# SKELETON ECOSYSTEM

SMART CONTRACT AUDIT

# Avenium Chain

## AVE

## BEP20

0x02140823c86c1309b745f073c6b20b3f2b1904aa

# Table of Contents

# Global Disclaimer

This document serves as a disclaimer for the crypto smart contract audit conducted by Skeleton Ecosystem. The purpose of the audit was to review the codebase of the smart contracts for potential vulnerabilities and issues. It is important to note the following:

Limited Scope: The audit is based on the code and information available up to the audit completion date. It does not cover external factors, system interactions, or changes made after the audit. The audit itself can not guarantee 100% safaty and can not detect common scam methods like farming and developer sell-out.

No Guarantee of Security: While we have taken reasonable steps to identify vulnerabilities, it is impossible to guarantee the complete absence of security risks or issues. The audit report provides an assessment of the contract's security as of the audit date.

Continued Development: Smart contracts and blockchain technology are evolving fields. Updates, forks, or changes to the contract post-audit may introduce new risks that were not present during the audit.

Third-party Code: If the smart contract relies on third-party libraries or code, those components were not thoroughly audited unless explicitly stated. Security of these dependencies is the responsibility of their respective developers.

Non-Exhaustive Testing: The audit involved automated analysis, manual review, and testing under controlled conditions. It is possible that certain vulnerabilities or issues may not have been identified.

Risk Evaluation: The audit report includes a risk assessment for identified vulnerabilities. It is recommended that the development team carefully reviews and addresses these risks to mitigate potential exploits.

Not Financial Advice: This audit report is not intended as financial or investment advice. Decisions regarding the use, deployment, or investment in the smart contract should be made based on a comprehensive assessment of the associated risks.

By accessing and using this audit report, you acknowledge and agree to the limitations outlined above. Skeleton Ecosystem and its auditors shall not be held liable for any direct or indirect damages resulting from the use of the audit report or the smart contract itself.

Please consult with legal, technical, and financial professionals before making any decisions related to the smart contract.

## Overview

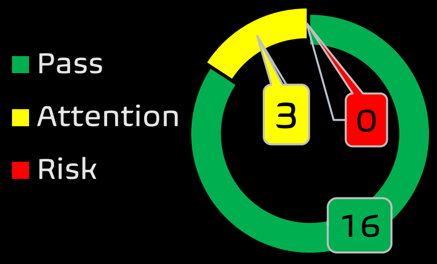
| | |
|---|---|
| Contract Name | AveniumCoin |
| Ticker/Simbol | AVE |
| Blockchain | Binance Smart Chain BEP20 |
| Contract Address | 0x02140823c86c1309b745f073c6b20b3f2b1904aa |
| Creator Address | 0xA26178f3F500d344c2c6AC02dD396159b36d570a |
| Current Owner Address | 0xA26178f3F500d344c2c6AC02dD396159b36d570a |
| Contract Explorer | https://bscscan.com/address/0x02140823C86C1309B745f073c6b20B3f2B1904aA#code |
| Compiler Version | v0.8.7+commit.e28d00a7 |
| License | Unlicense |
| Optimisation | Yes with 200 Runs |
| Total Supply | 150,000,000 **AVE** |
| Decimals | 18 |

### Creation/Audit

| | |
|---|---|
| Contract Deployed | 12.07.2024 |
| Audit Created | 03.08.2024 |
| Audit Update | V 1.0 |

### Verified Socials

| | |
|---|---|
| Website | https://avenium.io/ |
| Telegram | https://t.me/AveniumOfficial |
| Twitter (X) | https://x.com/aveniumchain |



## Contract Function Analysis

✓ Pass ⚠ Attention Item ❗ Risky Item

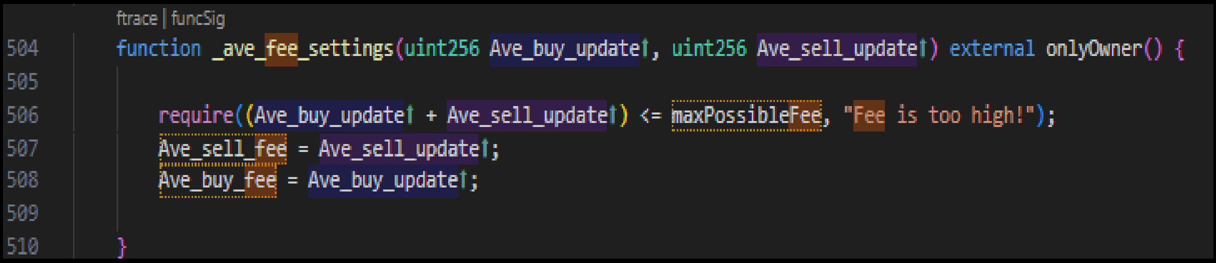
| | | |
|---|---|---|
| Contract Verified | ✓ | The contract source code is uploaded to blockchain explorer and is open source, so everybody can read it. |
| Contract Ownership | | 0xA26178f3F500d344c2c6AC02dD396159b36d570a<br>Deployer |
| Buy Tax | 5 % | Shows the taxes for purchase transactions. Above 10% may be considered a high tax rate. More than 50% tax rate means may not be tradable. Fee can be set! |
| Sell Tax | 5 % | Shows the taxes for sell transactions. Above 10% may be considered a high tax rate. More than 50% tax rate means may not be tradable. Fee can be set! |
| Honeypot Analyse | ✓ | Holder is able to buy and sell. If honeypot: The contract blocks sell transfer from holder wallet. Multiple events may cause honeypot. Trading disabled, extremely high tax |
| Liqudity Status | ✓ | Liqudity status on 02.08.2024<br>Lp Locked: 99.00% UNCX for *365 days.*<br>https://bscscan.com/tx/0xfd812bb08b9d39fcc928c2c5770a88dbdbd5cda3140ba50bef8914dd6ecb1bf7 |
| Trading Disable Functions | ✓ | No Trading suspendable function found.<br>If a suspendable code is included, the token maybe neither be bought or sold (honeypot risk). If contract is renounced this function can't be used |
| Set Fees function | ⚠<br>30%max | Fee Setting function found. Max 30%<br>The contract owner may contain the authority to modify the transaction tax. If the transaction tax is increased to more than 49%, the tokens may not be able to be traded (honeypot risk). |
| Proxy Contract | ✓ | Not a Proxy contract |
| Mint Function | ✓ | No Mint Function detected<br>Mint function is transparent or non-existent. Hidden mint functions may increase the amount of tokens in circulation and effect the price of the token. Owner can mint new tokens and sell. |

| | | |
|---|---|---|
| Balance Modifier Function | ✅ | No Balance Modifier function found.<br>If there is a function for this, the contract owner can have the authority to modify the balance of tokens at other addresses. For example revoke the bought tokens from the holders wallet. Common form of scam: You buy the token, but it's disappearing from your wallet. |
| Blacklist Function | ✅ | No Blacklist Setting function found.<br>If there is a blacklist, some addresses may not be able to trade normally. Example: you buy the token and right after your Wallet getting blacklisted. Like so you will be unable to sell. Honeypot Risk. |
| Whitelist Function | ⚠ | Whitelist Setting function found<br>If there is a function for this Developer can set zero fee or no max wallet size for adresses (for example team wallets can trade without fee. Can cause farming) |
| Hidden Owner Analysis | ✅ | No Hidden or multi owner with authorisation<br>For contract with a hidden owner, developer can still manipulate the contract even if the ownership has been abandoned. |
| Retrieve Ownership Function | ✅ | No Functions found which can retrieve ownership of the contract.<br>If this function exists, it is possible for the project owner to regain ownership even after relinquishing it. Also known as fake renounce. |
| Self Destruct Function | ✅ | No Self Destruct function found.<br>If this function exists and is triggered, the contract will be destroyed, all functions will be unavailable, and all related assets will be erased. |
| Specific Tax Changing Function | ✅ | No Specific Tax Changing Functions found.<br>If it exists, the contract owner may set a very outrageous tax rate for assigned address to block it from trading. Can assign all wallets at once! |
| Trading Cooldown Function | ✅ | No Trading Cooldown Function found. If there is a trading cooldown function, the user will not be able to sell the token within a certain time or block after buying. Like a temporary honeypot. |
| Max Transaction and Holding Modify Function | ⚠ | Max Transaction and Holding Modify function found.<br>If there is a function for this, the maximum trading amount or maximum position can be modified. Can cause honeypot |
| Transaction Limiting Function | ✅ | No Transaction Limiter Function Found.<br>The number of overall token transactions may be limited (honeypot risk) |

# Details of Risk - Attention Items

## ⚠ Set Fee (30% max found)

The contract owner may contain the authority to modify the transaction tax. If the transaction tax is increased to more than 49%, the tokens may not be able to be traded (honeypot risk).



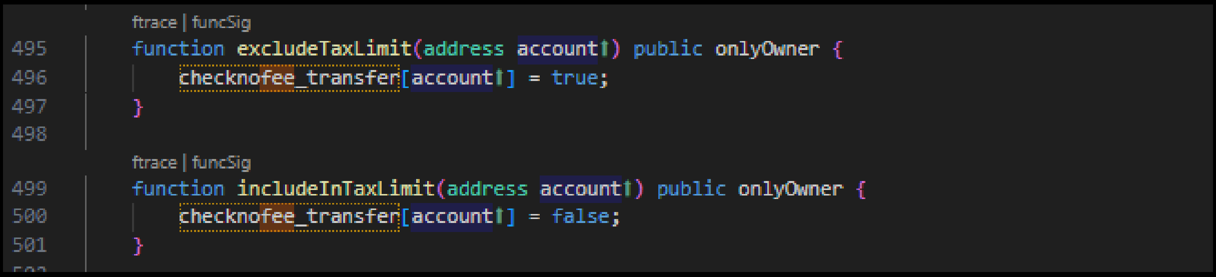
```
ftrace | funcSig
function _ave_fee_settings(uint256 Ave_buy_update, uint256 Ave_sell_update) external onlyOwner() {

    require((Ave_buy_update + Ave_sell_update) <= maxPossibleFee, "Fee is too high!");
    Ave_sell_fee = Ave_sell_update;
    Ave_buy_fee = Ave_buy_update;

}
```

## ⚠ Whitelist

If there is a function for this Developer can set zero fee or no max wallet size for adresses (for example team wallets can trade without fee. Can cause farming)

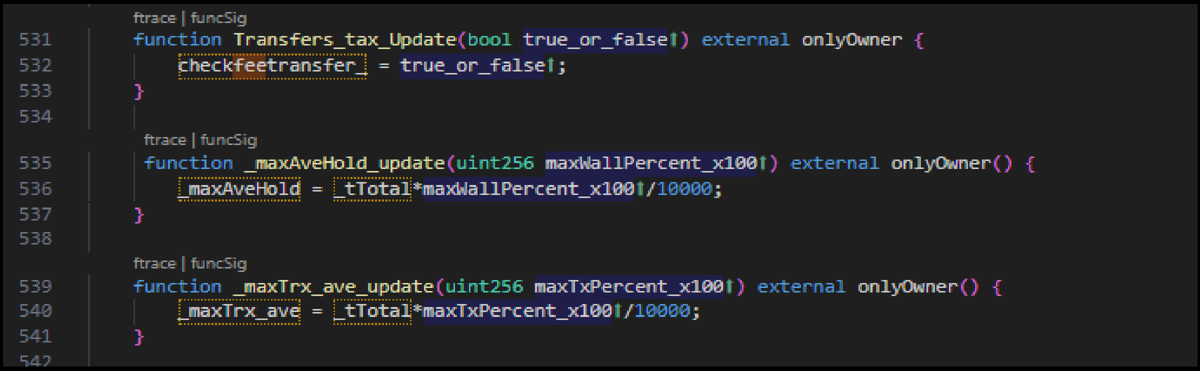


```
ftrace | funcSig
function excludeTaxLimit(address account) public onlyOwner {
    checknofee_transfer[account] = true;
}

ftrace | funcSig
function includeInTaxLimit(address account) public onlyOwner {
    checknofee_transfer[account] = false;
}
```

## ⚠ Max Transaction and Holding Modify function

If there is a function for this, the maximum trading amount or maximum position can be modified. Can cause honeypot



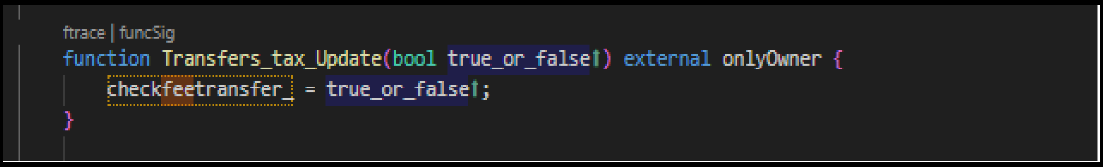
```
ftrace | funcSig
function Transfers_tax_Update(bool true_or_false) external onlyOwner {
    checkfeetransfer_ = true_or_false;
}

ftrace | funcSig
function _maxAveHold_update(uint256 maxWallPercent_x100) external onlyOwner() {
    _maxAveHold = _tTotal*maxWallPercent_x100/10000;
}

ftrace | funcSig
function _maxTrx_ave_update(uint256 maxTxPercent_x100) external onlyOwner() {
    _maxTrx_ave = _tTotal*maxTxPercent_x100/10000;
}
```

## ⚠ Transfer Tax update

Transfer between wallets can be taxed, resulting holding loss when sending AVE token from wallet A to B



```
ftrace | funcSig
function Transfers_tax_Update(bool true_or_false) external onlyOwner {
    checkfeetransfer_ = true_or_false;
}
```

## Contract Security

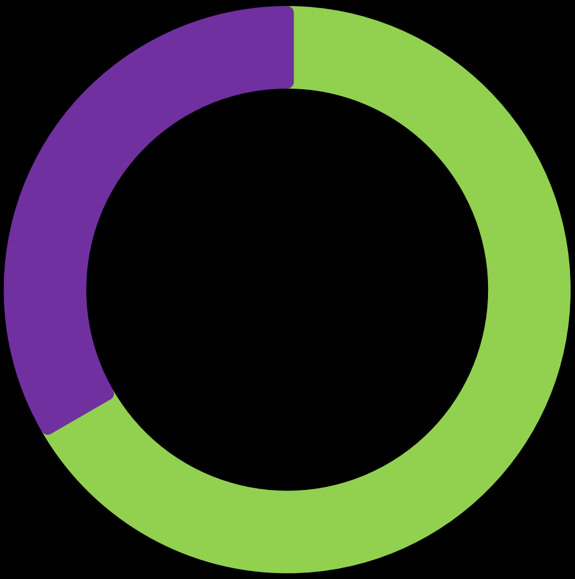
## Total Findings: 7

🟥 High 0

🟨 Medium 0

🟩 Low 4

🟪 Info 2



🟥 **High Severity Issues:** High possibility to cause problems, need to be resolved.

🟨 **Medium Severity Issue:** Will likely cause problems, recommended to resolve.

🟩 **Low Severity Issues:** Won't cause problems, but for improvement purposes could be adjusted.

🟪 **Informational Severity Issues:** Not harmful in any way, information for the developer team.

## Contract Security

## List of Found Issues

### 🟥 High severity Issues: (0)

### 🟨 Medium severity issues: (0)

### 🟩 Low severity issues: (4)

- Missing Events
- Long number literals
- Outdated compiler Version
- Unchecked Array Lenght

### 🟪 Informational severity issues: (2)

- Public Functions Should be Declared External
- State Variables Should be Declared Constant

## Contract Weakness Classisication

THE SMART CONTRACT WEAKNESS CLASSIFICATION REGISTRY (SWC REGISTRY) IS AN IMPLEMENTATION OF THE WEAKNESS CLASSIFICATION SCHEME PROPOSED IN EIP-1470. IT IS LOOSELY ALIGNED TO THE TERMINOLOGIES AND STRUCTURE USED IN THE COMMON WEAKNESS ENUMERATION (CWE) WHILE OVERLAYING A WIDE RANGE OF WEAKNESS VARIANTS THAT ARE

| ID | Description | AI | Manual | Result |
|---|---|---|---|---|
| SWC-100 | Function Default Visibility | Passed | Passed | Passed |
| SWC-101 | Integer Overflow and Underflow | Passed | Passed | Passed |
| SWC-102 | Outdated Compiler Version | low | low | low |
| SWC-103 | Floating Pragma | low | Passed | Passed |
| SWC-104 | Unchecked Call Return Value | Passed | Passed | Passed |
| SWC-105 | Unprotected Ether Withdrawal | Passed | Passed | Passed |
| SWC-106 | Unprotected SELFDESTRUCT Instruction | Passed | Passed | Passed |
| SWC-107 | Reentrancy | Passed | Passed | Passed |
| SWC-108 | State Variable Default Visibility | Passed | Passed | Passed |
| SWC-109 | Uninitialized Storage Pointer | Passed | Passed | Passed |
| SWC-110 | Assert Violation | Passed | Passed | Passed |
| SWC-111 | Use of Deprecated Solidity Functions | Passed | Passed | Passed |
| SWC-112 | Delegatecall to Untrusted Callee | Passed | Passed | Passed |
| SWC-113 | DoS with Failed Call | Passed | Passed | Passed |
| SWC-114 | Transaction Order Dependence | Passed | Passed | Passed |
| SWC-115 | Authorization through tx.origin | Passed | Passed | Passed |
| SWC-116 | Block values as a proxy for time | Passed | Passed | Passed |
| SWC-117 | Signature Malleability | Passed | Passed | Passed |
| SWC-118 | Incorrect Constructor Name | Passed | Passed | Passed |
| SWC-119 | Shadowing State Variables | Passed | Passed | Passed |
| SWC-120 | Weak Sources of Randomness from Chain Attributes | Passed | Passed | Passed |

| | | | | |
|---|---|---|---|---|
| SWC-121 | Missing Protection against Signature Replay Attacks | Passed | Passed | Passed |
| SWC-122 | Lack of Proper Signature Verification | Passed | Passed | Passed |
| SWC-123 | Requirement Violation | Passed | Passed | Passed |
| SWC-124 | Write to Arbitrary Storage Location | Passed | Passed | Passed |
| SWC-125 | Incorrect Inheritance Order | Passed | Passed | Passed |
| SWC-126 | Insufficient Gas Griefing | Passed | Passed | Passed |
| SWC-127 | Arbitrary Jump with Function Type Variable | Passed | Passed | Passed |
| SWC-128 | DoS With Block Gas Limit | Passed | Passed | Passed |
| SWC-129 | Typographical Error | low | Passed | Passed |
| SWC-130 | Right-To-Left-Override control character (U+202E) | Passed | Passed | Passed |
| SWC-131 | Presence of unused variables | Passed | Passed | Passed |
| SWC-132 | Unexpected Ether balance | Passed | Passed | Passed |
| SWC-133 | Hash Collisions With Multiple Variable Length Arguments | Passed | Passed | Passed |
| SWC-134 | Message call with hardcoded gas amount | Passed | Passed | Passed |
| SWC-135 | Code With No Effects | Passed | Passed | Passed |
| SWC-136 | Unencrypted Private Data On-Chain | Passed | Passed | Passed |

## Detected High and Medium Severity Vulnerability Description.

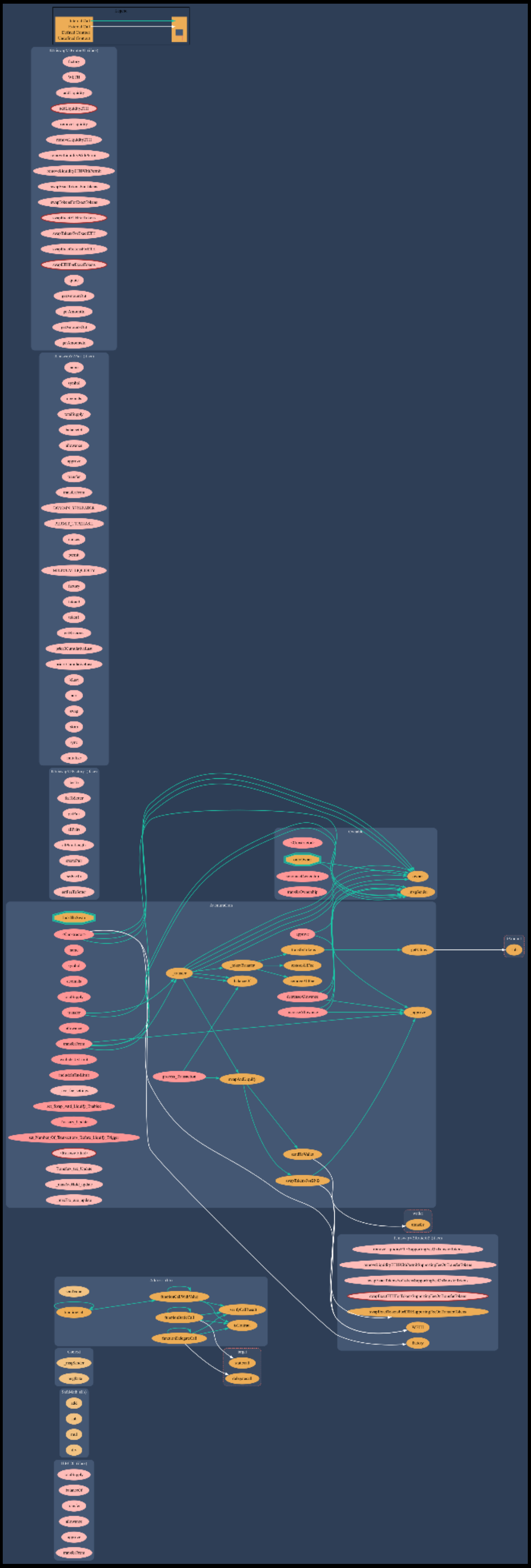
✅ No High or Medium Severity Issues found

### Outdated Compiler Version.

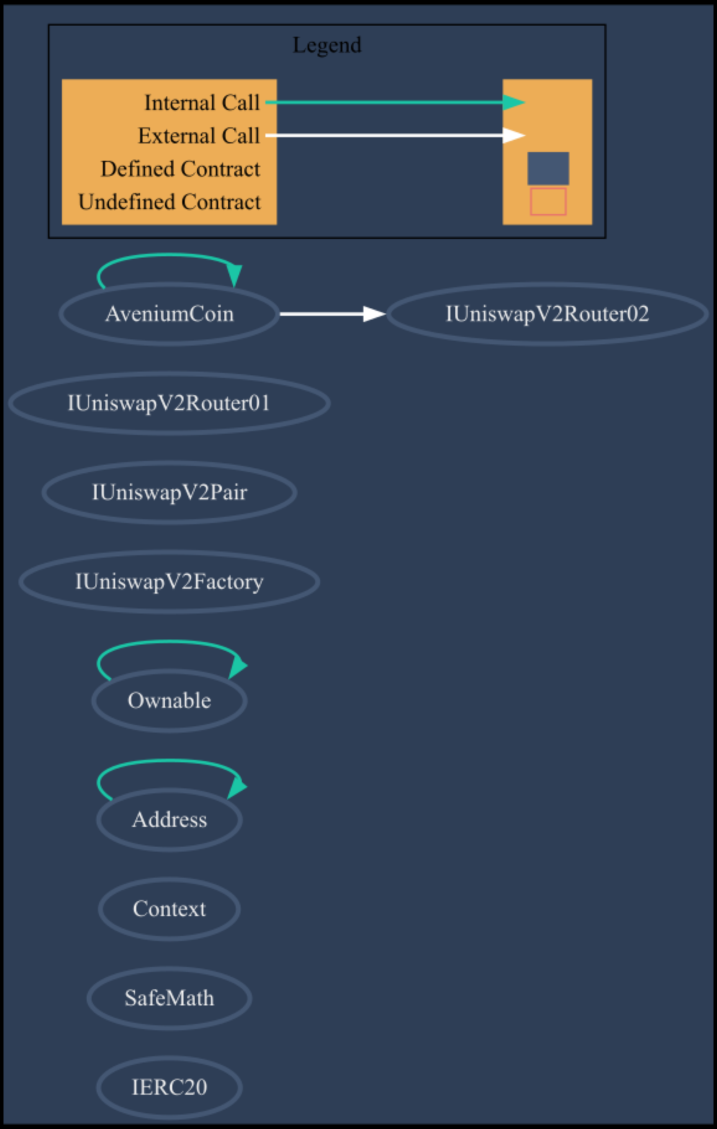
|  |  |  |  |  |
|---|---|---|---|---|
| Item: 1 | Location: | Line 20 | Severity: | 🟩 Low |

|  |  |
|---|---|
| **Function** | Using an outdated compiler version can be problematic especially if there are publicly disclosed bugs and issues that affect the current compiler version.<br>The following outdated versions were detected:<br>/ave.sol - ^0.8.7 |
| **Remedation** | It is recommended to use a recent version of the Solidity compiler that should not be the most recent version, and it should not be an outdated version as well. Using very old versions of Solidity prevents the benefits of bug fixes and newer security checks. Consider using the solidity version v0.8.23, which patches most solidity vulnerabilities. |

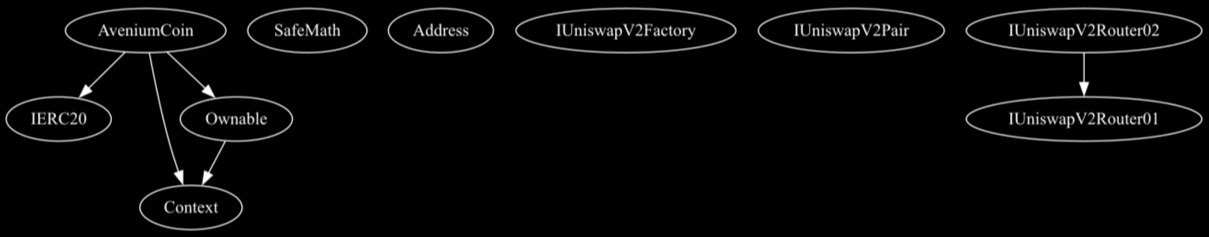
## Contract Flow Graph



## Contract Interaction Graph



# Inheritance Graph



## Contract Functions

| Contract | Type | Bases | | |
|---|---|---|---|---|
| └ | Function Name | Visibility | Mutability | Modifiers |
| | | | | |
| IERC20 | Interface | | | |
| └ | totalSupply | External ❗ | | NO❗ |
| └ | balanceOf | External ❗ | | NO❗ |
| └ | transfer | External ❗ | 🛑 | NO❗ |
| └ | allowance | External ❗ | | NO❗ |
| └ | approve | External ❗ | 🛑 | NO❗ |
| └ | transferFrom | External ❗ | 🛑 | NO❗ |
| | | | | |
| SafeMath | Library | | | |
| └ | add | Internal 🔒 | | |
| └ | sub | Internal 🔒 | | |
| └ | mul | Internal 🔒 | | |
| └ | div | Internal 🔒 | | |
| └ | sub | Internal 🔒 | | |
| └ | div | Internal 🔒 | | |
| | | | | |
| Context | Implementation | | | |
| └ | _msgSender | Internal 🔒 | | |
| └ | _msgData | Internal 🔒 | | |
| | | | | |
| Address | Library | | | |
| └ | isContract | Internal 🔒 | | |
| └ | sendValue | Internal 🔒 | 🛑 | |
| └ | functionCall | Internal 🔒 | 🛑 | |

| | | | | |
|---|---|---|---|---|
| └ | functionCall | Internal 🔒 | 🛑 | |
| └ | functionCallWithValue | Internal 🔒 | 🛑 | |
| └ | functionCallWithValue | Internal 🔒 | 🛑 | |
| └ | functionStaticCall | Internal 🔒 | | |
| └ | functionStaticCall | Internal 🔒 | | |
| └ | functionDelegateCall | Internal 🔒 | 🛑 | |
| └ | functionDelegateCall | Internal 🔒 | 🛑 | |
| └ | _verifyCallResult | Private 🔐 | | |
| | | | | |
| **Ownable** | Implementation | Context | | |
| └ | | Public ❗ | 🛑 | NO❗ |
| └ | owner | Public ❗ | | NO❗ |
| └ | renounceOwnership | Public ❗ | 🛑 | onlyOwner |
| └ | transferOwnership | Public ❗ | 🛑 | onlyOwner |
| | | | | |
| **IUniswapV2Factory** | Interface | | | |
| └ | feeTo | External ❗ | | NO❗ |
| └ | feeToSetter | External ❗ | | NO❗ |
| └ | getPair | External ❗ | | NO❗ |
| └ | allPairs | External ❗ | | NO❗ |
| └ | allPairsLength | External ❗ | | NO❗ |
| └ | createPair | External ❗ | 🛑 | NO❗ |
| └ | setFeeTo | External ❗ | 🛑 | NO❗ |
| └ | setFeeToSetter | External ❗ | 🛑 | NO❗ |
| | | | | |

| IUniswapV2Pair | Interface | | | |
|---|---|---|---|---|
| └ | name | External ❗ | | NO❗ |
| └ | symbol | External ❗ | | NO❗ |
| └ | decimals | External ❗ | | NO❗ |
| └ | totalSupply | External ❗ | | NO❗ |
| └ | balanceOf | External ❗ | | NO❗ |
| └ | allowance | External ❗ | | NO❗ |
| └ | approve | External ❗ | 🛑 | NO❗ |
| └ | transfer | External ❗ | 🛑 | NO❗ |
| └ | transferFrom | External ❗ | 🛑 | NO❗ |
| └ | DOMAIN_SEPARATOR | External ❗ | | NO❗ |
| └ | PERMIT_TYPEHASH | External ❗ | | NO❗ |
| └ | nonces | External ❗ | | NO❗ |
| └ | permit | External ❗ | 🛑 | NO❗ |
| └ | MINIMUM_LIQUIDITY | External ❗ | | NO❗ |
| └ | factory | External ❗ | | NO❗ |
| └ | token0 | External ❗ | | NO❗ |
| └ | token1 | External ❗ | | NO❗ |
| └ | getReserves | External ❗ | | NO❗ |
| └ | price0CumulativeLast | External ❗ | | NO❗ |
| └ | price1CumulativeLast | External ❗ | | NO❗ |
| └ | kLast | External ❗ | | NO❗ |
| └ | burn | External ❗ | 🛑 | NO❗ |
| └ | swap | External ❗ | 🛑 | NO❗ |

| | | | | |
|---|---|---|---|---|
| └ | skim | External ❗ | 🛑 | NO❗ |
| └ | sync | External ❗ | 🛑 | NO❗ |
| └ | initialize | External ❗ | 🛑 | NO❗ |
| | | | | |
| IUniswapV2Router01 | Interface | | | |
| └ | factory | External ❗ | | NO❗ |
| └ | WETH | External ❗ | | NO❗ |
| └ | addLiquidity | External ❗ | 🛑 | NO❗ |
| └ | addLiquidityETH | External ❗ | 💵 | NO❗ |
| └ | removeLiquidity | External ❗ | 🛑 | NO❗ |
| └ | removeLiquidityETH | External ❗ | 🛑 | NO❗ |
| └ | removeLiquidityWithPermit | External ❗ | 🛑 | NO❗ |
| └ | removeLiquidityETHWithPermit | External ❗ | 🛑 | NO❗ |
| └ | swapExactTokensForTokens | External ❗ | 🛑 | NO❗ |
| └ | swapTokensForExactTokens | External ❗ | 🛑 | NO❗ |
| └ | swapExactETHForTokens | External ❗ | 💵 | NO❗ |
| └ | swapTokensForExactETH | External ❗ | 🛑 | NO❗ |
| └ | swapExactTokensForETH | External ❗ | 🛑 | NO❗ |
| └ | swapETHForExactTokens | External ❗ | 💵 | NO❗ |
| └ | quote | External ❗ | | NO❗ |
| └ | getAmountOut | External ❗ | | NO❗ |
| └ | getAmountIn | External ❗ | | NO❗ |
| └ | getAmountsOut | External ❗ | | NO❗ |

| | | | | |
|---|---|---|---|---|
| └ | getAmountsIn | External ❗ | | NO❗ |
| | | | | |
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 | | |
| └ | removeLiquidityETHSupportingFeeOnTransferTokens | External ❗ | 🛑 | NO❗ |
| └ | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ❗ | 🛑 | NO❗ |
| └ | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ❗ | 🛑 | NO❗ |
| └ | swapExactETHForTokensSupportingFeeOnTransferTokens | External ❗ | 💵 | NO❗ |
| └ | swapExactTokensForETHSupportingFeeOnTransferTokens | External ❗ | 🛑 | NO❗ |
| | | | | |
| **AveniumCoin** | Implementation | Context, IERC20, Ownable | | |
| └ | | Public ❗ | 🛑 | NO❗ |
| └ | name | Public ❗ | | NO❗ |
| └ | symbol | Public ❗ | | NO❗ |
| └ | decimals | Public ❗ | | NO❗ |
| └ | totalSupply | Public ❗ | | NO❗ |
| └ | balanceOf | Public ❗ | | NO❗ |
| └ | transfer | Public ❗ | 🛑 | NO❗ |
| └ | allowance | Public ❗ | | NO❗ |
| └ | approve | Public ❗ | 🛑 | NO❗ |
| └ | transferFrom | Public ❗ | 🛑 | NO❗ |
| └ | increaseAllowance | Public ❗ | 🛑 | NO❗ |

| | | | | |
|---|---|---|---|---|
| └ | decreaseAllowance | Public ❗ | 🛑 | NO❗ |
| └ | excludeTaxLimit | Public ❗ | 🛑 | onlyOwner |
| └ | includeInTaxLimit | Public ❗ | 🛑 | onlyOwner |
| └ | _ave_fee_settings | External ❗ | 🛑 | onlyOwner |
| └ | set_Swap_And_Liquify_Enabled | Public ❗ | 🛑 | onlyOwner |
| └ | Treasury_Update | Public ❗ | 🛑 | onlyOwner |
| └ | set_Number_Of_Transactions_Before_Liquify_Trigger | Public ❗ | 🛑 | onlyOwner |
| └ | | External ❗ | 💵 | NO❗ |
| └ | Transfers_tax_Update | External ❗ | 🛑 | onlyOwner |
| └ | _maxAveHold_update | External ❗ | 🛑 | onlyOwner |
| └ | _maxTrx_ave_update | External ❗ | 🛑 | onlyOwner |
| └ | removeAllFee | Private 🔐 | 🛑 | |
| └ | restoreAllFee | Private 🔐 | 🛑 | |
| └ | _approve | Private 🔐 | 🛑 | |
| └ | _transfer | Private 🔐 | 🛑 | |
| └ | sendToWallet | Private 🔐 | 🛑 | |
| └ | swapAndLiquify | Private 🔐 | 🛑 | lockTheSwap |
| └ | process_Transaction | Public ❗ | 🛑 | onlyOwner |
| └ | swapTokensForBNB | Private 🔐 | 🛑 | |
| └ | _tokenTransfer | Private 🔐 | 🛑 | |
| └ | _transferTokens | Private 🔐 | 🛑 | |
| └ | _getValues | Private 🔐 | | |

| | | | |
|---|---|---|---|
| 🛑 | Function can modify state | 💵 | Function is payable |

## Audit Scope

**Audit Method.**

Our smart contract audit is an extensive methodical examination and analysis of the smart contract's code that is used to interact with the blockchain. Goal: discover errors, issues and security vulnaribilities in the code. Findings getting reported and improvements getting suggested.

**Automatic and Manual Review**
We are using automated tools to scan functions and weeknesses of the contract. Transfers, integer over-undeflow checks such as all CWE events.

**Tools we use:**
Visual Studio Code
CWE
SWC
Solidity Scan
SVD

In manual code review our auditor looking at source code and performing line by line examination. This method helps to clarify developer's coding decisions and business logic.

**Skeleton Ecosystem**

https://skeletonecosystem.com

https://github.com/SkeletonEcosystem/Audits