
INFO:Detectors:
Coin31.router (Coin31.sol#157) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
INFO:Detectors:
Coin31.uniswapV2Router (Coin31.sol#167) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:Coin31.sol analyzed (7 contracts with 93 detectors), 21 result(s) found
ethsec@0dcc802fad35:/share$ |
```

**Result => A static analysis of contract's source code has been performed using slither,  
No major issues were found in the output**



# FUNCTIONAL TESTING

## 1- Approve (passed):

<https://testnet.bscscan.com/tx/0x9c0807151d43d7d282edc303798b7ddc79bd2ac68ee0ab022a8d18612908e586>

## 2- Add W (passed):

<https://testnet.bscscan.com/tx/0x75d626917d66133f37d128c777c6cd53ac9232f5da1eb9960960c0451d4ff645>

## 3- Add B (passed):

<https://testnet.bscscan.com/tx/0xa1c56f67c4b0efdd44da147ec9b08c9a4d1bb2b03ccb09805d901936523e1562>

## 4- Enable Trading (passed):

<https://testnet.bscscan.com/tx/0xb07e66d7469d4b0c73e32257877fdf2dc4ce252a1ff233c3b44384a0c56e2f2>

## 5- Remove B (passed):

<https://testnet.bscscan.com/tx/0xa79685d48a61334e1f6a98b74cd9de998110d445935300e399592fc377ed9210>

## 6- Remove W (passed):

<https://testnet.bscscan.com/tx/0xca19a435820ca4ea3fb00c778c324f82be1ccd39fda1387d667a84a53ca3b87e>



# CLASSIFICATION OF RISK

Severity	Description
◆ Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
◆ High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
◆ Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
◆ Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
◆ Gas Optimization / Suggestion	A vulnerability that has an informational character but is not affecting any of the code.

## Findings

Severity	Found
◆ Critical	0
◆ High-Risk	1
◆ Medium-Risk	0
◆ Low-Risk	3
◆ Gas Optimization / Suggestions	1



# MANUAL TESTING

## Centralization – Enabling Trades

**Severity:** High

**Function:** EnableTrading

**Status:** Open

### Overview:

The EnableTrading function permits only the contract owner to activate trading capabilities. Until this function is executed, no investors can buy, sell, or transfer their tokens. This places a high degree of control and centralization in the hands of the contract owner.

```
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    tradeEnable = !tradeEnable;  
}
```

### Suggestion:

To reduce centralization and potential manipulation, consider one of the following approaches:

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2. If manual activation is still desired, consider transferring the ownership of the contract to a trustworthy, third-party entity like a certified "PinkSale Safu" developer. This can give investors more confidence in the eventual activation of trading capabilities, mitigating concerns of potential bad-faith actions by the original owner.



# MANUAL TESTING

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## Centralization – Missing Events

**Severity:** Low

**Subject:** Missing Events

**Status:** Open

### Overview:

They serve as a mechanism for emitting and recording data onto the blockchain, making it transparent and easily accessible.

```
function enableTrading() external onlyOwner {  
    tradeEnable = !tradeEnable;  
}  
function addW(address addr) external onlyOwner {  
    isW[addr] = true;  
}  
function removeW(address addr) external onlyOwner {  
    isW[addr] = false;  
}  
function addB(address addr, uint256 period) public onlyOwner {  
    bl[addr] = block.timestamp + period;  
}  
function removeB(address addr) public onlyOwner {  
    bl[addr] = block.timestamp;  
}
```

### Suggestion:

Emit an event for critical changes.



# MANUAL TESTING

## Centralization – Missing Zero Address

**Severity:** Low

**Subject:** Zero Check

**Status:** Open

### Overview:

functions can take a zero address as a parameter (0x0000...). If a function parameter of address type is not properly validated by checking for zero addresses, there could be serious consequences for the contract's functionality.

```
function addW(address addr) external onlyOwner {  
    isW[addr] = true;  
}  
function removeW(address addr) external onlyOwner {  
    isW[addr] = false;  
}  
function addB(address addr, uint256 period) public onlyOwner {  
    bl[addr] = block.timestamp + period;  
}  
function removeB(address addr) public onlyOwner {  
    bl[addr] = block.timestamp;  
}  
  
function recoverBNBfromContract(address to) external onlyOwner {  
    uint256 contractETHBalance = address(this).balance;  
    require(contractETHBalance > 0, "Amount should be greater than zero");  
    require(contractETHBalance <= address(this).balance, "Insufficient  
Amount");  
    payable(address(to)).transfer(contractETHBalance);  
    emit ETHBalanceRecovered();  
}
```

### Suggestion:

It is suggested that the address should not be zero or dead.



# MANUAL TESTING

## Centralization – Local variable Shadowing

**Severity:** Low

**Subject:** Variable Shadowing

**Status:** Open

**Overview:**

```
function allowance(address owner, address spender) public view returns  
(uint256) {  
    return _allowances[owner][spender];  
}  
function _approve(address owner, address spender, uint256 amount) private {  
    require(owner != address(0), "ERC20: approve from the zero address");  
    require(spender != address(0), "ERC20: approve to the zero address");  
    _allowances[owner][spender] = amount;  
    emit Approval(owner, spender, amount);  
}
```

**Suggestion:**

Rename the local variables that shadow another component.



# MANUAL TESTING

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## Optimization

**Severity:** Optimization

**Subject:** Remove unused code.

**Status:** Open

### Overview:

Unused variables are allowed in Solidity, and they do not pose a direct security issue. It is the best practice though to avoid them.

```
function min(uint256 a, uint256 b) private pure returns (uint256) {  
    return (a > b) ? b : a;
```



# DISCLAIMER

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# ABOUT AUDITACE

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We specialize in providing thorough and reliable audits for Web3 projects. With a team of experienced professionals, we use cutting-edge technology and rigorous methodologies to evaluate the security and integrity of blockchain systems. We are committed to helping our clients ensure the safety and transparency of their digital assets and transactions.



**<https://auditace.tech/>**



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