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AuditAce
FROM INCEPTION TO SUCCESS

# Smart Contract Audit

FOR

# PuppyLoveCoin

DATED : 6 Feb, 2024

# MANUAL TESTING

## Centralization – The owner can Blacklist Wallet

## Severity: High

## Function: setBlacklistAddress

## Status: Open

**Overview:**

The owner can blacklist multiple wallets owner.

```
function setBlacklistAddress(address _address, bool isBlacklisted) external on-
lyOwner {
    blacklisted[_address] = isBlacklisted;
    }
```

# MANUAL TESTING

## Centralization – The owner can lock the token

**Severity: High**

**Function: setMaxWalletAmount**

**Status: Open**

**Overview:**
In this setMaxWalletAmount.

```
function setMaxWalletAmount(uint256 _amount) external onlyOwner {
        maxWalletAmount = _amount;
    }
```

**Suggestion:**
It is recommended that there be a required check for zero address.

# AUDIT SUMMARY

**Project name** – PuppyLove Coin

**Date**: 6 Feb, 2024

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

**Audit Status:** **High Risk Major Flag**

## Issues Found

| Status | Critical | High | Medium | Low | Suggestion |
|---|---|---|---|---|---|
| Open | 0 | 2 | 0 | 1 | 2 |
| Acknowledged | 0 | 0 | 0 | 0 | 0 |
| Resolved | 0 | 0 | 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/address/0xefb527bea12c48e2f7877d7289250a95da2bdbf0#code

# Token Information

**Token Name** : PuppyLove Coin

**Token Symbol**: $PuppyLove

**Decimals:** 18

**Token Supply**: 1000000000000

**Network:** ETHScan

**Token Type:** ERC-20

**Token Address:**
0x9471a367C34fEb503d9A5F2c050cf2C28e5d7Ac0

**Checksum:**
hde3cef7c2c788bc03532d7342fc9112

**Owner:**
0x408AAaCD1bb5Cf55E4bC615F7EC3f5463e56D1C4

**Deployer:**
0x408AAaCD1bb5Cf55E4bC615F7EC3f5463e56D1C4

# TOKEN OVERVIEW

**Fees:**

**Buy Fee: 0-25%**

**Sell Fee: 5-25%**

**Transfer Fee: 0-0%**

**Fees Privilege:** Owner

**Ownership**: Owned

**Minting:** None

**Max Tx Amount/ Max Wallet Amount: No**

**Blacklist: Yes**

# AUDIT METHODOLOGY

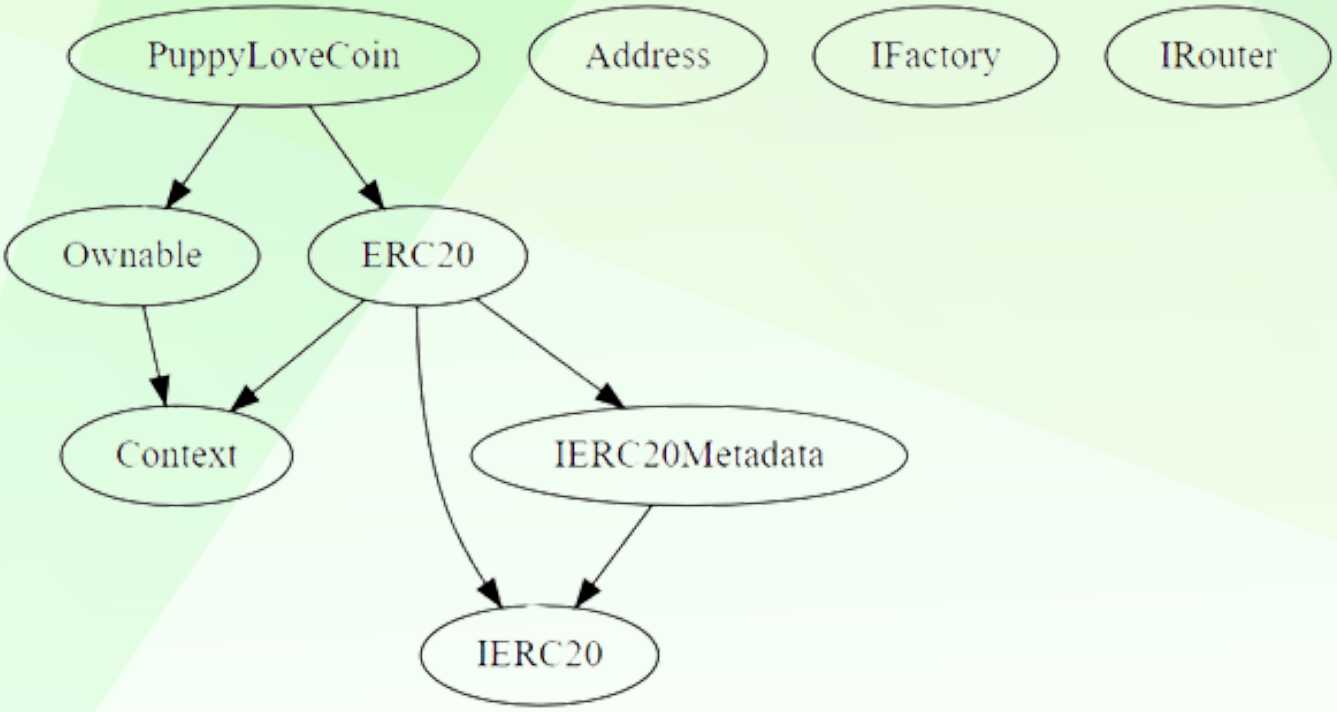
The auditing process will follow a routine as special considerations by Auditace:

- 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

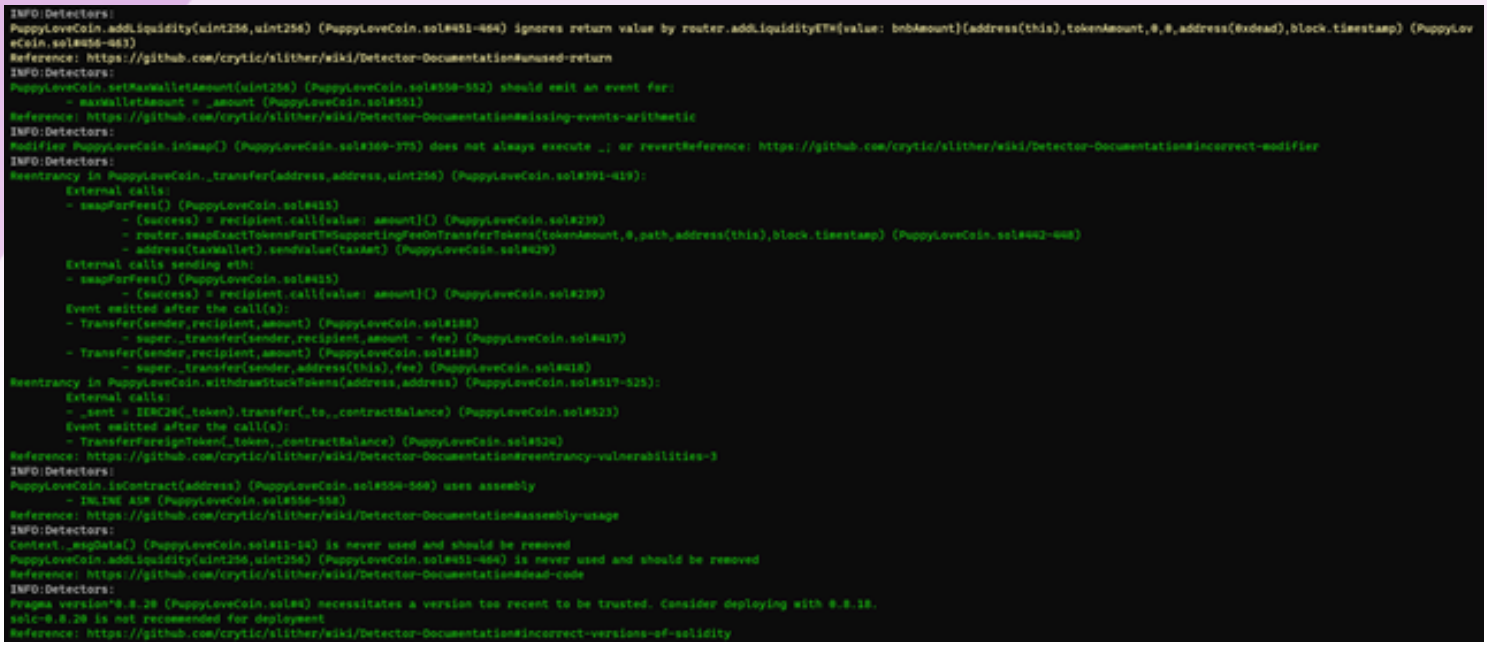
# INHERITANCE TREE



# STATIC ANALYSIS

**A static analysis of the code was performed using Slither.**

**No issues were found.**



# STATIC ANALYSIS

```
INFO:Detectors:
Context._msgData() (PuppyLoveCoin.sol#11-14) is never used and should be removed
PuppyLoveCoin.addLiquidity(uint256,uint256) (PuppyLoveCoin.sol#451-464) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version^0.8.20 (PuppyLoveCoin.sol#4) necessitates a version too recent to be trusted. Consider deploying with 0.8.18.
solc-0.8.20 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Low level call in Address.sendValue(address,uint256) (PuppyLoveCoin.sol#233-244):
        - (success) = recipient.call{value: amount}() (PuppyLoveCoin.sol#239)
Low level call in PuppyLoveCoin.unclog() (PuppyLoveCoin.sol#533-540):
        - (success,None) = address(taxWallet).call{value: ethtax}() (PuppyLoveCoin.sol#539)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
INFO:Detectors:
Function IRouter.WETH() (PuppyLoveCoin.sol#296) is not in mixedCase
Event PuppyLoveCoin.taxWalletUpdated() (PuppyLoveCoin.sol#345) is not in CapWords
Parameter PuppyLoveCoin.setSwapThreshold(uint256).new_amount (PuppyLoveCoin.sol#472) is not in mixedCase
Parameter PuppyLoveCoin.setBuyTaxes(uint256)._tax (PuppyLoveCoin.sol#481) is not in mixedCase
Parameter PuppyLoveCoin.setSellTaxes(uint256)._tax (PuppyLoveCoin.sol#488) is not in mixedCase
Parameter PuppyLoveCoin.setExcludedFromFees(address,bool)._address (PuppyLoveCoin.sol#509) is not in mixedCase
Parameter PuppyLoveCoin.withdrawStuckTokens(address,address)._token (PuppyLoveCoin.sol#517) is not in mixedCase
Parameter PuppyLoveCoin.withdrawStuckTokens(address,address)._to (PuppyLoveCoin.sol#517) is not in mixedCase
Parameter PuppyLoveCoin.setBlacklistAddress(address,bool)._address (PuppyLoveCoin.sol#546) is not in mixedCase
Parameter PuppyLoveCoin.setMaxWalletAmount(uint256)._amount (PuppyLoveCoin.sol#550) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Redundant expression "this (PuppyLoveCoin.sol#12)" inContext (PuppyLoveCoin.sol#6-15)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements
INFO:Detectors:
Reentrancy in PuppyLoveCoin.clearStuckEthers(uint256) (PuppyLoveCoin.sol#527-531):
        External calls:
        - address(msg.sender).transfer((amountETH * amountPercentage) / 100) (PuppyLoveCoin.sol#529)
        Event emitted after the call(s):
        - StuckEthersCleared() (PuppyLoveCoin.sol#530)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4
INFO:Detectors:
PuppyLoveCoin.constructor() (PuppyLoveCoin.sol#377-389) uses literals with too many digits:
        - _mint(msg.sender,1000000000000 * 10 ** decimals()) (PuppyLoveCoin.sol#378)
PuppyLoveCoin.slitherConstructorVariables() (PuppyLoveCoin.sol#323-565) uses literals with too many digits:
        - swapThreshold = 1000000 * 10 ** 18 (PuppyLoveCoin.sol#353)
PuppyLoveCoin.slitherConstructorVariables() (PuppyLoveCoin.sol#323-565) uses literals with too many digits:
        - maxWalletAmount = 10000000 * 10 ** 18 (PuppyLoveCoin.sol#355)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits
INFO:Detectors:
PuppyLoveCoin.pair (PuppyLoveCoin.sol#327) should be immutable
PuppyLoveCoin.router (PuppyLoveCoin.sol#326) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:PuppyLoveCoin.sol analyzed (9 contracts with 93 detectors), 30 result(s) found
```

# FUNCTIONAL TESTING

**1- Approve (passed):**
https://testnet.bscscan.com/tx/0x88649ef103595325920a26489de21c9f58d0a25d3ef858d98b84640daf64b323

**2- Set Buy Taxes (passed):**
https://testnet.bscscan.com/tx/0x6e9203084ce61d45dac559f2ac31dc17df28f06524ac30d55d69d5df2fe85aae

**3- Set Buy Taxes (passed):**
https://testnet.bscscan.com/tx/0x461f9d1b295e16c2155c201338f7850de47a5b88d9c5c4814cdec58c4a2b7d6c

**4- Set Blacklist Address (passed):**
https://testnet.bscscan.com/tx/0xb9285bb5ae9be190475cf1e6ebfd119edda7a2ac2979b9ccc9379d3e95a58bc9

**5- Settax Wallet (passed):**
https://testnet.bscscan.com/tx/0x82580a6bcb66f8128ef0b9b65de77e8687b8209330dfe9e91ddeb228dd26bfa5

# POINTS TO NOTE

- The owner can enable/disable swapping.
- The owner can update the swap threshold amount.
- The owner can update the buy and sell tax of not more than 25%.
- The owner can update the tax wallet address.
- The owner can exclude wallets from fees.
- The owner can claim the stuck tokens including the contract’s tokens.
- The owner can manually swap tokens.

# 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 | 1 |
| Gas Optimization / Suggestions | 2 |

# MANUAL TESTING

## Centralization – The owner can Blacklist Wallet

## Severity: High

## Function: setBlacklistAddress

## Status: Open

**Overview:**

The owner can blacklist multiple wallets owner.

```
function setBlacklistAddress(address _address, bool isBlacklisted) external on-
lyOwner {
    blacklisted[_address] = isBlacklisted;
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```

# MANUAL TESTING

## Centralization – The owner can lock the token

**Severity: High**

**Function: setMaxWalletAmount**

**Status: Open**

**Overview:**
In this setMaxWalletAmount.

```
function setMaxWalletAmount(uint256 _amount) external onlyOwner {
        maxWalletAmount = _amount;
    }
```

**Suggestion:**
It is recommended that there be a required check for zero address.

# MANUAL TESTING

## 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 setBlacklistAddress(address _address, bool isBlacklisted) external on-
lyOwner {
    blacklisted[_address] = isBlacklisted;
    }
function setMaxWalletAmount(uint256 _amount) external onlyOwner {
      maxWalletAmount = _amount;
    }
```

# MANUAL TESTING

## Optimization

**Severity: Informational**

**Function: Floating Pragma**

**Status: Open**

**Overview:**

It is considered best practice to pick one compiler version and stick with it. With a floating pragma, contracts may accidentally be deployed using an outdated.

```
pragma solidity ^0.8.20;
```

**Suggestion:**

Adding the latest constant version of solidity is recommended, as this prevents the unintentional deployment of a contract with an outdated compiler that contains unresolved bugs.

# MANUAL TESTING

## Optimization

**Severity: Optimization**

**Function: 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 _msgData() internal view virtual returns (bytes calldata) {
        this;
        return msg.data;
    }
event DevelopmentWalletUpdated();
event StoicDaoWalletUpdated();
event MaxTxAmountUpdated();
event MaxWalletAmountUpdated();
```

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