Smart Contract
Security Audit
V1

HEXEL Token Smart Contract

https://www.hexel.cc/

10/10/2022

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Table of Contents

Background

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Project Information

- **Platform**: Ethereum
- **Contract Address**: 0x46ccf2ac66c4c581b072a92524cc07f4cebb2b42
- **Website**: https://www.hexel.cc/
- **Twitter**: https://twitter.com/HEXELCRYPTO
- **Telegram**: https://t.me/HEXELCRYPTO
- **Code Source:** https://etherscan.io/address/0x46ccf2ac66c4c581b072a92524cc07f4cebb2b42#code

Contracts address deployed to test net (Ethereum)

HEXEL Token smart contracts on Ethereum test-net by the auditor to test every function .

https://goerli.etherscan.io/address/0x89da391b3a203faa729d1f1e86abae64f22f4555

Token Information:

Name	HEXEL
Symbol	HEXEL
Total supply	5,555,000
Decimals	18
Router	0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D
Reward Token	0x2b591e99afE9f32eAA6214f7B7629768c40Eeb39
Buy Back Fee	0%
Liquidity Fee	1%
Burn Fee	1%
Reward Fee	3%
Max Wallet Limit	166650
Max Transaction Amount	111100
Buy Back Upper Limit Amount	1
Fee Wallet	0x0000000000000000000000000000000000000000
Fee Wallet Charity	0x0000000000000000000000000000000000000000
Minimum Balance for Dividend	555
Number of token to sell to add liquidity	5555
PCS V2 Pair	0x96Bc4b8aFB40988b7063d37997D341fC589EcF4E
PCS V2 Router	0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D

Executive Summary

According to our assessment, the customer`s solidity smart contract is **Well Secured**.

Well Secured	✓
Secured	
Poor Secured	
Insecure	

Automated checks are with remix IDE. All issues were performed by the team, which included the analysis of code functionality, manual audit found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the audit overview section. The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

Team found 0 critical, 0 high, 0 medium, 3 low, 0 very low-level issues and 1 note in all solidity files of the contract

The files:

HEXEL.sol

File and Function Level Report

File in Scope:

Contract Name	SHA 256 hash	Contract Address
HEXEL.sol	**48e26439ce7b79e7cec3050e244c8a17b2faf01fb5d6e91f40f40c636c2a70a4**	0x46ccf2ac66c4c581b072a92524cc07f4cebb2b42

- Contract: HEXEL
- Inherit: Context, IERC20, Ownable
- Observation: All passed including security check
- Test Report: passed
- Score: passed
- Conclusion: passed

Function	Test Result	Type / Return Type	Score
_name	✓	Read / public	**Passed**
_symbol	✓	Read / public	**Passed**
decimals	✓	Read / public	**Passed**
totalSupply	✓	Read / public	**Passed**
allowance	✓	Read / public	**Passed**
balanceOf	✓	Read / public	**Passed**
_buybackFee	✓	Read / public	**Passed**
_burnFee	✓	Read / public	**Passed**
_liquidityFee	✓	Read / public	**Passed**
_maxTxAmount	✓	Read / public	**Passed**
_maxWalletAmount	✓	Read / public	**Passed**
_rewardFee	✓	Read / public	**Passed**

_taxFee	✓	Read / public	Passed
_tDividendTotal	✓	Read / public	Passed
pcsV2Router	✓	Read / public	Passed
_tTotal	✓	Read / public	Passed
_walletCharityFee	✓	Read / public	Passed
_walletFee	✓	Read / public	Passed
accumulativeDividendOf	✓	Read / public	Passed
buyBackUpperLimitAmount	✓	Read / public	Passed
claimWait	✓	Read / public	Passed
dividendOf	✓	Read / public	Passed
excludedFromDividends	✓	Read / public	Passed
feeWalletCharity	✓	Read / public	Passed
feeWallet	✓	Read / public	Passed
gasForProcessing	✓	Read / public	Passed
getAccountDividendsInfo	✓	Read / public	Passed
getAccountDividendsInfoAtIndex	✓	Read / public	Passed
getLastProcessedIndex	✓	Read / public	Passed
getNumberOfDividendTokenHolders	✓	Read / public	Passed
geUnlockTime	✓	Read / public	Passed
isExcludedFromReward	✓	Read / public	Passed
isExcludedFromFee	✓	Read / public	Passed
lastClaimTimes	✓	Read / public	Passed
lastProcessedIndex	✓	Read / public	Passed
maxBuybackFee	✓	Read / public	Passed
maxBurnFee	✓	Read / public	Passed
maxLiqFee	✓	Read / public	Passed
maxWalletFee	✓	Read / public	Passed
maxTaxFee	✓	Read / public	Passed

minimumTokenBalanceForDividends	✓	Read / public	**Passed**
minMxTxPercentage	✓	Read / public	**Passed**
minMxWalletPercentage	✓	Read / public	**Passed**
name	✓	Read / public	**Passed**
owner	✓	Read / public	**Passed**
numTokensSellToAddToLiquidity	✓	Read / public	**Passed**
reflectionFromToken	✓	Read / public	**Passed**
pcsV2Pair	✓	Read / public	**Passed**
router	✓	Read / public	**Passed**
rewardToken	✓	Read / public	**Passed**
swapAndLiquifyEnabled	✓	Read / public	**Passed**
tokenFromReflection	✓	Read / public	**Passed**
totalDividendsDistributed	✓	Read / public	**Passed**
totalFees	✓	Read / public	**Passed**
withdrawableDividendOf	✓	Read / public	**Passed**
withdrawnDividendOf	✓	Read / public	**Passed**
approve	✓	Write / public	**Passed**
transferFrom	✓	Write / public	**Passed**
transfer	✓	Write / public	**Passed**
lock	✓	Write / public	**Passed**
unLock	✓	Write / public	**Passed**
claim	✓	Write /public	**Passed**
deliver	✓	Write / public	**Passed**
excludeFromDividends	✓	Write / public	**Passed**
excludeFromReward	✓	Write / public	**Passed**
excludeFromfee	✓	Write / public	**Passed**
includeFromReward	✓	Write / public	**Passed**
includeFromfee	✓	Write / public	**Passed**

increaseAllowance	✓	Write / public	**Passed**
decreaseAllowance	✓	Write / public	**Passed**
processDividendTracker	✓	Write / public	**Passed**
process	✓	Write / public	**Passed**
recoverBEP20	✓	Write / public	**Passed**
setAllFeePercent	✓	Write / public	**Passed**
renounceOwnership	✓	Write / public	**Passed**
setBuybackUpperLimit	✓	Write / public	**Passed**
setFeeWalletCharity	✓	Write / public	**Passed**
setFeeWallet	✓	Write / public	**Passed**
setMaxTxPercent	✓	Write / public	**Passed**
setMaxWalletPercent	✓	Write / public	**Passed**
setMinimumTokenBalanceForDividends	✓	Write / public	**Passed**
setSwapAndLiquifyEnabled	✓	Write / public	**Passed**
setWalletCharityFeeTokenType	✓	Write / public	**Passed**
setWalletFeeTokenType	✓	Write / public	**Passed**
transferOwnership	✓	Write / public	**Passed**
updateClaimWait	✓	Write / public	**Passed**
updateGasForProcessing	✓	Write / public	**Passed**
updatePcsV2Router	✓	Write / public	**Passed**
withdrawDividend	✓	Write / public	**Passed**

Issues Checking Status

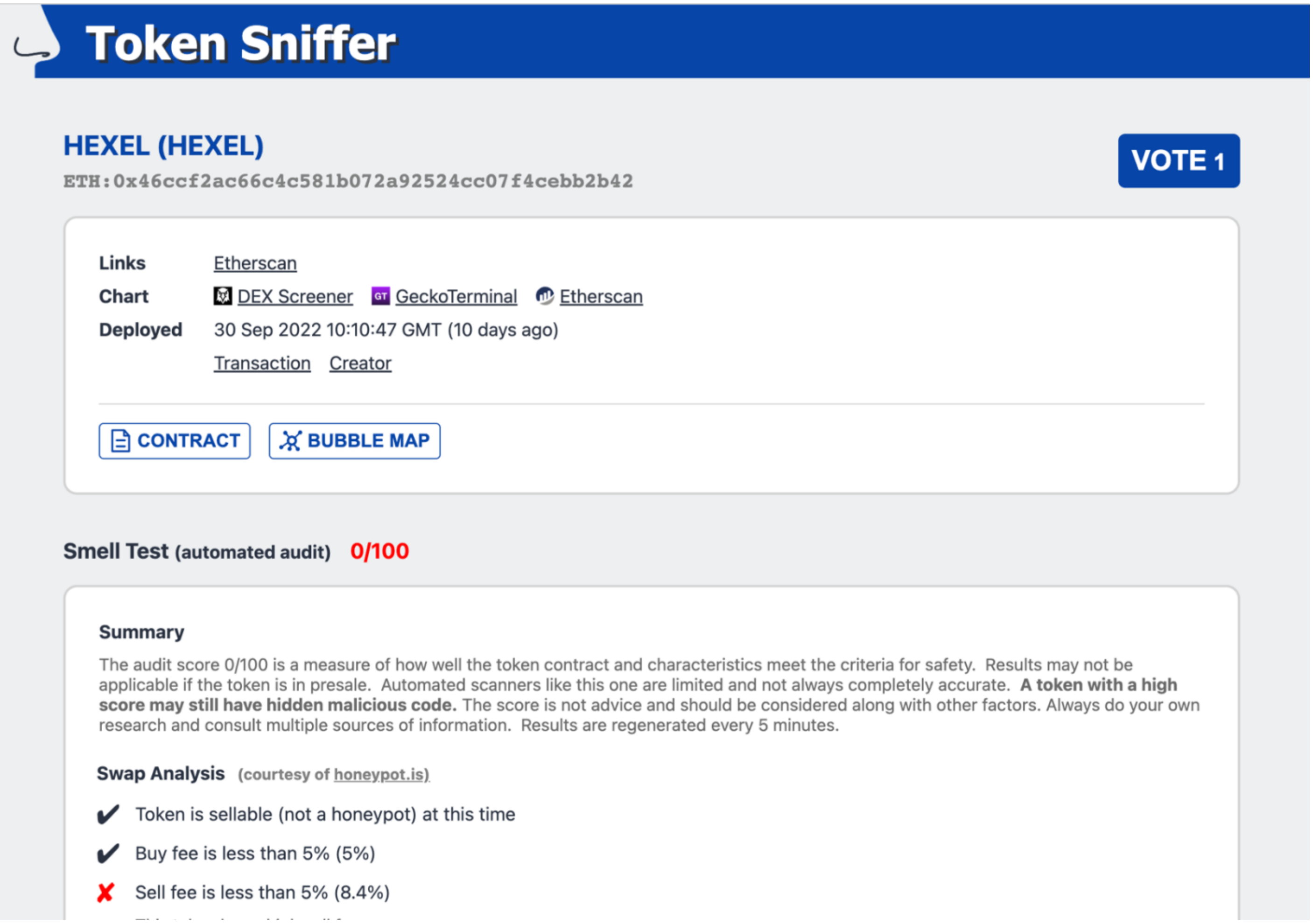
No.	Issue Description	Checking Status
1	Compiler warnings.	**Passed**
2	Race conditions and Reentrancy. Cross-function race conditions.	**Passed**
3	Possible delays in data delivery.	**Passed**
4	Oracle calls.	**Passed**
5	Design Logic.	**Passed**
6	Timestamp dependence.	**Passed with notes**
7	Integer Overflow and Underflow.	**Passed**
8	DoS with Revert.	**Passed**
9	DoS with block gas limit.	**Passed with notes**
10	Methods execution permissions.	**Passed**
11	Economy model. If application logic is based on an incorrect economic model, the application would not function correctly and participants would incur financial losses. This type of issue is most often found in bonus rewards systems, Staking and Farming contracts, Vault and Vesting contracts, etc.	**Passed**
12	The impact of the exchange rate on the logic.	**Passed**
13	Private user data leaks.	**Passed**
14	Malicious Event log.	**Passed**
15	Scoping and Declarations.	**Passed**
16	Uninitialized storage pointers.	**Passed**
17	Arithmetic accuracy.	**Passed**

Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
High	High-level vulnerabilities are difficult to exploit; however, they also have significant impact on smart contract execution, e.g. public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can’t lead to tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can’t have significant impact on execution
Note	Lowest-level vulnerabilities, code style violations and info statements can’t affect smart contract execution and can be ignored.

Important Note:

SaferICO certifies that the taxes defined in this audit report are correct. Token Sniffer taxes are wrong. We tested the taxes on Testnet and found taxes written in this report are correct.
Total taxes = 5% (both buy and sell).



HEXEL (HEXEL)

ETH:0x46ccf2ac66c4c581b072a92524cc07f4cebb2b42

Links	Etherscan
Chart	DEX Screener GeckoTerminal Etherscan
Deployed	30 Sep 2022 10:10:47 GMT (10 days ago) Transaction Creator

Smell Test (automated audit) 0/100

Summary

The audit score 0/100 is a measure of how well the token contract and characteristics meet the criteria for safety. Results may not be applicable if the token is in presale. Automated scanners like this one are limited and not always completely accurate. **A token with a high score may still have hidden malicious code.** The score is not advice and should be considered along with other factors. Always do your own research and consult multiple sources of information. Results are regenerated every 5 minutes.

Swap Analysis (courtesy of honeypot.is)

✓ Token is sellable (not a honeypot) at this time

✓ Buy fee is less than 5% (5%)

✗ Sell fee is less than 5% (8.4%)

Audit Findings

Critical:

No Critical severity vulnerabilities were found.

High:

No High severity vulnerabilities were found.

Medium:

No Medium severity vulnerabilities were found.

Low:

#Contract code size exceeds 24576 bytes

Description

Contract implementation is too large in size to be deployed on main net. Ethereum with its spurious dragon release limited the size of the contracts deployable on main net to 24576 bytes.
The size of the contract HEXEL.sol goes way above this value.
You can read more here:
https://github.com/ethereum/EIPs/issues/170

Remediation

Define and use libraries for pure and view functions e.g. We can create a library which contains all the mathematical operations.

Status: Closed. The team used to enable optimization at 200 to avoid this issue.

#Pragam version not fixed

Description

It is a good practice to lock the solidity version for a live deployment (use 0.8.17 instead of ^0.8.15). contracts should be deployed with the same compiler version and flags that they have been tested the most with. Locking the pragma helps ensure that contracts do not accidentally get deployed using, for example, the latest compiler which may have higher risks of undiscovered bugs. Contracts may also be deployed by others and the pragma indicates the compiler version intended by the original authors.

Remediation

Remove the ^ sign to lock the pragma version.

Status: Acknowledged

#Use of block.timestamp for comparisons

Description

The value of block.timestamp can be manipulated by the miner.
And conditions with strict equality is difficult to achieve -
block.timestamp

Remediation

Avoid use of block.timestamp

Status: Acknowledged

Very Low:

No Very Low severity vulnerabilities were found.

Notes:

#Naming Conventions

Description

The contract follows a consistent naming convention where we are private variables with leading"_" and public variables without it. But we have missed to comply to the condition for certain variable names "__ burnFee " which is public.

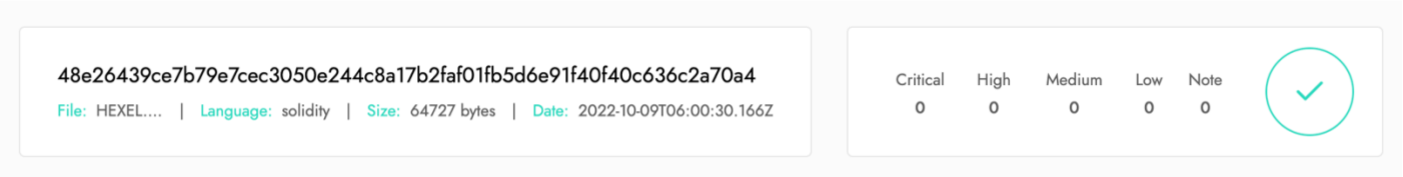
Remediation

Remove "_" from external variable names and add it to private variable names.

Status: Acknowledged

Automatic Testing

1- Check for security



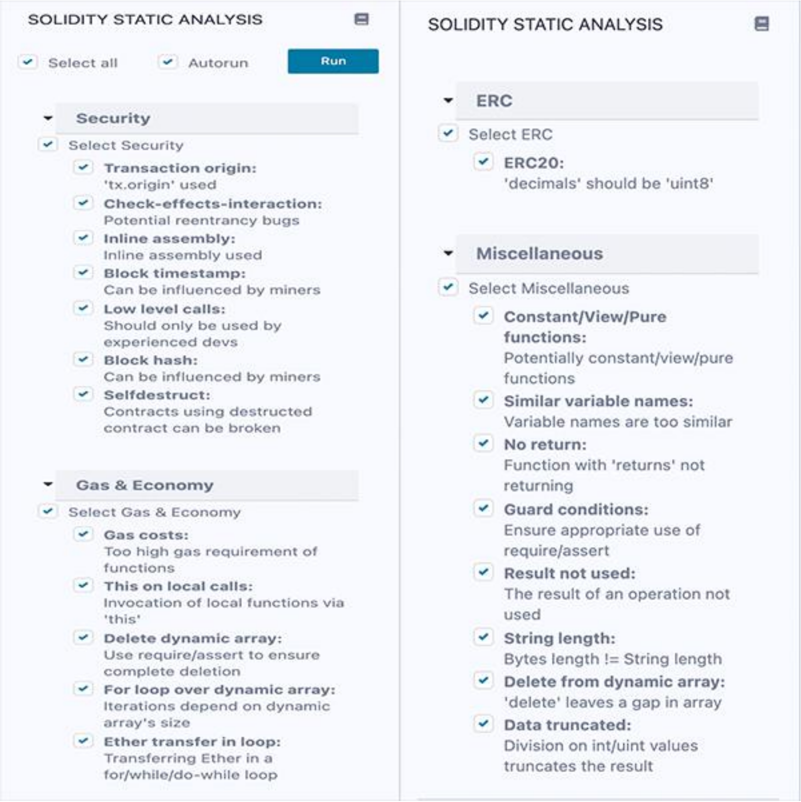
48e26439ce7b79e7cec3050e244c8a17b2faf01fb5d6e91f40f40c636c2a70a4

File: HEXEL.... | Language: solidity | Size: 64727 bytes | Date: 2022-10-09T06:00:30.166Z

Critical	High	Medium	Low	Note
0	0	0	0	0

✓

2- SOLIDITY STATIC ANALYSIS



SOLIDITY STATIC ANALYSIS

☑ Select all ☑ Autorun

Security

☑ Select Security

- ☑ **Transaction origin:** 'tx.origin' used
- ☑ **Check-effects-interaction:** Potential reentrancy bugs
- ☑ **Inline assembly:** Inline assembly used
- ☑ **Block timestamp:** Can be influenced by miners
- ☑ **Low level calls:** Should only be used by experienced devs
- ☑ **Block hash:** Can be influenced by miners
- ☑ **Selfdestruct:** Contracts using destructed contract can be broken

Gas & Economy

☑ Select Gas & Economy

- ☑ **Gas costs:** Too high gas requirement of functions
- ☑ **This on local calls:** Invocation of local functions via 'this'
- ☑ **Delete dynamic array:** Use require/assert to ensure complete deletion
- ☑ **For loop over dynamic array:** Iterations depend on dynamic array's size
- ☑ **Ether transfer in loop:** Transferring Ether in a for/while/do-while loop

SOLIDITY STATIC ANALYSIS

ERC

☑ Select ERC

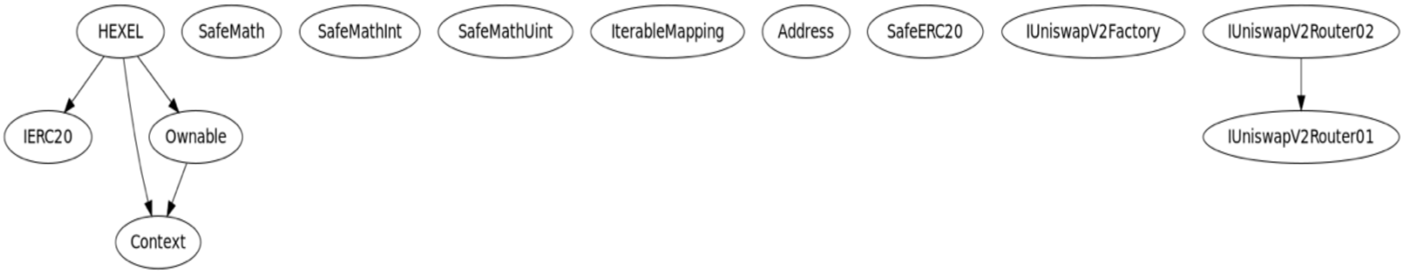
- ☑ **ERC20:** 'decimals' should be 'uint8'

Miscellaneous

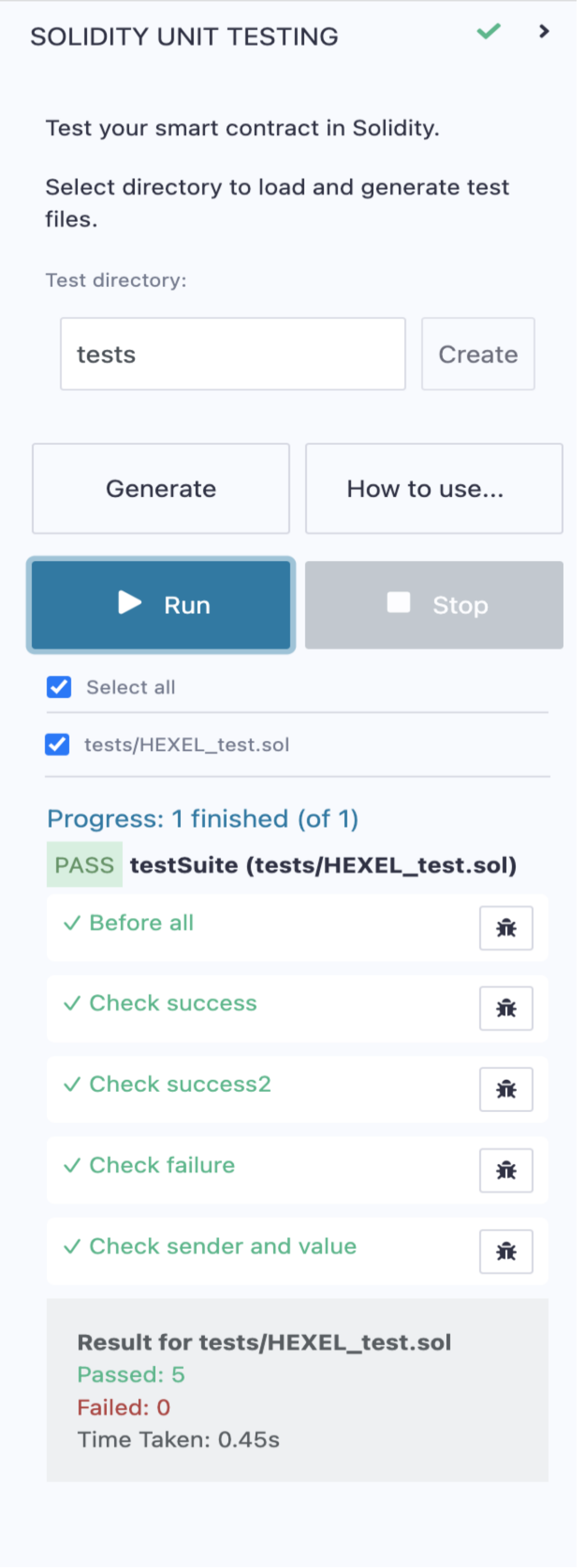
☑ Select Miscellaneous

- ☑ **Constant/View/Pure functions:** Potentially constant/view/pure functions
- ☑ **Similar variable names:** Variable names are too similar
- ☑ **No return:** Function with 'returns' not returning
- ☑ **Guard conditions:** Ensure appropriate use of require/assert
- ☑ **Result not used:** The result of an operation not used
- ☑ **String length:** Bytes length != String length
- ☑ **Delete from dynamic array:** 'delete' leaves a gap in array
- ☑ **Data truncated:** Division on int/uint values truncates the result

3- Inheritance graph



4- SOLIDITY UNIT TESTING



SOLIDITY UNIT TESTING ✓

Test your smart contract in Solidity.

Select directory to load and generate test files.

Test directory: tests

☑ Select all

☑ tests/HEXEL_test.sol

Progress: 1 finished (of 1)

PASS **testSuite (tests/HEXEL_test.sol)**

✓ Before all

✓ Check success

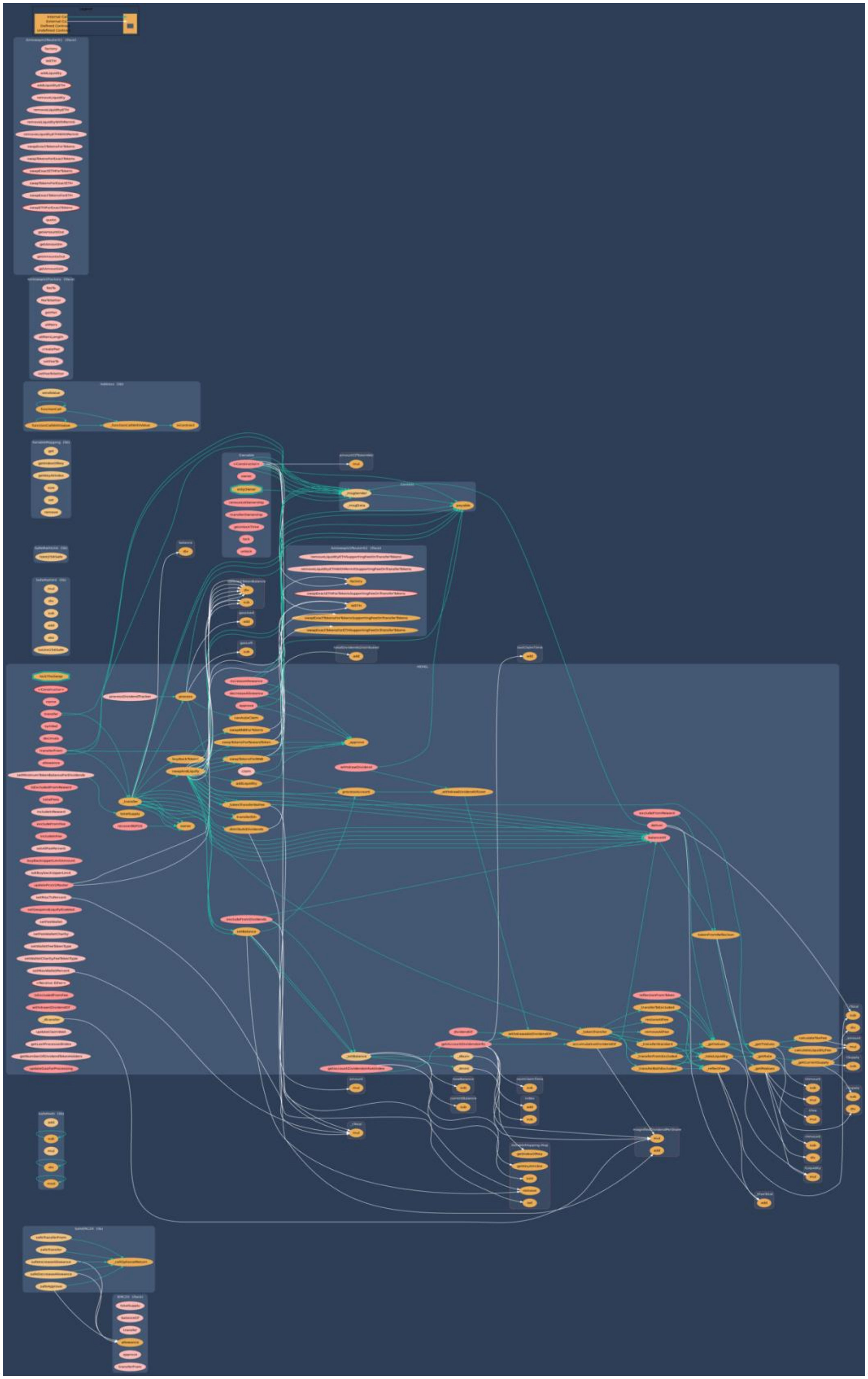
✓ Check success2

✓ Check failure

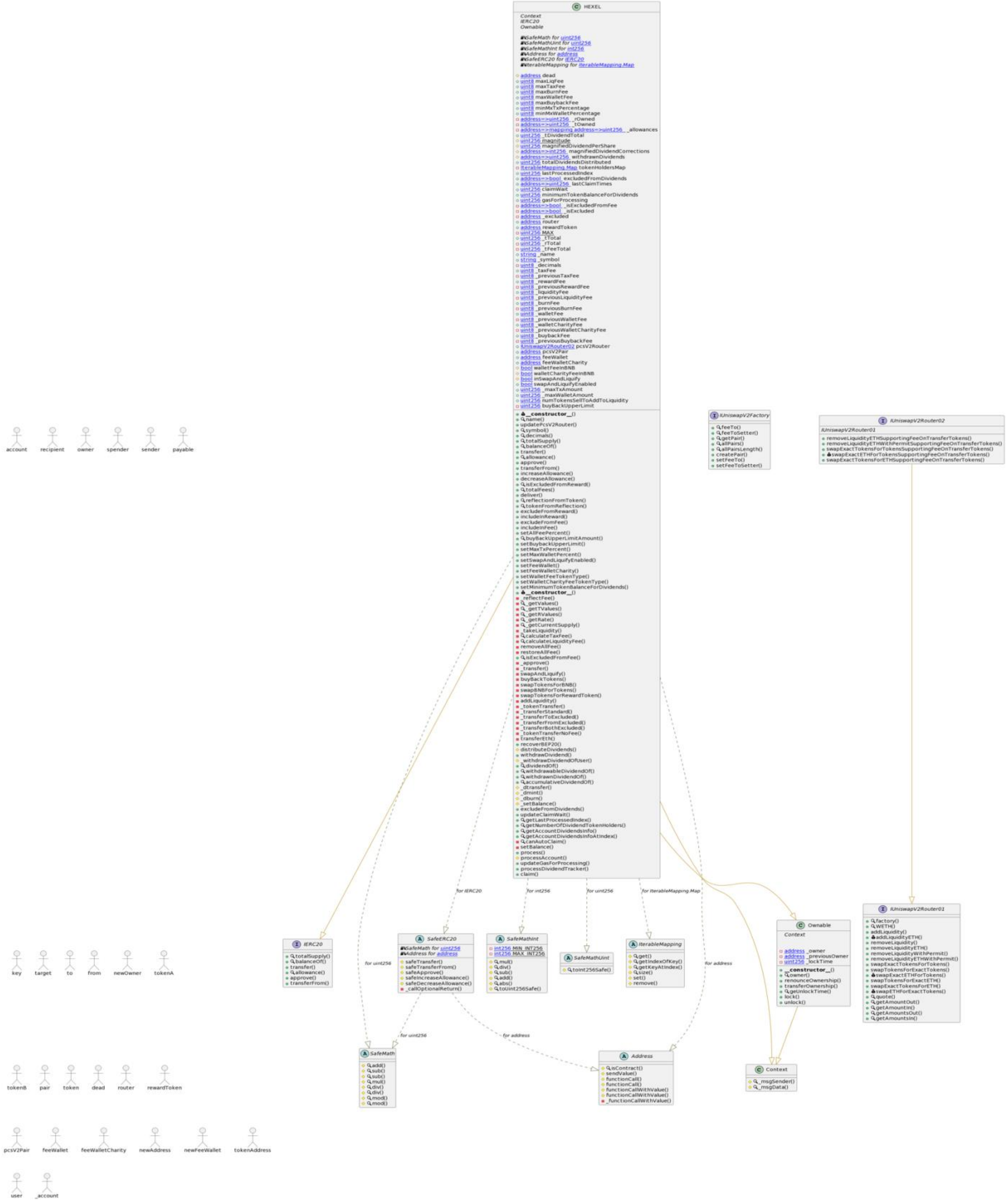
✓ Check sender and value

Result for tests/HEXEL_test.sol
Passed: 5
Failed: 0
Time Taken: 0.45s

5- Call graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
factory
WETH
addLiquidity
addLiquidityETH
removeLiquidity
removeLiquidityETH
removeLiquidityWithPermit
removeLiquidityETHWithPermit
swapExactTokensForTokens
swapTokensForExactTokens
swapExactETHForTokens
swapTokensForExactETH
swapExactTokensForETH
swapETHForExactTokens
quote
getAmountOut
getAmountIn
getAmountsOut
getAmountsIn
feeTo
feeToSetter
getPair
allPairs
allPairsLength
createPair
setFeeTo

Unified Modeling Language (UML)



Functions signature

```
11902160   =>   _getTValues(uint256)
16279055   =>   isContract(address)
39509351   =>   increaseAllowance(address,uint256)
43509138   =>   div(int256,int256)
75128141   =>   calculateTaxFee(uint256)
18160ddd   =>   totalSupply()
70a08231   =>   balanceOf(address)
a9059cbb   =>   transfer(address,uint256)
dd62ed3e   =>   allowance(address,address)
095ea7b3   =>   approve(address,uint256)
23b872dd   =>   transferFrom(address,address,uint256)
771602f7   =>   add(uint256,uint256)
b67d77c5   =>   sub(uint256,uint256)
e31bdc0a   =>   sub(uint256,uint256,string)
c8a4ac9c   =>   mul(uint256,uint256)
a391c15b   =>   div(uint256,uint256)
b745d336   =>   div(uint256,uint256,string)
f43f523a   =>   mod(uint256,uint256)
71af23e8   =>   mod(uint256,uint256,string)
119df25f   =>   _msgSender()
8b49d47e   =>   _msgData()
bbe93d91   =>   mul(int256,int256)
adefc37b   =>   sub(int256,int256)
a5f3c23b   =>   add(int256,int256)
1b5ac4b5   =>   abs(int256)
744f7c7d   =>   toUint256Safe(int256)
e823b9bf   =>   toInt256Safe(uint256)
268d8e2e   =>   get(Map,address)
b45dad3d   =>   getIndexOfKey(Map,address)
7596720f   =>   getKeyAtIndex(Map,uint256)
b1b533f3   =>   size(Map)
6b06f325   =>   set(Map,address,uint256)
0eac8729   =>   remove(Map,address)
24a084df   =>   sendValue(address,uint256)
a0b5ffb0   =>   functionCall(address,bytes)
241b5886   =>   functionCall(address,bytes,string)
2a011594   =>   functionCallWithValue(address,bytes,uint256)
d525ab8a   =>   functionCallWithValue(address,bytes,uint256,string)
36455e42   =>   _functionCallWithValue(address,bytes,uint256,string)
d0c407e1   =>   safeTransfer(IERC20,address,uint256)
5beae096   =>   safeTransferFrom(IERC20,address,address,uint256)
d6dcec8d   =>   safeApprove(IERC20,address,uint256)
390cc046   =>   safeIncreaseAllowance(IERC20,address,uint256)
5164ffed   =>   safeDecreaseAllowance(IERC20,address,uint256)
becc5a20   =>   _callOptionalReturn(IERC20,bytes)
8da5cb5b   =>   owner()
715018a6   =>   renounceOwnership()
f2fde38b   =>   transferOwnership(address)
b6c52324   =>   geUnlockTime()
dd467064   =>   lock(uint256)
a69df4b5   =>   unlock()
017e7e58   =>   feeTo()
094b7415   =>   feeToSetter()
e6a43905   =>   getPair(address,address)
1e3dd18b   =>   allPairs(uint256)
574f2ba3   =>   allPairsLength()
c9c65396   =>   createPair(address,address)
```

```
f46901ed  =>  setFeeTo(address)
a2e74af6  =>  setFeeToSetter(address)
c45a0155  =>  factory()
ad5c4648  =>  WETH()
e8e33700  =>
addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256)
f305d719  =>  addLiquidityETH(address,uint256,uint256,uint256,address,uint256)
baa2abde  =>
removeLiquidity(address,address,uint256,uint256,uint256,address,uint256)
02751cec  =>  removeLiquidityETH(address,uint256,uint256,uint256,address,uint256)
2195995c  =>
removeLiquidityWithPermit(address,address,uint256,uint256,uint256,address,uint256,b
ool,uint8,bytes32,bytes32)
ded9382a  =>
removeLiquidityETHWithPermit(address,uint256,uint256,uint256,address,uint256,bool,u
int8,bytes32,bytes32)
38ed1739  =>  swapExactTokensForTokens(uint256,uint256,address[],address,uint256)
8803dbee  =>  swapTokensForExactTokens(uint256,uint256,address[],address,uint256)
7ff36ab5  =>  swapExactETHForTokens(uint256,address[],address,uint256)
4a25d94a  =>  swapTokensForExactETH(uint256,uint256,address[],address,uint256)
18cbafe5  =>  swapExactTokensForETH(uint256,uint256,address[],address,uint256)
fb3bdb41  =>  swapETHForExactTokens(uint256,address[],address,uint256)
ad615dec  =>  quote(uint256,uint256,uint256)
054d50d4  =>  getAmountOut(uint256,uint256,uint256)
85f8c259  =>  getAmountIn(uint256,uint256,uint256)
d06ca61f  =>  getAmountsOut(uint256,address[])
1f00ca74  =>  getAmountsIn(uint256,address[])
af2979eb  =>
removeLiquidityETHSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,add
ress,uint256)
5b0d5984  =>
removeLiquidityETHWithPermitSupportingFeeOnTransferTokens(address,uint256,uint256,u
int256,address,uint256,bool,uint8,bytes32,bytes32)
5c11d795  =>
swapExactTokensForTokensSupportingFeeOnTransferTokens(uint256,uint256,address[],add
ress,uint256)
b6f9de95  =>
swapExactETHForTokensSupportingFeeOnTransferTokens(uint256,address[],address,uint25
6)
791ac947  =>
swapExactTokensForETHSupportingFeeOnTransferTokens(uint256,uint256,address[],addres
s,uint256)
06fdde03  =>  name()
caebb843  =>  updatePcsV2Router(address)
95d89b41  =>  symbol()
313ce567  =>  decimals()
a457c2d7  =>  decreaseAllowance(address,uint256)
88f82020  =>  isExcludedFromReward(address)
13114a9d  =>  totalFees()
3bd5d173  =>  deliver(uint256)
4549b039  =>  reflectionFromToken(uint256,bool)
2d838119  =>  tokenFromReflection(uint256)
52390c02  =>  excludeFromReward(address)
3685d419  =>  includeInReward(address)
437823ec  =>  excludeFromFee(address)
ea2f0b37  =>  includeInFee(address)
d5f35408  =>  setAllFeePercent(uint8,uint8,uint8,uint8,uint8,uint8,uint8)
bdc653ef  =>  buyBackUpperLimitAmount()
82d2a4bb  =>  setBuybackUpperLimit(uint256)
```

```
d543dbeb  =>  setMaxTxPercent(uint256)
82bf293c  =>  setMaxWalletPercent(uint256)
c49b9a80  =>  setSwapAndLiquifyEnabled(bool)
90d49b9d  =>  setFeeWallet(address)
a79771bb  =>  setFeeWalletCharity(address)
7bd56c8c  =>  setWalletFeeTokenType(bool)
a5f35177  =>  setWalletCharityFeeTokenType(bool)
5ebf4db9  =>  setMinimumTokenBalanceForDividends(uint256)
184d894e  =>  _reflectFee(uint256,uint256)
d4780e36  =>  _getValues(uint256)
1d5671e4  =>  _getRValues(uint256,uint256,uint256,uint256)
94e10784  =>  _getRate()
97a9d560  =>  _getCurrentSupply()
c432df5e  =>  _takeLiquidity(uint256)
cc126a23  =>  calculateLiquidityFee(uint256)
301370af  =>  removeAllFee()
e7e3e3a7  =>  restoreAllFee()
5342acb4  =>  isExcludedFromFee(address)
104e81ff  =>  _approve(address,address,uint256)
30e0789e  =>  _transfer(address,address,uint256)
173865ad  =>  swapAndLiquify(uint256)
fc155d1d  =>  buyBackTokens(uint256)
56c3726b  =>  swapTokensForBNB(uint256)
cf36bec9  =>  swapBNBForTokens(uint256)
589ad64e  =>  swapTokensForRewardToken(uint256)
9cd441da  =>  addLiquidity(uint256,uint256)
b09bbc79  =>  _tokenTransfer(address,address,uint256,bool)
2852df65  =>  _transferStandard(address,address,uint256)
16f1cc83  =>  _transferToExcluded(address,address,uint256)
c7d9be66  =>  _transferFromExcluded(address,address,uint256)
6ff6cdf4  =>  _transferBothExcluded(address,address,uint256)
de621616  =>  _tokenTransferNoFee(address,address,uint256)
e9bb84c2  =>  transferEth(address,uint256)
efa08806  =>  recoverBEP20(address,uint256)
3243c791  =>  distributeDividends(uint256)
6a474002  =>  withdrawDividend()
373de4aa  =>  _withdrawDividendOfUser(address)
91b89fba  =>  dividendOf(address)
a8b9d240  =>  withdrawableDividendOf(address)
aafd847a  =>  withdrawnDividendOf(address)
27ce0147  =>  accumulativeDividendOf(address)
721bf495  =>  _dtransfer(address,address,uint256)
19f93152  =>  _dmint(address,uint256)
8f7e2e92  =>  _dburn(address,uint256)
7eae6759  =>  _setBalance(address,uint256,uint256)
31e79db0  =>  excludeFromDividends(address)
e98030c7  =>  updateClaimWait(uint256)
e7841ec0  =>  getLastProcessedIndex()
64b0f653  =>  getNumberOfDividendTokenHolders()
ad56c13c  =>  getAccountDividendsInfo(address)
f27fd254  =>  getAccountDividendsInfoAtIndex(uint256)
77fdb837  =>  canAutoClaim(uint256)
e8a6a289  =>  setBalance(address,uint256,uint256)
ffb2c479  =>  process(uint256)
bc4c4b37  =>  processAccount(address,bool)
871c128d  =>  updateGasForProcessing(uint256)
700bb191  =>  processDividendTracker(uint256)
4e71d92d  =>  claim()
```

Automatic general report

```
Files Description Table


|  File Name  |  SHA-1 Hash  |
|-------------|--------------|
| /Users/macbook/Desktop/smart contracts/HEXEL.sol |
0856d94bee7d5d9633cdcecd2cfff79621fafc69 |


 Contracts Description Table


|  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 🔒 |   | |
| └ | sub | Internal 🔒 |   | |
| └ | mul | Internal 🔒 |   | |
| └ | div | Internal 🔒 |   | |
| └ | div | Internal 🔒 |   | |
| └ | mod | Internal 🔒 |   | |
| └ | mod | Internal 🔒 |   | |
||||||
| **Context** | Implementation |  |||
| └ | _msgSender | Internal 🔒 |   | |
| └ | _msgData | Internal 🔒 |   | |
||||||
| **SafeMathInt** | Library |  |||
| └ | mul | Internal 🔒 |   | |
| └ | div | Internal 🔒 |   | |
| └ | sub | Internal 🔒 |   | |
| └ | add | Internal 🔒 |   | |
| └ | abs | Internal 🔒 |   | |
| └ | toUint256Safe | Internal 🔒 |   | |
||||||
| **SafeMathUint** | Library |  |||
| └ | toInt256Safe | Internal 🔒 |   | |
||||||
| **IterableMapping** | Library |  |||
| └ | get | Internal 🔒 |   | |
| └ | getIndexOfKey | Internal 🔒 |   | |
| └ | getKeyAtIndex | Internal 🔒 |   | |
| └ | size | Internal 🔒 |   | |
| └ | set | Internal 🔒 | 🛑  | |
| └ | remove | Internal 🔒 | 🛑  | |
||||||
| **Address** | Library |  |||
| └ | isContract | Internal 🔒 |   | |
| └ | sendValue | Internal 🔒 | 🛑  | |
| └ | functionCall | Internal 🔒 | 🛑  | |
| └ | functionCall | Internal 🔒 | 🛑  | |
| └ | functionCallWithValue | Internal 🔒 | 🛑  | |
| └ | functionCallWithValue | Internal 🔒 | 🛑  | |
| └ | _functionCallWithValue | Private 🔐 | 🛑  | |
||||||
| **SafeERC20** | Library |  |||
| └ | safeTransfer | Internal 🔒 | 🛑  | |
| └ | safeTransferFrom | Internal 🔒 | 🛑  | |
| └ | safeApprove | Internal 🔒 | 🛑  | |
| └ | safeIncreaseAllowance | Internal 🔒 | 🛑  | |
| └ | safeDecreaseAllowance | Internal 🔒 | 🛑  | |
| └ | _callOptionalReturn | Private 🔐 | 🛑  | |
||||||
| **Ownable** | Implementation | Context |||
| └ | <Constructor> | Public ❗️ | 🛑  |NO❗️ |
| └ | owner | Public ❗️ |   |NO❗️ |
| └ | renounceOwnership | Public ❗️ | 🛑  | onlyOwner |
| └ | transferOwnership | Public ❗️ | 🛑  | onlyOwner |
| └ | geUnlockTime | Public ❗️ |   |NO❗️ |
| └ | lock | Public ❗️ | 🛑  | onlyOwner |
| └ | unlock | Public ❗️ | 🛑  |NO❗️ |
||||||
| **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❗️ |
||||||
| **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❗️ |
||||||
| **HAITO** | Implementation | Context, IERC20, Ownable |||
| └ | <Constructor> | Public ❗️ |  💵 |NO❗️ |
| └ | name | Public ❗️ |   |NO❗️ |
| └ | updatePcsV2Router | Public ❗️ | 🛑  | onlyOwner |
| └ | 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❗️ |
| └ | isExcludedFromReward | Public ❗️ |   |NO❗️ |
| └ | totalFees | Public ❗️ |   |NO❗️ |
| └ | deliver | Public ❗️ | 🛑  |NO❗️ |
| └ | reflectionFromToken | Public ❗️ |   |NO❗️ |
| └ | tokenFromReflection | Public ❗️ |   |NO❗️ |
| └ | excludeFromReward | Public ❗️ | 🛑  | onlyOwner |
| └ | includeInReward | External ❗️ | 🛑  | onlyOwner |
| └ | excludeFromFee | Public ❗️ | 🛑  | onlyOwner |
| └ | includeInFee | Public ❗️ | 🛑  | onlyOwner |
| └ | setAllFeePercent | External ❗️ | 🛑  | onlyOwner |
| └ | buyBackUpperLimitAmount | Public ❗️ |   |NO❗️ |
| └ | setBuybackUpperLimit | External ❗️ | 🛑  | onlyOwner |
| └ | setMaxTxPercent | External ❗️ | 🛑  | onlyOwner |
| └ | setMaxWalletPercent | External ❗️ | 🛑  | onlyOwner |
| └ | setSwapAndLiquifyEnabled | Public ❗️ | 🛑  | onlyOwner |
| └ | setFeeWallet | External ❗️ | 🛑  | onlyOwner |
| └ | setFeeWalletCharity | External ❗️ | 🛑  | onlyOwner |
| └ | setWalletFeeTokenType | External ❗️ | 🛑  | onlyOwner |
| └ | setWalletCharityFeeTokenType | External ❗️ | 🛑  | onlyOwner |
| └ | setMinimumTokenBalanceForDividends | External ❗️ | 🛑  | onlyOwner |
| └ | <Receive Ether> | External ❗️ |  💵 |NO❗️ |
| └ | _reflectFee | Private 🔐 | 🛑  | |
| └ | _getValues | Private 🔐 |   | |
| └ | _getTValues | Private 🔐 |   | |
| └ | _getRValues | Private 🔐 |   | |
| └ | _getRate | Private 🔐 |   | |
| └ | _getCurrentSupply | Private 🔐 |   | |
| └ | _takeLiquidity | Private 🔐 | 🛑  | |
| └ | calculateTaxFee | Private 🔐 |   | |
| └ | calculateLiquidityFee | Private 🔐 |   | |
| └ | removeAllFee | Private 🔐 | 🛑  | |
| └ | restoreAllFee | Private 🔐 | 🛑  | |
| └ | isExcludedFromFee | Public ❗️ |   |NO❗️ |
| └ | _approve | Private 🔐 | 🛑  | |
| └ | _transfer | Private 🔐 | 🛑  | |
| └ | swapAndLiquify | Private 🔐 | 🛑  | lockTheSwap |
| └ | buyBackTokens | Private 🔐 | 🛑  | lockTheSwap |
| └ | swapTokensForBNB | Private 🔐 | 🛑  | |
| └ | swapBNBForTokens | Private 🔐 | 🛑  | |
| └ | swapTokensForRewardToken | Private 🔐 | 🛑  | |
| └ | addLiquidity | Private 🔐 | 🛑  | |
| └ | _tokenTransfer | Private 🔐 | 🛑  | |
| └ | _transferStandard | Private 🔐 | 🛑  | |
| └ | _transferToExcluded | Private 🔐 | 🛑  | |
| └ | _transferFromExcluded | Private 🔐 | 🛑  | |
| └ | _transferBothExcluded | Private 🔐 | 🛑  | |
| └ | _tokenTransferNoFee | Private 🔐 | 🛑  | |
| └ | transferEth | Private 🔐 | 🛑  | |
| └ | recoverBEP20 | Public ❗️ | 🛑  | onlyOwner |
| └ | distributeDividends | Internal 🔒 | 🛑  | |
| └ | withdrawDividend | Public ❗️ | 🛑  |NO❗️ |
| └ | _withdrawDividendOfUser | Internal 🔒 | 🛑  | |
| └ | dividendOf | Public ❗️ |   |NO❗️ |
| └ | withdrawableDividendOf | Public ❗️ |   |NO❗️ |
| └ | withdrawnDividendOf | Public ❗️ |   |NO❗️ |
| └ | accumulativeDividendOf | Public ❗️ |   |NO❗️ |
| └ | _dtransfer | Internal 🔒 | 🛑  | |
| └ | _dmint | Internal 🔒 | 🛑  | |
| └ | _dburn | Internal 🔒 | 🛑  | |
| └ | _setBalance | Internal 🔒 | 🛑  | |
| └ | excludeFromDividends | Public ❗️ | 🛑  | onlyOwner |
| └ | updateClaimWait | External ❗️ | 🛑  | onlyOwner |
| └ | getLastProcessedIndex | External ❗️ |   |NO❗️ |
| └ | getNumberOfDividendTokenHolders | External ❗️ |   |NO❗️ |
| └ | getAccountDividendsInfo | Public ❗️ |   |NO❗️ |
| └ | getAccountDividendsInfoAtIndex | Public ❗️ |   |NO❗️ |
| └ | canAutoClaim | Private 🔐 |   | |
| └ | setBalance | Private 🔐 | 🛑  | |
| └ | process | Public ❗️ | 🛑  |NO❗️ |
| └ | processAccount | Internal 🔒 | 🛑  | |
| └ | updateGasForProcessing | Public ❗️ | 🛑  | onlyOwner |
| └ | processDividendTracker | External ❗️ | 🛑  |NO❗️ |
| └ | claim | External ❗️ | 🛑  |NO❗️ |


 Legend

|  Symbol  |  Meaning  |
|:--------:|-----------|
|    🛑    | Function can modify state |
|    💵    | Function is payable |
```

Conclusion

The contracts are written systematically. Team found no critical issues. So, it is good to go for production.

Since possible test cases can be unlimited and developer level documentation (code flow diagram with function level description) not provided, for such an extensive smart contract protocol, we provide no such guarantee of future outcomes. We have used all the latest static tools and manual observations to cover maximum possible test cases to scan Everything.

Security state of the reviewed contract is “Well Secured”.

✓No mint function.
✓No volatile code.
✓ No high severity issues were found.

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against the team on the basis of what it says or doesn’t say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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