



# Smart Contract Audit

FOR

# BabyApeCoin

DATED : 09 November 23'



# AUDIT SUMMARY

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**Project name** – BabyApeCoin

**Date:** 09 November 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	2	0
Acknowledged	0	0	0	0	0
Resolved	0	1	0	0	0

# USED TOOLS

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## 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/0x2e57b29f5e141b1b546fe0023de7f90e592a6a45#code>

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# Token Information

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**Token Address: -**

0xF80FcfaD81bFC386CE5E6515267D4a2001aFE02c

**Name:** BabyApeCoin

**Symbol:** BABYAPE

**Decimals:** 18

**Network:** ETH

**Token Type:** ERC20

**Owner: -** 0xdda9111d3E9ad58e6f74BCa014998A62cB36178b

**Deployer: -**

0xdda9111d3E9ad58e6f74BCa014998A62cB36178b

**Token Supply:** 100000000

**Checksum:** e1d0e4f3ac5d6777fbd4657945e19e43

**Testnet version:**

The tests were performed using the contract deployed on the Binance smart chain Testnet, which can be found at the following address:

<https://testnet.bscscan.com/address/0x2e57b29f5e141b1b546fe0023de7f90e592a6a45#code>

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# TOKEN OVERVIEW

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**buy fee:** 0%

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**Sell fee:** 0%

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**transfer fee:** 0%

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**Fee Privilege:** Owner

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**Ownership:** Renounced

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**Minting:** None

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**Max wallet:** Yes

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**Max Trx:** Yes

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**Blacklist:** No

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**Other Privileges:**

Ownership is Renounced

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# AUDIT METHODOLOGY

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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 is exercised 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

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- |                                    |                               |
|------------------------------------|-------------------------------|
| ✓ Return values of low-level calls | ✓ Gasless Send                |
| ✓ Private modifier                 | ✓ Using block.timestamp       |
| ✓ Multiple Sends                   | ✓ Re-entrancy                 |
| ✓ Using Suicide                    | ✓ Tautology or contradiction  |
| ✓ Gas Limitand Loops               | ✓ Timestamp Dependence        |
| ✓ Address hardcoded                | ✓ Revert/require functions    |
| ✓ Exception Disorder               | ✓ Use of tx.origin            |
| ✓ Using inline assembly            | ✓ Integer overflow/underflow  |
| ✓ Divide before multiply           | ✓ Dangerous strict equalities |
| ✓ Missing Zero Address Validation  | ✓ Using SHA3                  |
| ✓ Compiler version not fixed       | ✓ Using throw                 |
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# 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	2
◆ Gas Optimization / Suggestions	0





# POINTS TO NOTE

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- **Ownership is Renounced**



# STATIC ANALYSIS

```
INFO:Detectors:
Reentrancy in BabyApeCoin._updateRouterV2(address) (BabyApeCoin.sol#1084-1093):
  External calls:
    - pairV2 = IUniswapV2Factory(routerV2.factory()).createPair(address(this),routerV2.WETH()) (BabyApeCoin.sol#1086)
  State variables written after the call(s):
    - _setAMMPair(pairV2,true) (BabyApeCoin.sol#1090)
      - AMMPairs[pair] = isPair (BabyApeCoin.sol#1102)
    - _excludeFromLimits(router,true) (BabyApeCoin.sol#1088)
      - isExcludedFromLimits[account] = isExcluded (BabyApeCoin.sol#1117)
    - _setAMMPair(pairV2,true) (BabyApeCoin.sol#1090)
      - isExcludedFromLimits[account] = isExcluded (BabyApeCoin.sol#1117)
  Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-2
INFO:Detectors:
Reentrancy in BabyApeCoin._transfer(address,address,uint256) (BabyApeCoin.sol#1022-1002):
  External calls:
    - _swapTokensForCoin(token2Swap) (BabyApeCoin.sol#1063)
    - routerV2.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),block.timestamp) (BabyApeCoin.sol#977)
  External calls sending eth:
    - success = address(marketingAddress).send(marketingPortion) (BabyApeCoin.sol#1060)
  Event emitted after the call(s):
    - Transfer(from,to,amount) (BabyApeCoin.sol#383)
      - super._transfer(from,to,amount) (BabyApeCoin.sol#1080)
    - marketingFeeSent(marketingAddress,marketingPortion) (BabyApeCoin.sol#1070)
  Reentrancy in BabyApeCoin._updateRouterV2(address) (BabyApeCoin.sol#1084-1093):
    External calls:
      - pairV2 = IUniswapV2Factory(routerV2.factory()).createPair(address(this),routerV2.WETH()) (BabyApeCoin.sol#1086)
    Event emitted after the call(s):
      - AMMPairsUpdated(pair,isPair) (BabyApeCoin.sol#1109)
      - _setAMMPair(pairV2,true) (BabyApeCoin.sol#1090)
      - ExcludeFromLimits(account,isExcluded) (BabyApeCoin.sol#1119)
      - _setAMMPair(pairV2,true) (BabyApeCoin.sol#1090)
      - ExcludeFromLimits(account,isExcluded) (BabyApeCoin.sol#1119)
      - _excludeFromLimits(router,true) (BabyApeCoin.sol#1088)
      - RouterV2Updated(router) (BabyApeCoin.sol#1092)
  Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3

INFO:Detectors:
Context._msgData() (BabyApeCoin.sol#151-153) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version0.8.19 (BabyApeCoin.sol#18) necessitates a version too recent to be trusted. Consider deploying with 0.8.18.
solc-0.8.19 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Function IUniswapV2Pair.DOMAIN_SEPARATOR() (BabyApeCoin.sol#715) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (BabyApeCoin.sol#716) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (BabyApeCoin.sol#733) is not in mixedCase
Function IUniswapV2Router01.WETH() (BabyApeCoin.sol#754) is not in mixedCase
Event BabyApeCoin.marketingAddressUpdated(address) (BabyApeCoin.sol#918) is not in CapWords
Event BabyApeCoin.marketingFeesUpdated(uint16,uint16,uint16) (BabyApeCoin.sol#919) is not in CapWords
Event BabyApeCoin.marketingFeeSent(address,uint256) (BabyApeCoin.sol#920) is not in CapWords
Parameter BabyApeCoin.initialize(address)._router (BabyApeCoin.sol#954) is not in mixedCase
Parameter BabyApeCoin.updateSwapThreshold(uint16)._swapThresholdRatio (BabyApeCoin.sol#980) is not in mixedCase
Parameter BabyApeCoin.marketingAddressSetup(address)._newAddress (BabyApeCoin.sol#995) is not in mixedCase
Parameter BabyApeCoin.marketingFeesSetup(uint16,uint16,uint16)._buyFee (BabyApeCoin.sol#1005) is not in mixedCase
Parameter BabyApeCoin.marketingFeesSetup(uint16,uint16,uint16)._sellFee (BabyApeCoin.sol#1005) is not in mixedCase
Parameter BabyApeCoin.marketingFeesSetup(uint16,uint16,uint16)._transferFee (BabyApeCoin.sol#1005) is not in mixedCase
Parameter BabyApeCoin.updateMaxWalletAmount(uint256)._maxWalletAmount (BabyApeCoin.sol#1122) is not in mixedCase
Variable BabyApeCoin.AMMPairs (BabyApeCoin.sol#908) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

INFO:Detectors:
Reentrancy in BabyApeCoin._transfer(address,address,uint256) (BabyApeCoin.sol#1022-1002):
  External calls:
    - success = address(marketingAddress).send(marketingPortion) (BabyApeCoin.sol#1060)
  State variables written after the call(s):
    - super._transfer(from,to,amount) (BabyApeCoin.sol#1080)
      - _balances[from] = fromBalance - amount (BabyApeCoin.sol#377)
      - _balances[to] += amount (BabyApeCoin.sol#380)
    - _marketingPending = 0 (BabyApeCoin.sol#1073)
    - _swapping = false (BabyApeCoin.sol#1077)
  Event emitted after the call(s):
    - Transfer(from,to,amount) (BabyApeCoin.sol#383)
      - super._transfer(from,to,amount) (BabyApeCoin.sol#1080)
    - marketingFeeSent(marketingAddress,marketingPortion) (BabyApeCoin.sol#1070)
  Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4
INFO:Detectors:
Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,address,uint256).amountADesired (BabyApeCoin.sol#759) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,address,uint256).amountBDesired (BabyApeCoin.sol#760)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar
INFO:Detectors:
BabyApeCoin.constructor() (BabyApeCoin.sol#931-952) uses literals with too many digits:
  - updateMaxWalletAmount(2000000000 * (10 ** decimals()) / 10) (BabyApeCoin.sol#940)
BabyApeCoin.constructor() (BabyApeCoin.sol#931-952) uses literals with too many digits:
  - _mint(supplyRecipient,10000000000 * (10 ** decimals()) / 10) (BabyApeCoin.sol#950)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits
INFO:Slither:BabyApeCoin.sol analyzed (12 contracts with 93 detectors), 29 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



# FUNCTIONAL TESTING

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## 1- Approve (**passed**):

<https://testnet.bscscan.com/tx/0x4f6e66277c5e25870375f773090f11b696b85528c1d76662245a9a87d17470f6>

## 2- Increase Allowance (**passed**):

<https://testnet.bscscan.com/tx/0x483434bd41a9aaf70533545e2db7961105a9bea47f93b61d0bc7e1953250f745>

## 3- Decrease Allowance (**passed**):

<https://testnet.bscscan.com/tx/0x35e7551225512f1401192edb36714372ee81cd4595ca086a629c3475592e433d>

## 4- Burn From(**passed**):

<https://testnet.bscscan.com/tx/0x71cacfadd9fba906be3bf417f1c3d3ed06be50f9e390318cfec2a28be7aa6f64>

## 5- Burn (**passed**):

<https://testnet.bscscan.com/tx/0xfdc3a7a0b9226e16a077c2a012e19e83ef97c7c3f15db578c37e26e8e96dd999>

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# MANUAL TESTING

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**Centralization** – Owner can blacklist wallets.

**Severity: High**

**function: blacklist**

**Status: Resolved, Ownership is Renounced**

## Overview:

The owner can blacklist wallets from transferring tokens for an indefinite period of time which is not recommended. Which can lock the user's token.

```
function blacklist(address account, bool isBlacklisted)
external onlyOwner {
    blacklisted[account] = isBlacklisted;

    emit BlacklistUpdated(account, isBlacklisted);
}
```

## Suggestion:

There should be a locking period so that the wallet cannot be locked for an indefinite Period of time.

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# MANUAL TESTING

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## Centralization – Missing Zero Address

Severity: Low

function: `excludeFromLimits`

Status: Open

### Overview:

functions can take a zero address as a parameter (0x00000...). If a function parameter of address type is not properly validated by checking for zero addresses, there could be serious consequences for the contract's functionality.

```
function excludeFromLimits(address account, bool  
isExcluded) external onlyOwner {  
    _excludeFromLimits(account, isExcluded);  
}
```

### Suggestion:

It is suggested that the address should not be zero or dead.

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# MANUAL TESTING

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**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 setAMMPair(address pair, bool isPair) external  
onlyOwner {  
    require(pair != pairV2, "DefaultRouter: Cannot remove  
initial pair from list");  
  
    _setAMMPair(pair, isPair);  
}
```

**Suggestion:**

Add an event to these important functions where address updation is happening. This can also be marked as an indexed event for better off-chain tracking.

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# DISCLAIMER

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# ABOUT AUDITACE

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We specializes in providing thorough and reliable audits for Web3 projects. With a team of experienced professionals, we use cutting-edge technology and rigorous methodologies to evaluate the security and integrity of blockchain systems. We are committed to helping our clients ensure the safety and transparency of their digital assets and transactions.



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