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AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

PEPEPUNK

DATED : 11 May 23'

AUDIT SUMMARY

Project name – PEPEPUNK

Date: 11 May, 2023

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

Audit Status: Passed

Issues Found

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

USED TOOLS

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/token/0xEe0a9C84Ab77c5Ac4b8c798f065C8AB89f28662e

Token Information

Token Name : PEPEPUNK

Token Symbol: PEPEPUNK

Decimals: 9

Token Supply: 100,000,000,000

Token Address:
0xf4167609449b08C49D40948aA374E3Dd5f1d3398

Checksum:
e0d2a997bfb99f8db6f663d5b2c0c0fe9f550f6f

Owner:
0xE450E05d940B094dC9cf31947a7eE2977a5B7FA7
(at time of writing the audit)

Deployer:
0xE450E05d940B094dC9cf31947a7eE2977a5B7FA7

TOKEN OVERVIEW

Fees:

Buy Fees: 0%

Sell Fees: 10%

Transfer Fees: 0%

Fees Privilege: Owner

Ownership: Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: changing fees - enabling trades

AUDIT METHODOLOGY

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 isexercised 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
- Private modifier
- Multiple Sends
- Using Suicide
- Gas Limitand Loops
- Address hardcoded
- Exception Disorder
- Using inline assembly
- Divide before multiply
- Missing Zero Address Validation
- Compiler version not fixed
- **Gasless Send**
- Using block.timestamp
- Re-entrancy
- Tautology or contradiction
- Timestamp Dependence
- Revert/require functions
- Use of tx.origin
- Integer overflow/underflow
- Dangerous strict equalities
- Using SHA3
- Using throw

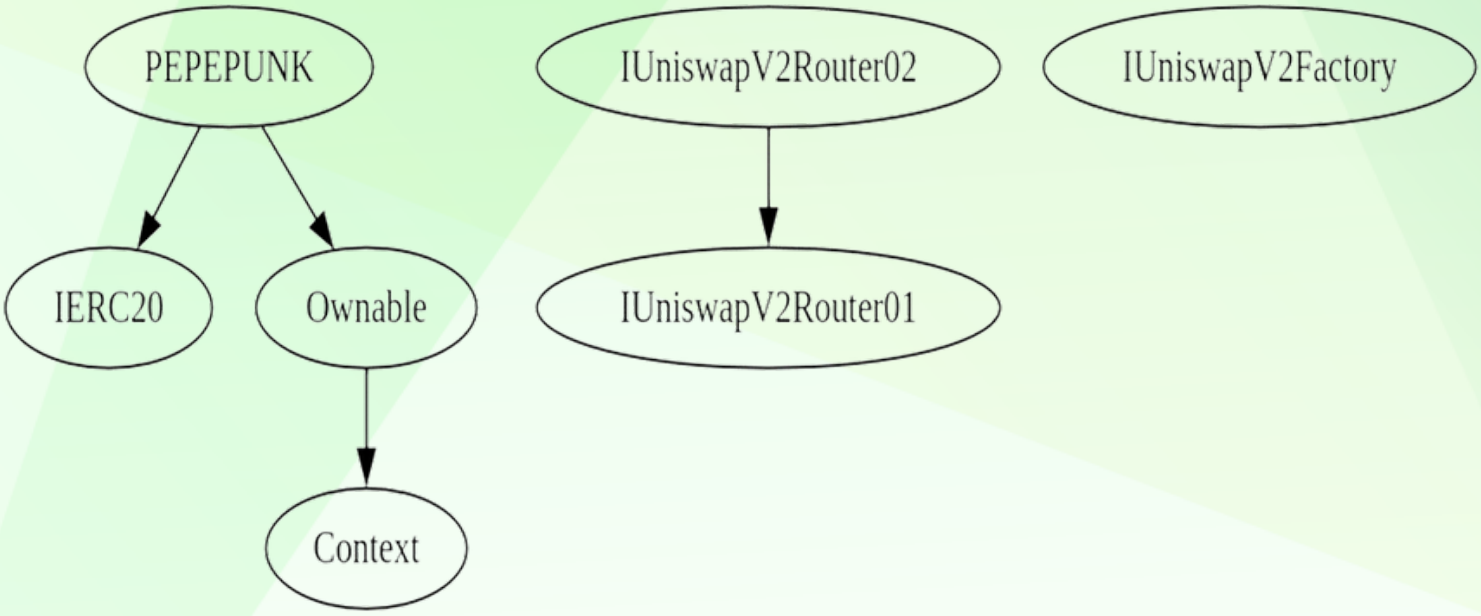
CLASSIFICATION OF RISK

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	0
Gas Optimization / Suggestions	1

INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to set set sell tax over 10% (until 7 days after launch)
- Owner is not able to set buy or transfer tax (0% both)
- Owner is not able to set a max buy/transfer/wallet/sell amount
- Owner is not able to blacklist an arbitrary wallet
- Owner is not able to disable trades
- Owner is not able to mint new tokens
- **Owner must enable trades for holders to be able to trade**

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
PEPEPUNK	Implementation	IERC20, Ownable		
└	<Constructor>	Public ❗	🛑	NO ❗
└	<Receive Ether>	External ❗	💵	NO ❗
└	totalSupply	External ❗		NO ❗
└	name	Public ❗		NO ❗
└	symbol	Public ❗		NO ❗
└	decimals	Public ❗		NO ❗
└	balanceOf	Public ❗		NO ❗
└	allowance	External ❗		NO ❗
└	approve	Public ❗	🛑	NO ❗
└	_approve	Internal 🔒	🛑	
└	approveMax	External ❗	🛑	NO ❗
└	transfer	External ❗	🛑	NO ❗
└	transferFrom	External ❗	🛑	NO ❗
└	_transferFrom	Internal 🔒	🛑	
└	takeFee	Internal 🔒	🛑	
└	_basicTransfer	Internal 🔒	🛑	
└	shouldTakeFee	Internal 🔒		
└	shouldDoContractSwap	Internal 🔒		
└	isFeeExcluded	Public ❗		NO ❗
└	doContractSwap	Internal 🔒	🛑	swapping
└	swapTokensForEth	Private 🔐	🛑	
└	setIsFeeExempt	External ❗	🛑	onlyOwner
└	setDoContractSwap	External ❗	🛑	onlyOwner
└	changeMarketingWallet	External ❗	🛑	onlyOwner
└	changeSellFees	External ❗	🛑	onlyOwner
└	enableTrading	External ❗	🛑	onlyOwner
└	setAuthorizedWallets	External ❗	🛑	onlyOwner
└	rescueBNB	External ❗	🛑	onlyOwner
└	changePair	External ❗	🛑	onlyOwner
Ownable	Implementation	Context		
└	<Constructor>	Public ❗	🛑	NO ❗
└	owner	Public ❗		NO ❗
└	_checkOwner	Internal 🔒		
└	renounceOwnership	Public ❗	🛑	onlyOwner
└	transferOwnership	Public ❗	🛑	onlyOwner
└	_transferOwnership	Internal 🔒	🛑	

CONTRACT ASSESMENT

Context	Implementation			
└	_msgSender	Internal 🔒			
└	_msgData	Internal 🔒			
IERC20	Interface			
└	totalSupply	External ❗		NO ❗
└	balanceOf	External ❗		NO ❗
└	transfer	External ❗	🛑	NO ❗
└	allowance	External ❗		NO ❗
└	approve	External ❗	🛑	NO ❗
└	transferFrom	External ❗	🛑	NO ❗
IUniswapV2Router02	Interface	IUniswapV2Router01			
└	removeLiquidityETHSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
└	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
└	swapExactTokensForTokensSupportingFeeOnTransferTokens	External ❗	🛑	NO ❗
└	swapExactETHForTokensSupportingFeeOnTransferTokens	External ❗	💵	NO ❗
└	swapExactTokensForETHSupportingFeeOnTransferTokens	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 ❗
IUniswapV2Factory	Interface				
└	feeTo	External ❗		NO ❗
└	feeToSetter	External ❗		NO ❗

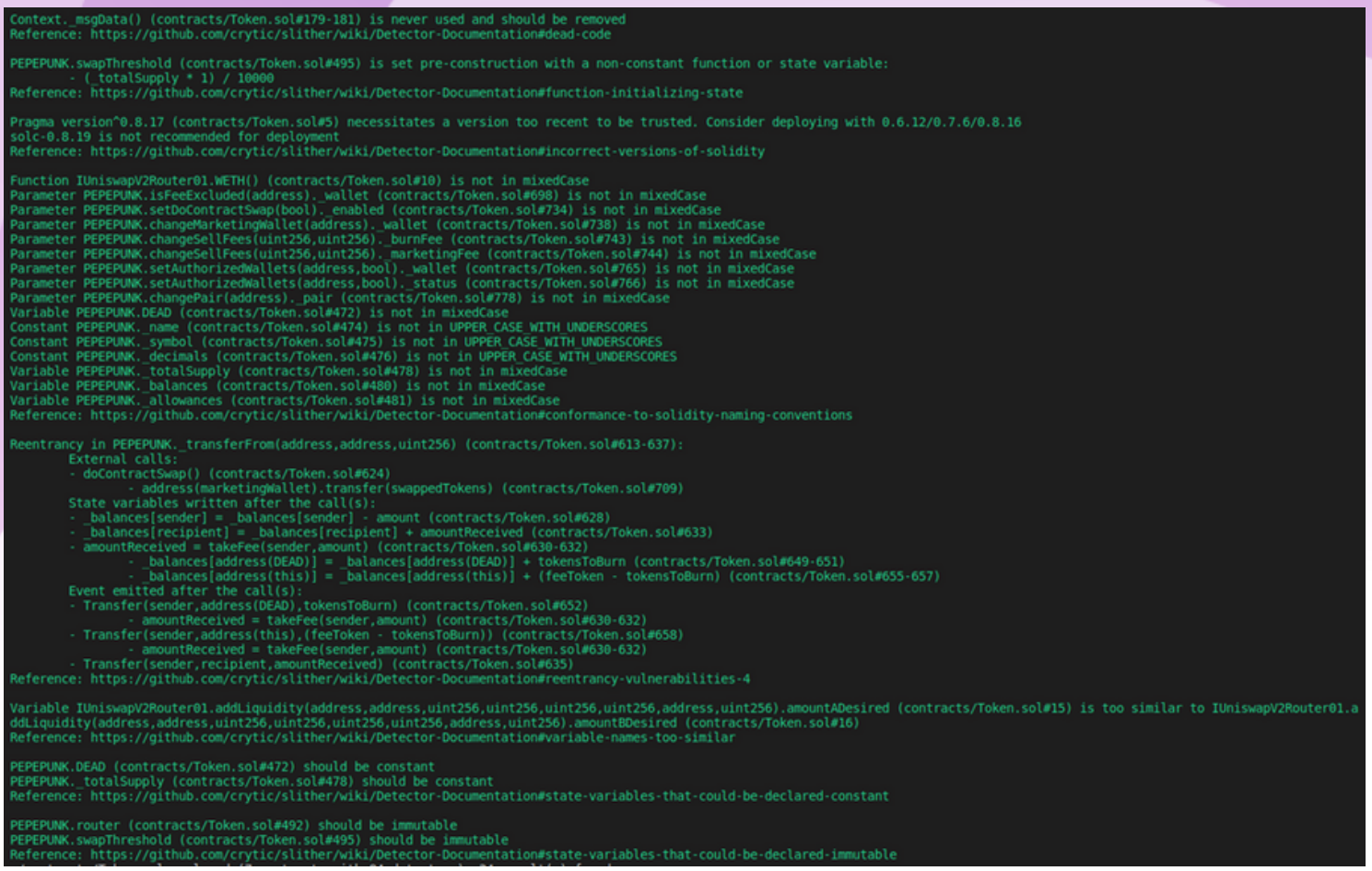
CONTRACT ASSESMENT

└	getPair	External ❗		NO ❗
└	allPairs	External ❗		NO ❗
└	allPairsLength	External ❗		NO ❗
└	createPair	External ❗	🛑	NO ❗
└	setFeeTo	External ❗	🛑	NO ❗
└	setFeeToSetter	External ❗	🛑	NO ❗

Legend

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

STATIC ANALYSIS



```
Context._msgData() (contracts/Token.sol#179-181) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

PEPEPUNK.swapThreshold (contracts/Token.sol#495) is set pre-construction with a non-constant function or state variable:
        - (_totalSupply * 1) / 10000
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#function-initializing-state

Pragma version^0.8.17 (contracts/Token.sol#5) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.19 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Function IUniswapV2Router01.WETH() (contracts/Token.sol#10) is not in mixedCase
Parameter PEPEPUNK.isFeeExcluded(address)._wallet (contracts/Token.sol#698) is not in mixedCase
Parameter PEPEPUNK.setDoContractSwap(bool)._enabled (contracts/Token.sol#734) is not in mixedCase
Parameter PEPEPUNK.changeMarketingWallet(address)._wallet (contracts/Token.sol#738) is not in mixedCase
Parameter PEPEPUNK.changeSellFees(uint256,uint256)._burnFee (contracts/Token.sol#743) is not in mixedCase
Parameter PEPEPUNK.changeSellFees(uint256,uint256)._marketingFee (contracts/Token.sol#744) is not in mixedCase
Parameter PEPEPUNK.setAuthorizedWallets(address,bool)._wallet (contracts/Token.sol#765) is not in mixedCase
Parameter PEPEPUNK.setAuthorizedWallets(address,bool)._status (contracts/Token.sol#766) is not in mixedCase
Parameter PEPEPUNK.changePair(address)._pair (contracts/Token.sol#778) is not in mixedCase
Variable PEPEPUNK.DEAD (contracts/Token.sol#472) is not in mixedCase
Constant PEPEPUNK._name (contracts/Token.sol#474) is not in UPPER_CASE_WITH_UNDERSCORES
Constant PEPEPUNK._symbol (contracts/Token.sol#475) is not in UPPER_CASE_WITH_UNDERSCORES
Constant PEPEPUNK._decimals (contracts/Token.sol#476) is not in UPPER_CASE_WITH_UNDERSCORES
Variable PEPEPUNK._totalSupply (contracts/Token.sol#478) is not in mixedCase
Variable PEPEPUNK._balances (contracts/Token.sol#480) is not in mixedCase
Variable PEPEPUNK._allowances (contracts/Token.sol#481) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Reentrancy in PEPEPUNK._transferFrom(address,address,uint256) (contracts/Token.sol#613-637):
        External calls:
        - doContractSwap() (contracts/Token.sol#624)
                - address(marketingWallet).transfer(swappedTokens) (contracts/Token.sol#709)
        State variables written after the call(s):
        - _balances[sender] = _balances[sender] - amount (contracts/Token.sol#628)
        - _balances[recipient] = _balances[recipient] + amountReceived (contracts/Token.sol#633)
        - amountReceived = takeFee(sender,amount) (contracts/Token.sol#630-632)
                - _balances[address(DEAD)] = _balances[address(DEAD)] + tokensToBurn (contracts/Token.sol#649-651)
                - _balances[address(this)] = _balances[address(this)] + (feeToken - tokensToBurn) (contracts/Token.sol#655-657)
        Event emitted after the call(s):
        - Transfer(sender,address(DEAD),tokensToBurn) (contracts/Token.sol#652)
                - amountReceived = takeFee(sender,amount) (contracts/Token.sol#630-632)
        - Transfer(sender,address(this),(feeToken - tokensToBurn)) (contracts/Token.sol#658)
                - amountReceived = takeFee(sender,amount) (contracts/Token.sol#630-632)
        - Transfer(sender,recipient,amountReceived) (contracts/Token.sol#635)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#15) is too similar to IUniswapV2Router01.a
ddLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#16)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

PEPEPUNK.DEAD (contracts/Token.sol#472) should be constant
PEPEPUNK._totalSupply (contracts/Token.sol#478) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

PEPEPUNK.router (contracts/Token.sol#492) should be immutable
PEPEPUNK.swapThreshold (contracts/Token.sol#495) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
```

Result => A static analysis of contract's source code has been performed using slither,

No major issues were found in the output

FUNCTIONAL TESTING

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

All the functionalities have been tested, no issues were found

1- Adding liquidity (passed):

https://testnet.bscscan.com/tx/0x054e3b78f0f8e8f26948b72e7b2f230fbf864c6678a8efa2ff79bb147cceb809

2- Buying when excluded (0% tax) (passed):

https://testnet.bscscan.com/tx/0x7d7b2096d28451ba3aa80087207c28f6fc879c56b3e4ad59ca9ff0fcb4f05504

3- Selling when excluded (0% tax) (passed):

https://testnet.bscscan.com/tx/0x9f16e1bc87224d701f99cd276db2220d6527388c3f58082810a09a026e726995

4- Transferring when excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x769641730acb2282b895a5ba0f35f6491371678598eb977bfd370abd38db1f46

5- Buying when not excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x5a74a7e5e66d666081612086c6c74f62aaf19c4a0aa11436ed194d1d0e578f3d

6- Selling when not excluded from fees (up to 10% tax) (passed):

https://testnet.bscscan.com/tx/0x2b7a8a8274b10e10b73037f818379e49f583e490fca1a24ac26703270e7e3b56

FUNCTIONAL TESTING

7- Transferring when not excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x295384dd609ad5d54857354e107850a2d78158154e68bf3987eec05ca6617531

7- Internal swap (fee wallets received BNB + Burning) (passed):

https://testnet.bscscan.com/tx/0x2b7a8a8274b10e10b73037f818379e49f583e490fca1a24ac26703270e7e3b56

MANUAL TESTING

Centralization – Trades must be enabled

Severity: High

function: enableTrading

Status: Resolved (Contract is owned by Pinksale safu developer)

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be **able** to buy/sell/transfer tokens.

```
function enableTrading() external onlyOwner {
    require(!isTradeEnabled, "Trading already enabled");
    isTradeEnabled = true;
    listingTime = block.timestamp;
```

Suggestion

To mitigate this centralization issue, we propose the following options:

Renounce Ownership: Consider relinquishing control of the smart contract by renouncing ownership. This would remove the ability for a single entity to manipulate the router, reducing centralization risks.
Multi-signature Wallet: Transfer ownership to a multi-signature wallet. This would require multiple approvals for any changes to the mainRouter, adding an additional layer of security and reducing the centralization risk.

3. Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades **(applied)**

MANUAL TESTING

Informational – Stuck ERC20 tokens

Status: Not Resolved

Overview:

ERC20 tokens sent to contract can not be rescued.

Suggestion:

implement a function to be able to withraw ERC20 tokens from the contract

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