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Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

BabyGirlETF

TOKEN OVERVIEW

Risk Findings

Severity	Found
High	1
Medium	1
Low	0
Informational	1

Centralization Risks

Owner Privileges	Description
Can Owner Set Taxes >25% ?	Not Detected
Owner Can enable trading ?	Detected
Can Owner Disable Trades ?	Not Detected
Can Owner Mint ?	Not Detected
Can Owner Blacklist ?	Not Detected
Can Owner set Max Wallet amount ?	Not Detected
Can Owner Set Max TX amount ?	Not Detected

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OVERVIEW

The Expelee team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analysed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

Audit Result	**Passed with high risk**
KYC Verification	**-**
Audit Date	**08 Jan 2024**

CONTRACT DETAILS

Token Name: BabyGirlETF

Symbol: BabyGirlETF

Network: BscScan

Decimals: 9

Token Type: BEP – 20

Contract Address:
0xB11ec29199428Db92ED2B19Cc4afEE0E94Afd3A9

Total Supply: 1,000,000,000

Owner's Wallet:
0xECDE515c708F1b33Be1fB892982F4d7d55F77cd3

Deployer's Wallet:
0xECDE515c708F1b33Be1fB892982F4d7d55F77cd3

Checksum: A2032c616934aeb47e6039f76b20d2h5

Testnet.
https://testnet.bscscan.com/address/0x8f9d35cf1c338ae54ee72ed88387f2b245ac3113#code

AUDIT METHODOLOGY

Audit Details

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.

Audit Goals

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch , that lead to scams and rugpulls.

Code Quality

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability

Tools

- DE
- Open Zeppelin
- Code Analyzer
- Solidity Code
- Compiler
- Hardhat

VULNERABILITY CHECKS

Design Logic	Passed
Compiler warnings	Passed
Private user data leaks	Passed
Timestamps dependence	Passed
Integer overflow and underflow	Passed
Race conditions & reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front Running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zepplin module	Passed

RISK CLASSIFICATION

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and acces control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

High Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Medium Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

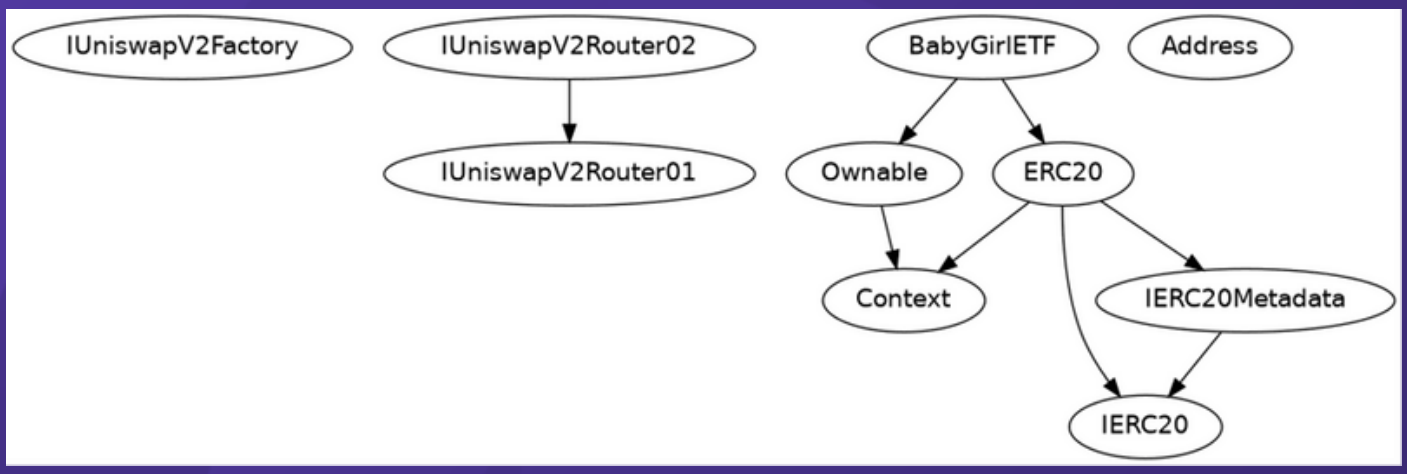
Low Risk

Issues on this level are minor details and warning that can remain unfixed.

Informational

Issues on this level are minor details and warning that can remain unfixed.

INHERITANCE TREES



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STATIC ANALYSIS

```
INFO:Detectors:
BabyGirlETF.constructor().pinkLock (BabyGirlETF.sol#289) is a local variable never initialized
BabyGirlETF.constructor().router (BabyGirlETF.sol#288) is a local variable never initialized
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#uninitialized-local-variables
INFO:Detectors:
BabyGirlETF.claimStuckTokens(address) (BabyGirlETF.sol#342-351) ignores return value by address(msg.sender).sendValue(address(this).balance) (BabyGirlETF.sol#345)
BabyGirlETF.swapAndLiquify(uint256) (BabyGirlETF.sol#473-502) ignores return value by uniswapV2Router.addLiquidityETH{value: newBalance}(address(this),otherHalf,0,0,address(0xdead),block.timestamp) (BabyGirlETF.sol#492-499)
BabyGirlETF.swapAndSendMarketing(uint256) (BabyGirlETF.sol#504-523) ignores return value by address(marketingWallet).sendValue(newBalance) (BabyGirlETF.sol#520)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-return
INFO:Detectors:
Reentrancy in BabyGirlETF._transfer(address,address,uint256) (BabyGirlETF.sol#402-459):
        External calls:
        - swapAndLiquify(liquidityTokens) (BabyGirlETF.sol#430)
                - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(half,0,path,address(this),block.timestamp) (BabyGirlETF.sol#483-488)
                - uniswapV2Router.addLiquidityETH{value: newBalance}(address(this),otherHalf,0,0,address(0xdead),block.timestamp) (BabyGirlETF.sol#492-499)
        - swapAndSendMarketing(marketingTokens) (BabyGirlETF.sol#435)
                - (success) = recipient.call{value: amount}() (BabyGirlETF.sol#71)
                - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),block.timestamp) (BabyGirlETF.sol#511-516)
                - address(marketingWallet).sendValue(newBalance) (BabyGirlETF.sol#520)
        External calls sending eth:
        - swapAndLiquify(liquidityTokens) (BabyGirlETF.sol#430)
                - uniswapV2Router.addLiquidityETH{value: newBalance}(address(this),otherHalf,0,0,address(0xdead),block.timestamp) (BabyGirlETF.sol#492-499)
        - swapAndSendMarketing(marketingTokens) (BabyGirlETF.sol#435)
                - (success) = recipient.call{value: amount}() (BabyGirlETF.sol#71)
        Event emitted after the call(s):
        - SwapAndSendMarketing(tokenAmount,newBalance) (BabyGirlETF.sol#522)
                - swapAndSendMarketing(marketingTokens) (BabyGirlETF.sol#435)
        - Transfer(sender,recipient,amount) (BabyGirlETF.sol#215)
                - super._transfer(from,address(this),fees) (BabyGirlETF.sol#455)
        - Transfer(sender,recipient,amount) (BabyGirlETF.sol#215)
                - super._transfer(from,to,amount) (BabyGirlETF.sol#458)
Reentrancy in BabyGirlETF.swapAndLiquify(uint256) (BabyGirlETF.sol#473-502):
        External calls:
        - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(half,0,path,address(this),block.timestamp) (BabyGirlETF.sol#483-488)
```

```
INFO:Detectors:
Context._msgData() (BabyGirlETF.sol#81-84) is never used and should be removed
ERC20._burn(address,uint256) (BabyGirlETF.sol#226-237) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version0.8.19 (BabyGirlETF.sol#16) 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:
Low level call in Address.sendValue(address,uint256) (BabyGirlETF.sol#68-73):
        - (success) = recipient.call{value: amount}() (BabyGirlETF.sol#71)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
INFO:Detectors:
Function IUniswapV2Router01.WETH() (BabyGirlETF.sol#24) is not in mixedCase
Parameter BabyGirlETF.updateBuyFees(uint256,uint256)._liquidityFeeOnBuy (BabyGirlETF.sol#364) is not in mixedCase
Parameter BabyGirlETF.updateBuyFees(uint256,uint256)._marketingFeeOnBuy (BabyGirlETF.sol#364) is not in mixedCase
Parameter BabyGirlETF.updateSellFees(uint256,uint256)._liquidityFeeOnSell (BabyGirlETF.sol#375) is not in mixedCase
Parameter BabyGirlETF.updateSellFees(uint256,uint256)._marketingFeeOnSell (BabyGirlETF.sol#375) is not in mixedCase
Parameter BabyGirlETF.changeMarketingWallet(address)._marketingWallet (BabyGirlETF.sol#386) is not in mixedCase
Parameter BabyGirlETF.setSwapEnabled(bool)._enabled (BabyGirlETF.sol#461) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Redundant expression "this (BabyGirlETF.sol#82)" inContext (BabyGirlETF.sol#76-85)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements
INFO:Detectors:
BabyGirlETF.uniswapV2Pair (BabyGirlETF.sol#256) should be immutable
BabyGirlETF.uniswapV2Router (BabyGirlETF.sol#255) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:BabyGirlETF.sol analyzed (10 contracts with 93 detectors), 25 result(s) found
```

TESTNET VERSION

1- Approve (passed):
https://testnet.bscscan.com/tx/0x97039be79a5b75a2f8eeca1437294cc3082197593a049664c7d361d0be522a33

2- Increase Allowance (passed):
https://testnet.bscscan.com/tx/0x1ad3ce06de897c94967c4ab3d8f78f534fe6521d43790db1b35561dec2d767bb

3- Decrease Allowance (passed):
https://testnet.bscscan.com/tx/0xa5a74bc80ca9b1225c7fd6306a6be5d0d0dace0eeba3662057a369b88f892291

4- Enable Trading (passed):
https://testnet.bscscan.com/tx/0x4da5938fd36deb74cad5deafa029a61c442d8ca7f8bcf0799e21910cada97dfa

5- Set Swap Enable (passed):
https://testnet.bscscan.com/tx/0x073f256abb260b41fce0bd5ced668a10e0cc8f047edf629d6b8391a81ef901e0

MANUAL REVIEW

Severity Criteria

Expelee assesses the severity of disclosed vulnerabilities according to methodology based on OWASP standarts.

Vulnerabilities are dividend into three primary risk categroies:
High
Medium
Low

High-level considerations for vulnerabilities span the following key areas when conducting assessments:

- Malicious input handling
- Escalation of privileges
- Arithmetic
- Gas use

Overall Risk Severity				
Impact	HIGH	Medium	High	Critical
	MEDIUM	Low	Medium	High
	LOW	Note	Low	Medium
		LOW	MEDIUM	HIGH
	Likelihood			

HIGH RISK FINDING

Enabling Trades

Category: Centralization
Status: Open
Severity: High
Function: enableTrading

Overview:
The EnableTrading 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 enableTrading() external onlyOwner{
require(!tradingEnabled, "Trading already enabled.");
    tradingEnabled = true;
    swapEnabled = true;
  }
```

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.

HIGH RISK FINDING

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 give investors more confidence in the eventual activation of trading capabilities, mitigating concerns of potential bad-faith actions by the original owner.

MEDIUM RISK FINDING

Missing Require Check.

Category: Centralization
Status: Open
Severity: Medium
Function: changeMarketingWallet

Overview:
The owner can set any arbitrary address excluding zero address as this is not recommended because if the owner will set the address to the contract address, then the Eth will not be sent to that address and the transaction will fail and this will lead to a potential honeypot in the contract.

```
    function changeMarketingWallet(address
_marketingWallet) external onlyOwner{
require(_marketingWallet != marketingWallet,"Marketing wallet
is already that address");
require(_marketingWallet != address(0),"Marketing wallet
cannot be the zero address");
   marketingWallet = _marketingWallet;

emit MarketingWalletChanged(marketingWallet);
 }
```

Suggestion:
It is recommended that the address should not be able to be set as a contract address.

INFORMATIONAL RISK FINDING

Status: Open
Subject: Remove unused code
Severity: Optimization

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; // silence state mutability warning without generating bytecode - see https://github.com/ethereum/solidity/issues/2691
return msg.data;
  }
```

ABOUT EXPELEE

Expelee is a product-based aspirational Web3 start-up. Coping up with numerous solutions for blockchain security and constructing a Web3 ecosystem from deal making platform to developer hosting open platform, while also developing our own commercial and sustainable blockchain.

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