auditace.tech

AuditAce

FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

Peach Inu

DATED : 9 APRIL 23'

AUDIT SUMMARY

Project name – Peach Inu

Date: 9 April, 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	0
Acknowledged	0	0	0	0	0
Resolved	0	2	0	0	0

USED TOOLS

Tools:

1- Manual Review:
a line by line code review has been performed by audit ace team.

2- BSC Testnet 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 Link: Contract has been tested on binance smart chain testnet which can be found in below link:
https://testnet.bscscan.com/token/0xeA9b9184e28192d6bFB0443cFdB6E9b18257f58D

Token Information

Token Name : Peach Inu

Token Symbol: PEACH

Decimals: 9

Token Supply: 5,000,000,000,000,000

Token Address:
0x2A374d02e244aAa175b38bA1Ba9ee443d20E7E41

Checksum:
9814facf1fbfd4e831bad29b666e83d7a9f466e1

Owner:
0xdAAF39E49e294c04727CA1C89c7A16b203Cf6Cd1
(at time of audit)

TOKEN OVERVIEW

Fees:

Buy Fees: 10%

Sell Fees: 10%

Transfer Fees: 0%

Fees Privilege: None

Ownership: Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: including and excluding form fee - changing distribution settings (min tokens to be eligible, cool down between claims etc)

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

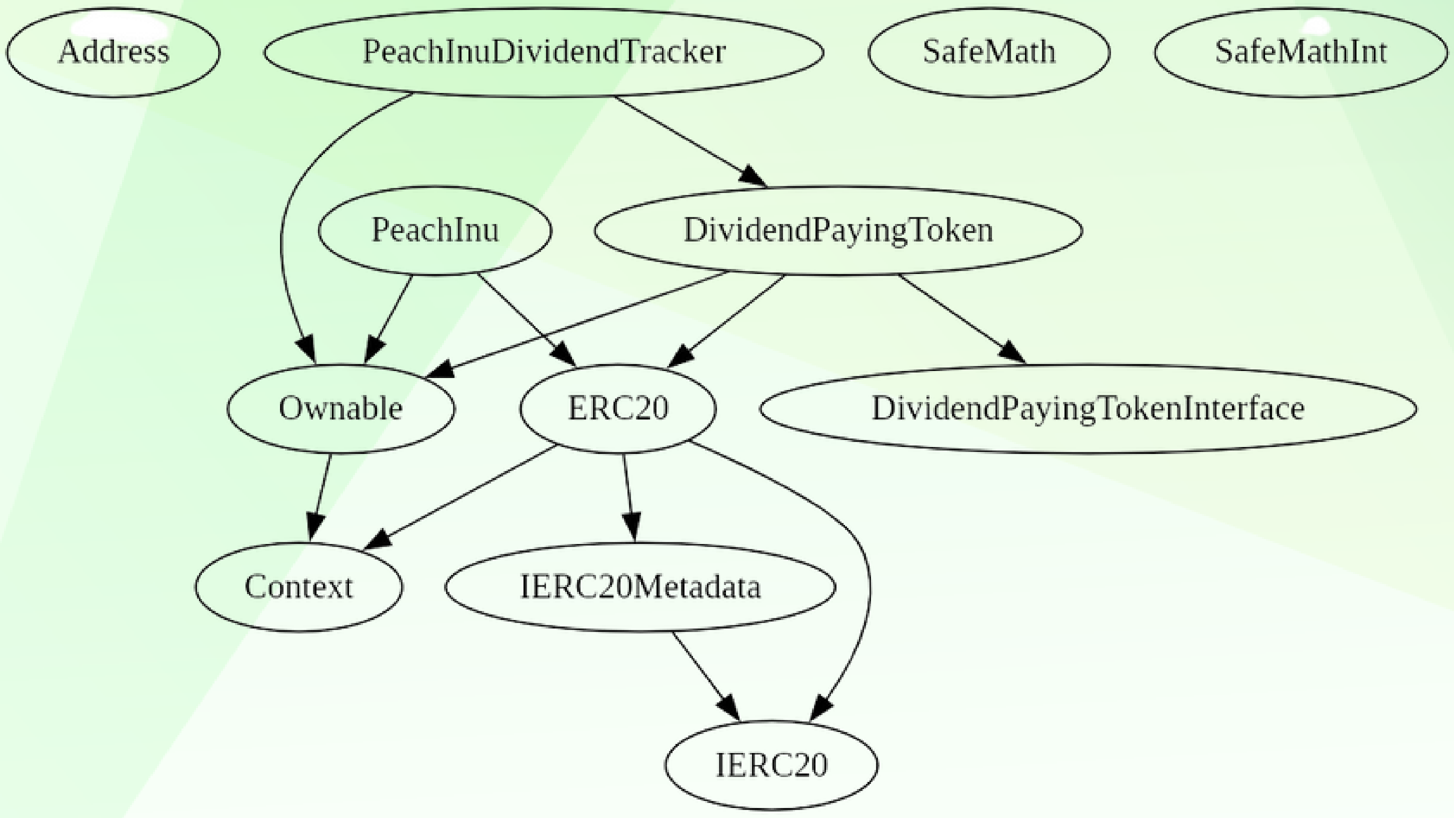
CLASSIFICATION OF RISK

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	2
🟧 Medium-Risk	0
🟨 Low-Risk	0
🔷 Gas Optimization / Suggestions	0

INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to modify buy/sell fees
- Owner is not able to set transfer fees (0% always)
- Owner is not able to set max buy/sell/transfer/hold 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 trading for investors**

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
Address	Library			
└	sendValue	Internal 🔒	🛑	
PeachInu	Implementation	ERC20, Ownable		
└	<Constructor>	Public ❗	🛑	ERC20
└	<Receive Ether>	External ❗	💵	NO ❗
└	updateDividendTracker	Public ❗	🛑	onlyOwner
└	processDividendTracker	External ❗	🛑	NO ❗
└	claim	External ❗	🛑	NO ❗
└	rescueBEP20Tokens	External ❗	🛑	onlyOwner
└	forceSend	External ❗	🛑	NO ❗
└	excludeFromFees	Public ❗	🛑	onlyOwner
└	excludeMultipleAccountsFromFees	Public ❗	🛑	onlyOwner
└	excludeFromDividends	External ❗	🛑	onlyOwner
└	setMarketingWallet	External ❗	🛑	onlyOwner
└	setOpsWallet	External ❗	🛑	onlyOwner
└	setDevWallet	External ❗	🛑	onlyOwner
└	setSwapTokensAtAmount	External ❗	🛑	onlyOwner
└	setSwapEnabled	External ❗	🛑	onlyOwner
└	enableTradingEnabled	External ❗	🛑	onlyOwner
└	setAntiBotBlocks	External ❗	🛑	onlyOwner
└	setMinBalanceForDividends	External ❗	🛑	onlyOwner
└	_setAutomatedMarketMakerPair	Private 🔐	🛑	
└	setGasForProcessing	External ❗	🛑	onlyOwner
└	setClaimWait	External ❗	🛑	onlyOwner
└	getClaimWait	External ❗		NO ❗
└	getTotalDividendsDistributed	External ❗		NO ❗
└	isExcludedFromFees	Public ❗		NO ❗
└	withdrawableDividendOf	Public ❗		NO ❗
└	getCurrentRewardToken	External ❗		NO ❗
└	dividendTokenBalanceOf	Public ❗		NO ❗
└	getAccountDividendsInfo	External ❗		NO ❗
└	getAccountDividendsInfoAtIndex	External ❗		NO ❗
└	getLastProcessedIndex	External ❗		NO ❗
└	getNumberOfDividendTokenHolders	External ❗		NO ❗
└	_transfer	Internal 🔒	🛑	
└	swapAndLiquify	Private 🔐	🛑	
└	swapTokensForBNB	Private 🔐	🛑	

CONTRACT ASSESMENT

```
| └ | addLiquidity | Private 🔐 | 🛑 | |
||||||
| **PeachInuDividendTracker** | Implementation | Ownable, DividendPayingToken |||
| └ | <Constructor> | Public ❗️ | 🛑 | DividendPayingToken |
| └ | _transfer | Internal 🔒 | | |
| └ | setMinBalanceForDividends | External ❗️ | 🛑 | onlyOwner |
| └ | excludeFromDividends | External ❗️ | 🛑 | onlyOwner |
| └ | updateClaimWait | External ❗️ | 🛑 | onlyOwner |
| └ | getLastProcessedIndex | External ❗️ | |NO ❗️ |
| └ | getNumberOfTokenHolders | External ❗️ | |NO ❗️ |
| └ | getCurrentRewardToken | External ❗️ | |NO ❗️ |
| └ | getAccount | Public ❗️ | |NO ❗️ |
| └ | getAccountAtIndex | Public ❗️ | |NO ❗️ |
| └ | canAutoClaim | Private 🔐 | | |
| └ | setBalance | Public ❗️ | 🛑 | onlyOwner |
| └ | process | Public ❗️ | 🛑 |NO ❗️ |
| └ | processAccount | Public ❗️ | 🛑 | onlyOwner |
||||||
| **DividendPayingToken** | Implementation | ERC20, DividendPayingTokenInterface, Ownable |||
| └ | <Constructor> | Public ❗️ | 🛑 | ERC20 |
| └ | <Receive Ether> | External ❗️ | 💵 |NO ❗️ |
| └ | distributeDividends | Public ❗️ | 💵 |NO ❗️ |
| └ | _withdrawDividendOfUser | Internal 🔒 | 🛑 | |
| └ | setRewardToken | External ❗️ | 🛑 | onlyOwner |
| └ | swapBnbForCustomToken | Internal 🔒 | 🛑 | |
| └ | dividendOf | Public ❗️ | |NO ❗️ |
| └ | withdrawableDividendOf | Public ❗️ | |NO ❗️ |
| └ | withdrawnDividendOf | Public ❗️ | |NO ❗️ |
| └ | accumulativeDividendOf | Public ❗️ | |NO ❗️ |
| └ | _transfer | Internal 🔒 | 🛑 | |
| └ | _tokengeneration | Internal 🔒 | 🛑 | |
| └ | _burn | Internal 🔒 | 🛑 | |
| └ | _setBalance | Internal 🔒 | 🛑 | |
||||||
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata |||
| └ | <Constructor> | Public ❗️ | 🛑 |NO ❗️ |
| └ | name | Public ❗️ | |NO ❗️ |
| └ | symbol | Public ❗️ | |NO ❗️ |
| └ | decimals | Public ❗️ | |NO ❗️ |
| └ | totalSupply | Public ❗️ | |NO ❗️ |
| └ | balanceOf | Public ❗️ | |NO ❗️ |
| └ | transfer | Public ❗️ | 🛑 |NO ❗️ |
```

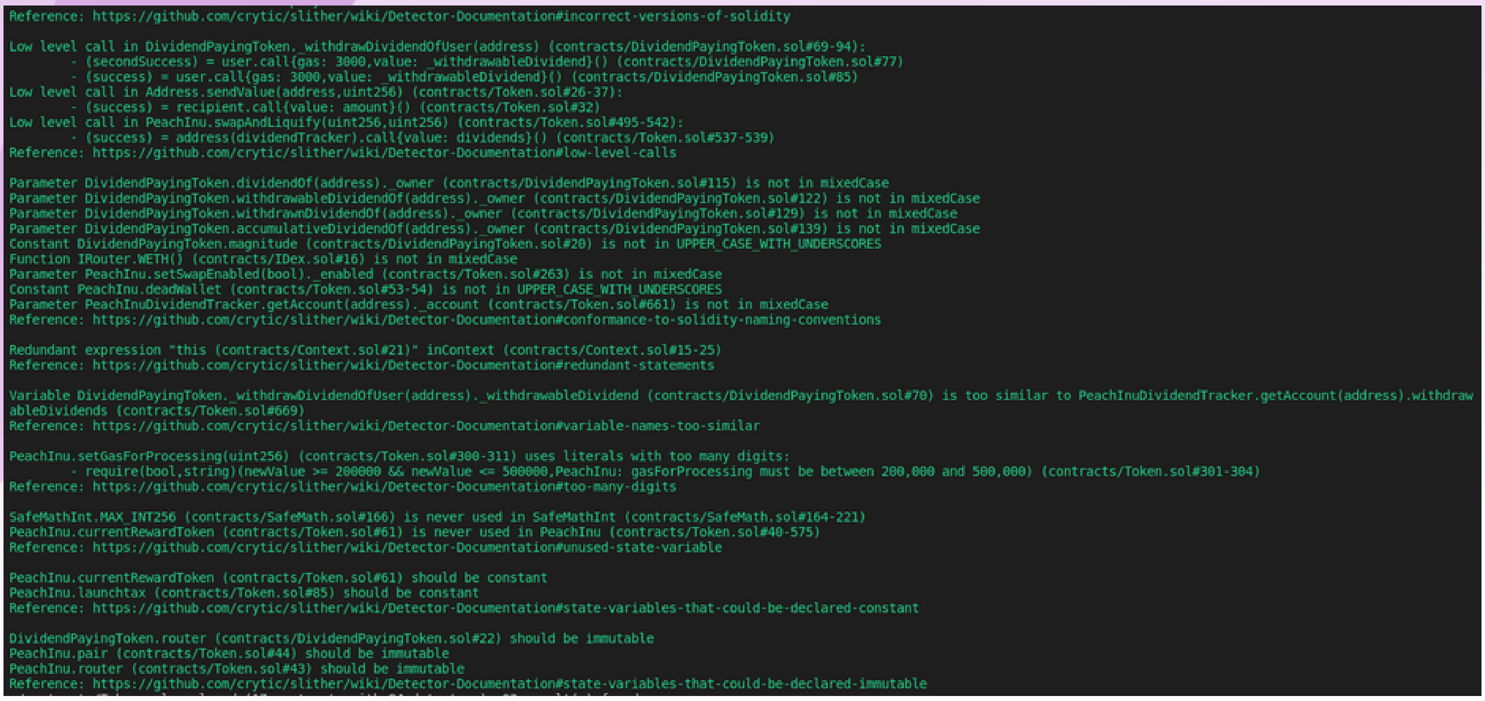
CONTRACT ASSESMENT

```
| └ | allowance | Public ❗ | |NO ❗ |
| └ | approve | Public ❗ | 🛑 |NO ❗ |
| └ | transferFrom | Public ❗ | 🛑 |NO ❗ |
| └ | increaseAllowance | Public ❗ | 🛑 |NO ❗ |
| └ | decreaseAllowance | Public ❗ | 🛑 |NO ❗ |
| └ | _transfer | Internal 🔒 | 🛑 | |
| └ | _tokengeneration | Internal 🔒 | 🛑 | |
| └ | _burn | Internal 🔒 | 🛑 | |
| └ | _approve | Internal 🔒 | 🛑 | |
| └ | _beforeTokenTransfer | Internal 🔒 | 🛑 | |
||||||
| **IERC20** | Interface | |||
| └ | totalSupply | External ❗ | |NO ❗ |
| └ | balanceOf | External ❗ | |NO ❗ |
| └ | transfer | External ❗ | 🛑 |NO ❗ |
| └ | allowance | External ❗ | |NO ❗ |
| └ | approve | External ❗ | 🛑 |NO ❗ |
| └ | transferFrom | External ❗ | 🛑 |NO ❗ |
||||||
| **IERC20Metadata** | Interface | IERC20 |||
| └ | name | External ❗ | |NO ❗ |
| └ | symbol | External ❗ | |NO ❗ |
| └ | decimals | External ❗ | |NO ❗ |
||||||
| **Context** | Implementation | |||
| └ | _msgSender | Internal 🔒 | | |
| └ | _msgData | Internal 🔒 | | |
||||||
| **SafeMath** | Library | |||
| └ | add | Internal 🔒 | | |
| └ | sub | Internal 🔒 | | |
| └ | sub | Internal 🔒 | | |
| └ | mul | Internal 🔒 | | |
| └ | div | Internal 🔒 | | |
| └ | div | Internal 🔒 | | |
| └ | mod | Internal 🔒 | | |
| └ | mod | Internal 🔒 | | |
||||||
| **SafeMathInt** | Library | |||
| └ | mul | Internal 🔒 | | |
| └ | div | Internal 🔒 | | |
| └ | sub | Internal 🔒 | | |
| └ | add | Internal 🔒 |   | |
| └ | abs | Internal 🔒 |   | |
| └ | toUint256Safe | Internal 🔒 |   | |
||||||
| **SafeMathUint** | Library |  |||
| └ | toInt256Safe | Internal 🔒 |   | |
||||||
| **DividendPayingTokenInterface** | Interface |  |||
| └ | dividendOf | External ❗️ |   |NO ❗️ |
| └ | distributeDividends | External ❗️ |  💵 |NO ❗️ |
| └ | withdrawableDividendOf | External ❗️ |   |NO ❗️ |
| └ | withdrawnDividendOf | External ❗️ |   |NO ❗️ |
| └ | accumulativeDividendOf | External ❗️ |   |NO ❗️ |
||||||
| **Ownable** | Implementation | Context |||
| └ | <Constructor> | Public ❗️ | 🛑  |NO ❗️ |
| └ | owner | Public ❗️ |   |NO ❗️ |
| └ | renounceOwnership | Public ❗️ | 🛑  | onlyOwner |
| └ | transferOwnership | Public ❗️ | 🛑  | onlyOwner |
||||||
| **IPair** | Interface |  |||
| └ | sync | External ❗️ | 🛑  |NO ❗️ |
||||||
| **IFactory** | Interface |  |||
| └ | createPair | External ❗️ | 🛑  |NO ❗️ |
| └ | getPair | External ❗️ |   |NO ❗️ |
||||||
| **IRouter** | Interface |  |||
| └ | factory | External ❗️ |   |NO ❗️ |
| └ | WETH | External ❗️ |   |NO ❗️ |
| └ | addLiquidityETH | External ❗️ |  💵 |NO ❗️ |
| └ | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ❗️ | 🛑  |NO ❗️ |
| └ | swapExactETHForTokens | External ❗️ |  💵 |NO ❗️ |
| └ | swapExactTokensForETHSupportingFeeOnTransferTokens | External ❗️ | 🛑  |NO ❗️ |
||||||
| **IterableMapping** | Library |  |||
| └ | get | Internal 🔒 |   | |
| └ | getIndexOfKey | Internal 🔒 |   | |
| └ | getKeyAtIndex | Internal 🔒 |   | |
| └ | size | Internal 🔒 |   | |
| └ | set | Internal 🔒 | 🛑  | |
| └ | remove | Internal 🔒 | 🛑  | |
```

Legend

Symbol	Meaning
🛑	Function can modify state
💵	Function is payable

STATIC ANALYSIS



```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Low level call in DividendPayingToken._withdrawDividendOfUser(address) (contracts/DividendPayingToken.sol#69-94):
        - (secondSuccess) = user.call{gas: 3000,value: _withdrawableDividend}() (contracts/DividendPayingToken.sol#77)
        - (success) = user.call{gas: 3000,value: _withdrawableDividend}() (contracts/DividendPayingToken.sol#85)
Low level call in Address.sendValue(address,uint256) (contracts/Token.sol#26-37):
        - (success) = recipient.call{value: amount}() (contracts/Token.sol#32)
Low level call in PeachInu.swapAndLiquify(uint256,uint256) (contracts/Token.sol#495-542):
        - (success) = address(dividendTracker).call{value: dividends}() (contracts/Token.sol#537-539)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Parameter DividendPayingToken.dividendOf(address)._owner (contracts/DividendPayingToken.sol#115) is not in mixedCase
Parameter DividendPayingToken.withdrawableDividendOf(address)._owner (contracts/DividendPayingToken.sol#122) is not in mixedCase
Parameter DividendPayingToken.withdrawnDividendOf(address)._owner (contracts/DividendPayingToken.sol#129) is not in mixedCase
Parameter DividendPayingToken.accumulativeDividendOf(address)._owner (contracts/DividendPayingToken.sol#139) is not in mixedCase
Constant DividendPayingToken.magnitude (contracts/DividendPayingToken.sol#20) is not in UPPER_CASE_WITH_UNDERSCORES
Function IRouter.WETH() (contracts/IDex.sol#16) is not in mixedCase
Parameter PeachInu.setSwapEnabled(bool)._enabled (contracts/Token.sol#263) is not in mixedCase
Constant PeachInu.deadWallet (contracts/Token.sol#53-54) is not in UPPER_CASE_WITH_UNDERSCORES
Parameter PeachInuDividendTracker.getAccount(address)._account (contracts/Token.sol#661) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Redundant expression "this (contracts/Context.sol#21)" inContext (contracts/Context.sol#15-25)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

Variable DividendPayingToken._withdrawDividendOfUser(address)._withdrawableDividend (contracts/DividendPayingToken.sol#70) is too similar to PeachInuDividendTracker.getAccount(address).withdraw
ableDividends (contracts/Token.sol#669)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

PeachInu.setGasForProcessing(uint256) (contracts/Token.sol#300-311) uses literals with too many digits:
        - require(bool,string)(newValue >= 200000 && newValue <= 500000,PeachInu: gasForProcessing must be between 200,000 and 500,000) (contracts/Token.sol#301-304)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

SafeMathInt.MAX_INT256 (contracts/SafeMath.sol#166) is never used in SafeMathInt (contracts/SafeMath.sol#164-221)
PeachInu.currentRewardToken (contracts/Token.sol#61) is never used in PeachInu (contracts/Token.sol#40-575)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable

PeachInu.currentRewardToken (contracts/Token.sol#61) should be constant
PeachInu.launchtax (contracts/Token.sol#85) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

DividendPayingToken.router (contracts/DividendPayingToken.sol#22) should be immutable
PeachInu.pair (contracts/Token.sol#44) should be immutable
PeachInu.router (contracts/Token.sol#43) 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 issues found

FUNCTIONAL TESTING

1- Adding liquidity (passed):
https://testnet.bscscan.com/tx/0x8422e8b8eb95814216122abe96f425afc6dc4aaa713173a23a315bf027de4a44

2- Buying when excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0x35201b1ab2dcff67d045961d20ff5053173997479ab181c945af4894a296432b

3- Selling when excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0x17a139f374b6112265d9618758003847f3458cfbbcf3ed4161e9a8a8e1f2c5b2

4- Transferring when excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0x56b1a69e379d4efd19a6808d58bb727a22cf1b32655fc2671db0d9be8054c644

5- Buying when not excluded from fees (10% tax) (passed):
https://testnet.bscscan.com/tx/0x7dcb0aa54868330bfc992fc66b1279ee918d45b5fb836e002d9b85c3ec566c76

6- Selling when not excluded from fees (10% tax) (passed):
https://testnet.bscscan.com/tx/0x1c52ce80d71f591e4226d275a345c1df7202d66f858c0d6bcc1d881a463956f3

7- Transferring when not excluded from fees (0% tax) (passed):
https://testnet.bscscan.com/tx/0x4e0081af2b95427c6f30e0cf33ff03dc02c92e027120e2def64f422263e23411

FUNCTIONAL TESTING

8- Internal swap **(passed):**
fee wallets received BNB
https://testnet.bscscan.com/tx/0x1c52ce80d71f591e4226d275a345c1df7202d66f858c0d6bcc1d881a463956f3

9- Distribution of rewards **(passed):**
BUSD tokens are distributed between holders, this can be seen in this transaction
https://testnet.bscscan.com/tx/0x1c52ce80d71f591e4226d275a345c1df7202d66f858c0d6bcc1d881a463956f3

MANUAL TESTING

Centralization - Owner must enable trading

Severity: High

Function: enableTradingEnabled

Lines: 242

Status: Resolved

Overview:

The owner must activate trading for investors to buy, sell, or transfer tokens. If trading remains disabled, token holders will be unable to trade their tokens.

```
function enableTradingEnabled() external onlyOwner {
    require(!tradingEnabled, "Trading is already enabled");
    tradingEnabled = true;
    startTradingBlock = block.number;
}
```

Recommendation:

Incorporate a safety mechanism that allows investors to activate trading if a specified duration has elapsed since the conclusion of the presale or consider alternative ways such as allowing trades ater investors claimed their presale tokens.

Allevation:

Contract is owned by Safu Dev, hence enabling trade is guaranteed

MANUAL TESTING

Logical - Setting internal swap threshold to 0 can disable sells

Severity: High

Function: setSwapThreshold

Lines: 231

Status: Resolved

If the **swaptokensAtAmount** is set to 0, sell transactions will fail at the _transfer function. This occurs because the checks for performing a swapAndLiquify will still pass even if the swapThreshold is set to 0 and the contract has 0 tokens. Consequently, the transaction will fail while attempting to swap 0 tokens (i.e., **swaptokensAtAmount**) to BNB. Additionally, setting the swapThreshold to an excessively large number leads to a high slippage percentage during sell transactions.

```
function setSwapTokensAtAmount(uint256 amount) external onlyOwner {
  require(
     amount < 5e13,
     "Swap Threshold should be less than 1% of total supply");
  swapTokensAtAmount = amount * 10 ** 9;
}
if (
  canSwap &&
  !swapping &&
  swapEnabled &&
  !automatedMarketMakerPairs[from] &&
  !_isExcludedFromFees[from] &&
  !_isExcludedFromFees[to]
) {
  swapping = true;
  if (swapTax > 0) {
    swapAndLiquify(swapTokensAtAmount, swapTax);
  }
  swapping = false;
}
```

MANUAL TESTING

Recommendation:

Ensure that the swapThreshold is set to a value greater than a reasonable minimum and less than a reasonable maximum. This will help prevent issues related to disabled sell transactions or high slippage percentages during trades.

Allevation:

Contract is owned by Safu Dev, swap threshold will remain in a logical range

DISCLAIMER

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https://github.com/Audit-Ace