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AuditAce

FROM INCEPTION TO SUCCESS

# Smart Contract Audit

FOR

# Kings Of Wojak

DATED : 8 September 23'

# MANUAL TESTING

## Centralization – Enabling Trades

**Severity: High**
**function: openTrading**
**Status: Open**

**Overview:**
The openTrading function permits only the contract owner to activate trading capabilities. Until this function is executed, no investors can buy, sell, or transfer their tokens. This places a high degree of control and centralization in the hands of the contract owner.

```
function openTrading() external onlyOwner {
    require(presaleActive == 3, "LP Not Ready");
    presaleActive = 1;
}
```

**Suggestion**
To reduce centralization and potential manipulation, consider one of the following approaches:
1.Automatically enable trading after a specified condition, such as the completion of a presale, is met.
2.If manual activation is still desired, consider transferring the ownership of the contract to a trustworthy, third-party entity like a certified "PinkSale Safu" developer. This can provide investors with more confidence in the eventual activation of trading capabilities, mitigating concerns of potential bad faith actions by the original owner

# MANUAL TESTING

## Centralization – LP tokens sent to owner

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**Overview:**
**After end of the presale, all LP tokens will be sent to owner**

```
        dexRouter.addLiquidityETH{value: address(this).balance}(
            address(this),
            bal,
            0,
            0,
            owner(),
            block.timestamp
        )
```

**Suggestion**
**Its suggested to lock or burn LP tokens.**

# MANUAL TESTING

## Centralization – Blacklist

**Severity: High**
**function: transferProtection**
**Status: Open**
**Overview:**
**Owner is able to blacklist an arbitrary wallet. Blacklisted wallets wont be able to sell or transfer their tokens**

```
function transferProtection(
address[] calldata _wallets,
uint256 _enabled
  ) external onlyOwner {
for (uint256 i = 0; i < _wallets.length; i++) {
walletProtection[_wallets[i]] = _enabled;
}
  }
```

**Suggestion**
**Implement a more decentralized and automated method for blacklisting bad actors (such as using dead blocks or using maximum wallet/buy/sell/transfer limit)**

# MANUAL TESTING

## Logical – Stuck ETH and tokens

**Severity: High**

**function: transferProtection**

**Status: Open**

**Overview:**

**If presale doesn't reach hardcap, there is no way to withdraw deposited ETH from the contract**

**Suggestion**

**Create a function for allowing participates to withdraw their deposited ETH if presale faild.**

# AUDIT SUMMARY

**Project name** – Kings Of Wojak

**Date**: 8 September 2023

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

**Audit Status: FAILED**

## Issues Found

| Status | Critical | High | Medium | Low | Suggestion |
|---|---|---|---|---|---|
| Open | 0 | 4 | 0 | 0 | 0 |
| 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/token/0xc89361d77fa219e42cadd6795c8199ecdfdd74a3

# Token Information

**Token Address :**
0x2c14ff70774b7B5d7732cdf13e47a416996B0e6B

**Name:** Kings Of Wojak

**Symbol:** KJAK

**Decimals:** 9

**Network:** Ethereum

**Token Type:** ERC20

**Owner:** 0x2c14ff70774b7B5d7732cdf13e47a416996B0e6B

**Deployer:** 0x7FA05f2c10c21B0f14e47446eBE41bc2CAB6d8eD

**Token Supply:** 69,000,000

**Checksum:**
3aa85371cb9853106409d78434d3d28f551c2fad

**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/0xc89361d77fa219e42cadd6795c8199ecdfdd74a3

# TOKEN OVERVIEW

**buy fee:** 0%

**Sell fee:** 0%

**transfer fee:** 0%

**Fee Privilege:** Owner

**Ownership:** Owned

**Minting:** None

**Max Tx:** None

**Blacklist:** Yes

**Other Privileges:**

- Initial distribution of the tokens
- Enabling trades
- Blacklisting

# 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.

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# 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

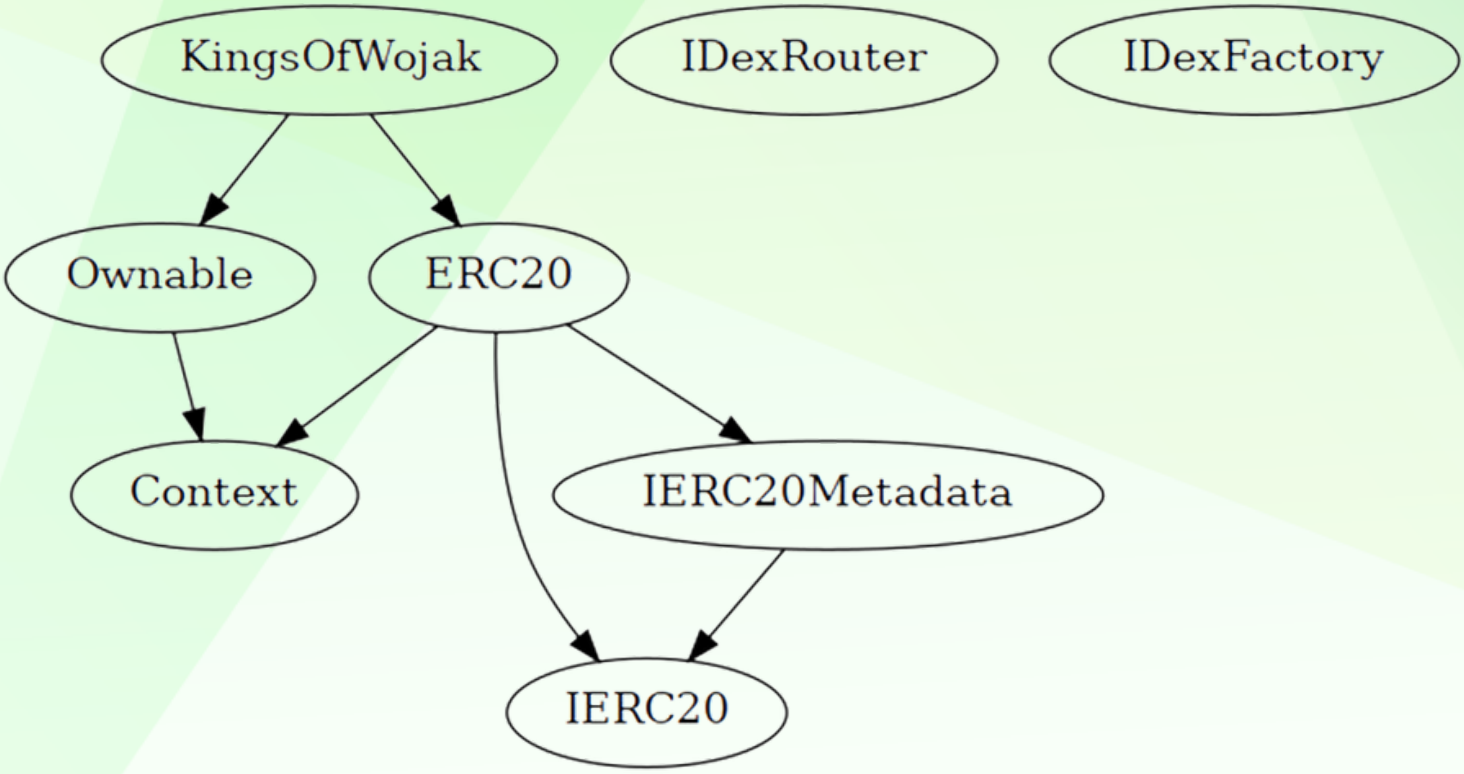
# CLASSIFICATION OF RISK

| 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 | 4 |
| Medium-Risk | 0 |
| Low-Risk | 0 |
| Gas Optimization / Suggestions | 0 |

# INHERITANCE TREE



# POINTS TO NOTE

- Owner is not able to set fee on buy/sell/transfer
- **Owner is able to blacklist an arbitrary wallet (wallet protection)**
- Owner is not able to disable trades
- Owner is not able to mint new tokens
- Owner is not able to set maximum wallet and maximum buy/sell/transfer limits
- **Owner must enable trades manually**

# STATIC ANALYSIS

```
INFO:Detectors:
KingsOfWojak.launch() (contracts/Token.sol#462-495) ignores return value by dexRouter.addLiquidityETH{value: address(this).balance}(address(this),tokensForLP,0,0,owner(),block.timestamp) (con
tracts/Token.sol#481-494)
KingsOfWojak.manualLaunch() (contracts/Token.sol#497-520) ignores return value by dexRouter.addLiquidityETH{value: address(this).balance}(address(this),bal,0,0,owner(),block.timestamp) (contr
acts/Token.sol#502-519)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-return
INFO:Detectors:
KingsOfWojak.constructor().totalSupply (contracts/Token.sol#400) shadows:
        - ERC20.totalSupply() (contracts/Token.sol#149-151) (function)
        - IERC20.totalSupply() (contracts/Token.sol#24) (function)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#local-variable-shadowing
INFO:Detectors:
Reentrancy in KingsOfWojak.manualLaunch() (contracts/Token.sol#497-520):
        External calls:
        - dexRouter.addLiquidityETH{value: address(this).balance}(address(this),bal,0,0,owner(),block.timestamp) (contracts/Token.sol#502-519)
        - (success,None) = address(owner()).call{value: address(this).balance}() (contracts/Token.sol#515-517)
        Event emitted after the call(s):
        - Transfer(sender,recipient,amount) (contracts/Token.sol#248)
                - super._transfer(address(this),owner(),balanceOf(address(this))) (contracts/Token.sol#518)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3
INFO:Detectors:
Context._msgData() (contracts/Token.sol#14-17) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version^0.8.17 (contracts/Token.sol#7) allows old versions
solc-0.8.17 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Low level call in KingsOfWojak.launch() (contracts/Token.sol#462-495):
        - (success,None) = address(owner()).call{value: address(this).balance / 2}() (contracts/Token.sol#477-479)
Low level call in KingsOfWojak.manualLaunch() (contracts/Token.sol#497-520):
        - (success,None) = address(owner()).call{value: address(this).balance}() (contracts/Token.sol#515-517)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
INFO:Detectors:
Function IDexRouter.WETH() (contracts/Token.sol#311) is not in mixedCase
Parameter KingsOfWojak.transferProtection(address[],uint256)._wallets (contracts/Token.sol#548) is not in mixedCase
Parameter KingsOfWojak.transferProtection(address[],uint256)._enabled (contracts/Token.sol#549) is not in mixedCase
Constant KingsOfWojak.routerAddress (contracts/Token.sol#376) is not in UPPER_CASE_WITH_UNDERSCORES
Constant KingsOfWojak.dexRouter (contracts/Token.sol#377) is not in UPPER_CASE_WITH_UNDERSCORES
Constant KingsOfWojak._decimals (contracts/Token.sol#381) is not in UPPER_CASE_WITH_UNDERSCORES
Constant KingsOfWojak._decimalFactor (contracts/Token.sol#382) is not in UPPER_CASE_WITH_UNDERSCORES
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Redundant expression "this (contracts/Token.sol#15)" inContext (contracts/Token.sol#9-18)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements
INFO:Slither:./contracts/Token.sol analyzed (8 contracts with 88 detectors), 20 result(s) found
```

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

**No major issues were found in the output**

# CONTRACT ASSESMENT

| Contract| Type |Bases | | |
|:----------:|:----------:|:----------:|:----------:|:----------:|
| └| **Function Name** |**Visibility** | **Mutability** |**Modifiers** |
||||||
| **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❗ |
||||||
| **IERC20Metadata** | Interface | IERC20 ||
| └| name | External ❗ | |NO❗ |
| └| symbol | External ❗ | |NO❗ |
| └| decimals | External ❗ | |NO❗ |
||||||
| **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❗ |
| └| allowance | Public ❗ | |NO❗ |
| └| approve | Public ❗ | 🛑 |NO❗ |
| └| transferFrom | Public ❗ | 🛑|NO❗ |
| └| increaseAllowance | Public ❗ | 🛑 |NO❗ |
| └| decreaseAllowance | Public ❗ | 🛑|NO❗ |
| └| _transfer | Internal 🔒 | 🛑| |
| └| _approve | Internal 🔒 | 🛑| |
| └| _initialTransfer | Internal 🔒 | 🛑 | |

# CONTRACT ASSESMENT

||||||
| **Ownable** | Implementation | Context |||
| └| <Constructor> | Public ❗ | 🛑|NO❗ |
| └| owner | Public ❗ | |NO❗ |
| └| renounceOwnership | Public ❗ | 🛑| onlyOwner |
| └| transferOwnership | Public ❗ | 🛑| onlyOwner |
||||||
| **IDexRouter** | Interface | |||
| └| factory | External ❗ | |NO❗ |
| └| WETH | External ❗ | |NO❗ |
| └| swapExactTokensForETHSupportingFeeOnTransferTokens | External ❗ | 🛑 |NO❗ |
| └| swapExactTokensForTokensSupportingFeeOnTransferTokens | External ❗ | 🛑 |NO❗ |
| └| swapExactETHForTokensSupportingFeeOnTransferTokens | External ❗ | 💵 |NO❗ |
| └| swapExactETHForTokens | External ❗ | 💵 |NO❗ |
| └| swapETHForExactTokens | External ❗ | 💵 |NO❗ |
| └| addLiquidityETH | External ❗ | 💵 |NO❗ |
| └| getAmountsOut | External ❗ | |NO❗ |
||||||
| **IDexFactory** | Interface | |||
| └| createPair | External ❗ | 🛑|NO❗ |
||||||
| **KingsOfWojak** | Implementation | ERC20, Ownable |||
| └| <Constructor> | Public ❗ | 🛑| ERC20 |
| └| <Receive Ether> | External ❗ | 💵 |NO❗ |
| └| joinPresale | External ❗ | 💵 |NO❗ |
| └| _presale | Internal 🔒 | 🛑| |
| └| decimals | Public ❗ | |NO❗ |
| └| _transfer | Internal 🔒 | 🛑| |
| └| launch | Public ❗ | 🛑 |NO❗ |
| └| manualLaunch | External ❗ | 🛑 | onlyOwner |
| └| openTrading | External ❗ | 🛑 | onlyOwner |
| └| extractExcessTokens | External ❗ | 🛑| onlyOwner |
| └| airdrop | External ❗ | 🛑 | onlyOwner |
| └| transferProtection | External ❗ | 🛑| onlyOwner |
| └| _beforeTokenTransfer | Internal 🔒 || |

# CONTRACT ASSESMENT

### Legend

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

# FUNCTIONAL TESTING

1- Adding liquidity (after end of presale) (passed):
https://testnet.bscscan.com/tx/0x675cf4dbb62a436ac06ad4ba2e19378240fd5bcfe8ee39afbced377e271ac908

2- Buying (0% tax) (passed):
https://testnet.bscscan.com/tx/0xaae8241412eac8e4f4c1583f9a1dbc7767a758e0160af21d0671da38c8e1b4a2

3- Selling (0% tax) (passed):
https://testnet.bscscan.com/tx/0x673f9dd87c3192a2cba9e2ed3cba0e67e432109af9dd2f9e11aced407f6c2a27

4- Transferring (0% tax) (passed):
https://testnet.bscscan.com/tx/0xd56d0d14154b5d59cf1329021744ecb17cae07a1c1a337e423056d6d1ee76669

5- Participating in presale (10 times) (passed):
https://testnet.bscscan.com/tx/0xd5f4d12716ff6e01ba2d3b44cc40b8aeef63c8048e151b891dc09efebe5d24c8
https://testnet.bscscan.com/tx/0x91886fa725c8b625824a763fef7315cb4ac5f8a0eb1699e348f14845822d460a
https://testnet.bscscan.com/tx/0x8c30ec8838758b123df111324dbebd5bfaab0660ba74a4c52e0f4d3df1436265

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