Cyberscope

Audit Report

LuckysLeprecoin

March 2024

Network	ETH
Address	0x357c915d7c12dc506d13332bb06c932af13e99a0
Audited by	© cyberscope

Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
●	BLC	Business Logic Concern	Unresolved
●	MEE	Missing Events Emission	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L15	Local Scope Variable Shadowing	Unresolved
●	L16	Validate Variable Setters	Unresolved
●	L19	Stable Compiler Version	Unresolved

Table of Contents

Review

Contract Name	LuckysLeprecoin
Compiler Version	v0.8.0+commit.c7dfd78e
Optimization	200 runs
Explorer	https://etherscan.io/address/0x357c915d7c12dc506d13332bb06c932af13e99a0
Address	0x357c915d7c12dc506d13332bb06c932af13e99a0
Network	ETH
Symbol	LUCKYSLP
Decimals	18
Total Supply	711,000,000,000

Audit Updates

Initial Audit	11 Mar 2024

Source Files

Filename	SHA256
LuckysLeprecoin.sol	3ba9003b5db231fe3d2a6033b06baba4fb93926c8fbb20c41d845ac8833b7949

Findings Breakdown

Critical	0
Medium	0
Minor / Informative	6

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	0	0	0	0
Medium	0	0	0	0
Minor / Informative	6	0	0	0

BLC - Business Logic Concern

Criticality	Minor / Informative
Location	LuckysLeprecoin.sol#L599,618
Status	Unresolved

Description

The contract contains a mapping `blacklists` that tracks if an address is blacklisted or not. This mechanism is integrated into the `_beforeTokenTransfer` function, which checks if either the sender or recipient is blacklisted, preventing the transfer if true. However, the contract lacks any public or external functions that would allow the contract owner to add or remove addresses from this blacklist. This omission renders the blacklist mechanism redundant, limiting its intended utility.

```
mapping(address => bool) public blacklists;

require(!blacklists[to] && !blacklists[from], "Blacklisted");
```

Recommendation

It is recommended to re-evaluate the business logic surrounding the `blacklist` functionality. This re-evaluation should consider the of a blacklist mechanism. If the blacklist is deemed necessary, the team should implement the missing functionality to manage the blacklist dynamically. This implementation should include functions to add and remove addresses from the blacklist. Alternatively, if upon reassessment, the blacklist mechanism is found to be unnecessary, it should be removed from the contract to simplify the codebase and eliminate unused or misleading functionalities.

MEE - Missing Events Emission

Criticality	Minor / Informative
Location	LuckysLeprecoin.sol#L606
Status	Unresolved

Description

The contract performs actions and state mutations from external methods that do not result in the emission of events. Emitting events for significant actions is important as it allows external parties, such as wallets or dApps, to track and monitor the activity on the contract. Without these events, it may be difficult for external parties to accurately determine the current state of the contract.

```
function setRule(bool _limited, address _uniswapV2Pair, uint256
_maxHoldingAmount, uint256 _minHoldingAmount) external
onlyOwner {
    limited = _limited;
    uniswapV2Pair = _uniswapV2Pair;
    maxHoldingAmount = _maxHoldingAmount;
    minHoldingAmount = _minHoldingAmount;
}
```

Recommendation

It is recommended to include events in the code that are triggered each time a significant action is taking place within the contract. These events should include relevant details such as the user's address and the nature of the action taken. By doing so, the contract will be more transparent and easily auditable by external parties. It will also help prevent potential issues or disputes that may arise in the future.

L04 - Conformance to Solidity Naming Conventions

Criticality	Minor / Informative
Location	LuckysLeprecoin.sol#L606
Status	Unresolved

Description

The Solidity style guide is a set of guidelines for writing clean and consistent Solidity code. Adhering to a style guide can help improve the readability and maintainability of the Solidity code, making it easier for others to understand and work with.

The followings are a few key points from the Solidity style guide:

1. Use camelCase for function and variable names, with the first letter in lowercase (e.g., myVariable, updateCounter).
2. Use PascalCase for contract, struct, and enum names, with the first letter in uppercase (e.g., MyContract, UserStruct, ErrorEnum).
3. Use uppercase for constant variables and enums (e.g., MAX_VALUE, ERROR_CODE).
4. Use indentation to improve readability and structure.
5. Use spaces between operators and after commas.
6. Use comments to explain the purpose and behavior of the code.
7. Keep lines short (around 120 characters) to improve readability.

```
address _uniswapV2Pair
uint256 _minHoldingAmount
bool _limited
uint256 _maxHoldingAmount
```

Recommendation

By following the Solidity naming convention guidelines, the codebase increased the readability, maintainability, and makes it easier to work with.
Find more information on the Solidity documentation
https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-convention.

L15 - Local Scope Variable Shadowing

Criticality	Minor / Informative
Location	LuckysLeprecoin.sol#L601
Status	Unresolved

Description

Local scope variable shadowing occurs when a local variable with the same name as a variable in an outer scope is declared within a function or code block. When this happens, the local variable "shadows" the outer variable, meaning that it takes precedence over the outer variable within the scope in which it is declared.

```
uint256 _totalSupply
```

Recommendation

It's important to be aware of shadowing when working with local variables, as it can lead to confusion and unintended consequences if not used correctly. It's generally a good idea to choose unique names for local variables to avoid shadowing outer variables and causing confusion.

L16 - Validate Variable Setters

Criticality	Minor / Informative
Location	LuckysLeprecoin.sol#L608
Status	Unresolved

Description

The contract performs operations on variables that have been configured on user-supplied input. These variables are missing of proper check for the case where a value is zero. This can lead to problems when the contract is executed, as certain actions may not be properly handled when the value is zero.

```
uniswapV2Pair = _uniswapV2Pair
```

Recommendation

By adding the proper check, the contract will not allow the variables to be configured with zero value. This will ensure that the contract can handle all possible input values and avoid unexpected behavior or errors. Hence, it can help to prevent the contract from being exploited or operating unexpectedly.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	LuckysLeprecoin.sol#L12,40,114,204,234,591
Status	Unresolved

Description

The `^` symbol indicates that any version of Solidity that is compatible with the specified version (i.e., any version that is a higher minor or patch version) can be used to compile the contract. The version lock is a mechanism that allows the author to specify a minimum version of the Solidity compiler that must be used to compile the contract code. This is useful because it ensures that the contract will be compiled using a version of the compiler that is known to be compatible with the code.

```
pragma solidity ^0.8.0;
```

Recommendation

The team is advised to lock the pragma to ensure the stability of the codebase. The locked pragma version ensures that the contract will not be deployed with an unexpected version. An unexpected version may produce vulnerabilities and undiscovered bugs. The compiler should be configured to the lowest version that provides all the required functionality for the codebase. As a result, the project will be compiled in a well-tested LTS (Long Term Support) environment.

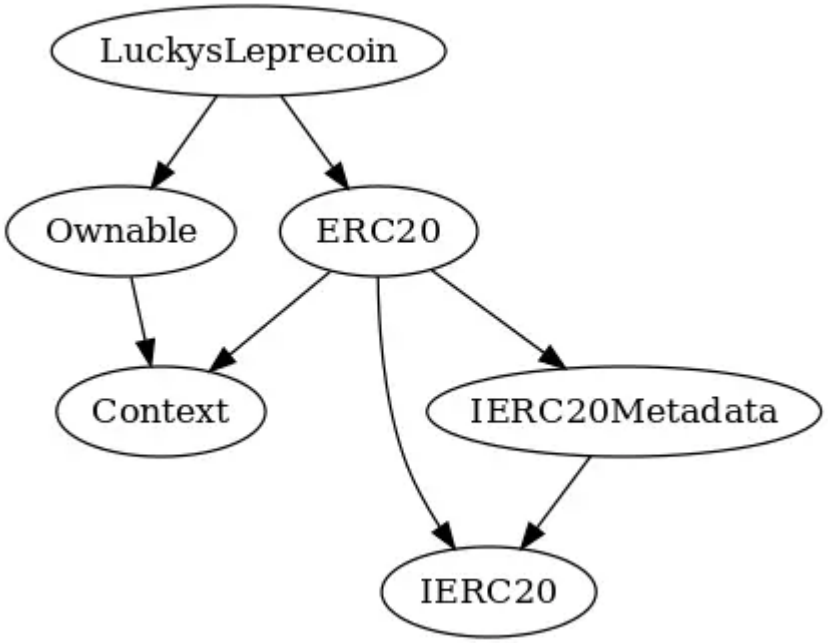
Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
		Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-

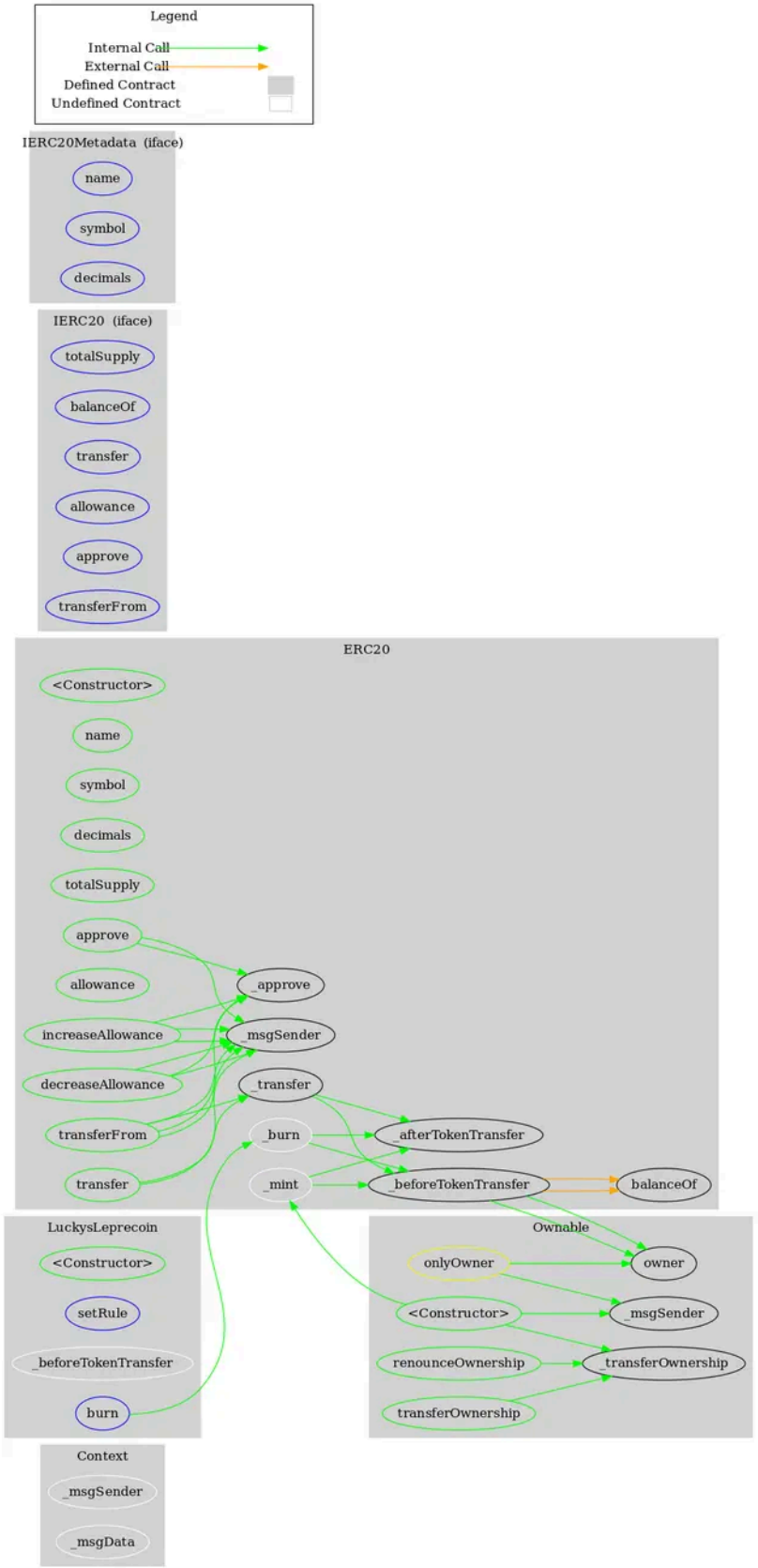
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
ERC20	Implementation	Context, IERC20, IERC20Metadata		
		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	

	_beforeTokenTransfer	Internal	✓	
	_afterTokenTransfer	Internal	✓	
LuckysLeprecoin	Implementation	Ownable, ERC20		
		Public	✓	ERC20
	setRule	External	✓	onlyOwner
	_beforeTokenTransfer	Internal	✓	
	burn	External	✓	-

Inheritance Graph



Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
IERC20Metadata (iface)
name
symbol
decimals
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom
ERC20
<Constructor>
name
symbol
decimals
totalSupply
approve
allowance
increaseAllowance
decreaseAllowance
transferFrom
transfer
_approve
_msgSender
_transfer
_burn
_mint
_afterTokenTransfer
_beforeTokenTransfer
balanceOf
LuckysLeprecoin
<Constructor>
setRule
_beforeTokenTransfer
burn
Ownable
onlyOwner
owner
<Constructor>
_msgSender
renounceOwnership
_transferOwnership
transferOwnership
Context
_msgSender
_msgData

Summary

LuckysLeprecoin contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. LuckysLeprecoin is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract ownership has been renounced.

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The Cyberscope team

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