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*Bring trust into your projects*

**Blockchain Security | Smart Contract Audits | KYC**

MADE IN GERMANY

# Audit

**Security Assessment**  
**11. September, 2021**

**For**



**LAMBOTTERY**

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Version	Date	Description
1.0	11. September 2021	<ul style="list-style-type: none"><li>• Layout project</li><li>• Automated- /Manual-Security Testing</li><li>• Summary</li></ul>

## **Network**

Binance Smart Chain (BEP20)

## **Website**

<https://www.lambottery.finance/>

## **Telegram**

<https://t.me/lambotteryfinance>

## **Twitter**

<https://twitter.com/Lambottery>

## **Instagram**

<https://instagram.com/lambotterytoken>



## Description

LAMBOTTERY is a token born to succeed. They have dedicated significant time to market research, product and contract design, tokenomics and our brand to create a revolutionary token set to give lucky winners life changing sums of money. Above this, due to their tokenomics and percentage set to grow our Liquidity Pool, they also predict huge gains for our diamond hand holders.

They are a team of individuals that all came together early 2021 and have had numerous investment successes together and been victims of numerous scams. Here they have created a safe and secure platform to succeed by way of token value / high market cap potential and winners winning big money each hour, even bigger prizes each day and Lamborghini size winnings each week.

Their ambition is to achieve \$1.5M daily trading volume which means their weekly prize will be a little over \$261,000, enough to buy yourself a Lamborghini Huracán.

Additionally, at this trading volume, they will look to support a token called Fearless which we are in partnership with, as they are designed to give back to the most worth cause of all in that of first responders / frontline workers around the world by supporting them with their marketing needs.

## Project Engagement

During the 19th of August, **Lambottery Team** engaged Solidproof.io to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. They provided Solidproof.io with access to their code repository and whitepaper.

## Logo



# LAMBOTTERY

## Contract Link

**v1.0**

Hourly: TBA

Daily: TBA

Weekly: TBA

Lambottery Contract: TBA

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# Vulnerability & Risk Level

Risk represents the probability that a certain source-threat will exploit vulnerability, and the impact of that event on the organization or system. Risk Level is computed based on CVSS version 3.0.

Level	Value	Vulnerability	Risk (Required Action)
<b>Critical</b>	9 - 10	A vulnerability that can disrupt the contract functioning in a number of scenarios, or creates a risk that the contract may be broken.	Immediate action to reduce risk level.
<b>High</b>	7 – 8.9	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.	Implementation of corrective actions as soon as possible.
<b>Medium</b>	4 – 6.9	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.	Implementation of corrective actions in a certain period.
<b>Low</b>	2 – 3.9	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.	Implementation of certain corrective actions or accepting the risk.
<b>Informational</b>	0 – 1.9	A vulnerability that have informational character but is not effecting any of the code.	An observation that does not determine a level of risk

# Auditing Strategy and Techniques Applied

Throughout the review process, care was taken to evaluate the repository for security-related issues, code quality, and adherence to specification and best practices. To do so, reviewed line-by-line by our team of expert pentesters and smart contract developers, documenting any issues as there were discovered.

## Methodology

The auditing process follows a routine series of steps:

1. Code review that includes the following:
  - i) Review of the specifications, sources, and instructions provided to SolidProof to make sure we understand the size, scope, and functionality of the smart contract.
  - ii) Manual review of code, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
  - iii) Comparison to specification, which is the process of checking whether the code does what the specifications, sources, and instructions provided to SolidProof describe.
2. Testing and automated analysis that includes the following:
  - i) Test coverage analysis, which is the process of determining whether the test cases are actually covering the code and how much code is exercised when we run those test cases.
  - ii) Symbolic execution, which is analysing a program to determine what inputs causes each part of a program to execute.
3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts.



## Used Code from other Frameworks/Smart Contracts (direct imports)

Imported packages:

- OpenZeppelin
  - Address
  - Ownable
  - SafeMath
  - Context
  - IBEP20
- Uniswap
  - UniswapV2Factory
  - UniswapV2Pair
  - UniswapV2Router01
  - UniswapV2Router02



## Tested Contract Files

This audit covered the following files listed below with a SHA-1 Hash.

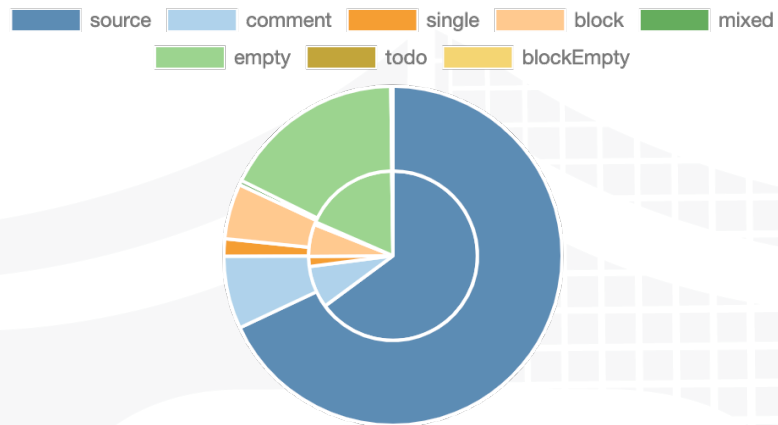
*A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.*

### v1.0

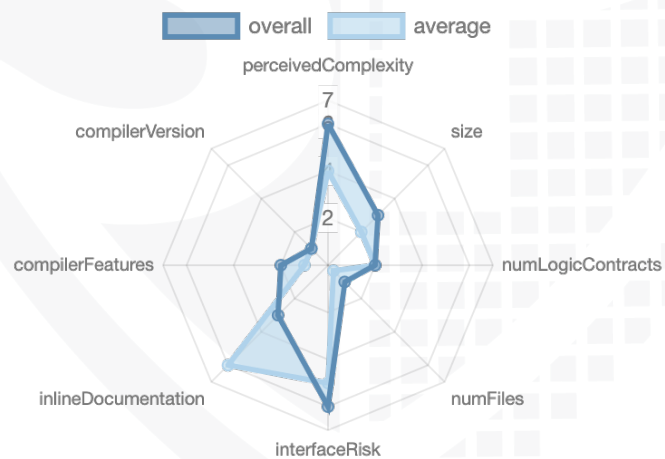
File Name	SHA-1 Hash
contracts/Lambottery.sol	6ea0c77b3a4667f3360fb9ed074454fe4d9fab4a
contracts/LotteryTracker.sol	1bbc95dd925539a01d354dcfe7275f3b327b5ef7
contracts/LotteryWeeklyTracker.sol	2be51678b57811a074e43b0e2c4edae900a6ac36

# Metrics

## Source Lines v1.0



## Risk Level v1.0



## Capabilities

### Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	3	1	11	13

### Exposed Functions

*This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.*

Version	Public	Payable
1.0	204	5

Version	External	Internal	Private	Pure	View
1.0	175	178	9	19	96

### State Variables

Version	Total	Public
1.0	87	56

### Capabilities

Version	Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	<code>^0.8.0</code>		yes	**** (0 asm blocks)	

Version	Transfers ETH	Low-Level Calls	DelegateCall	Uses Hash Functions	ECRecover	New/ Create/ Create2
1.0	yes			yes		



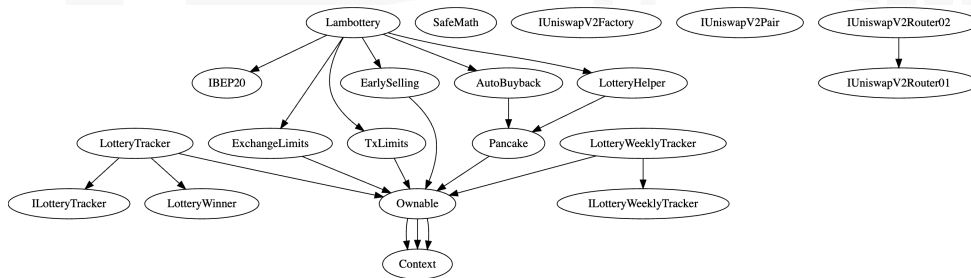
## Scope of Work

The above token Team provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract (usual the same name as team appended with .sol).

We will verify the following claims:

1. Correct implementation of Token standard
2. Deployer cannot mint any new tokens
3. Deployer cannot burn or lock user funds
4. Deployer cannot pause the contract
5. Overall checkup (Smart Contract Security)

## Inheritance Graph v1.0



## Verify Claims

### Correct implementation of Token standard

Tested	Verified
✓	✓

Function	Description	Exist	Tested	Verified
TotalSupply	provides information about the total token supply	✓	✓	✓
BalanceOf	provides account balance of the owner's account	✓	✓	✓
Transfer	executes transfers of a specified number of tokens to a specified address	✓	✓	✓
TransferFrom	executes transfers of a specified number of tokens from a specified address	✓	✓	✓
Approve	allow a spender to withdraw a set number of tokens from a specified account	✓	✓	✓
Allowance	returns a set number of tokens from a spender to the owner	✓	✓	✓

### Optional implementations

Function	Description	Exist	Tested	Verified
renounceOwnership	Owner renounce ownership for more trust	✓	✓	—

## Deployer cannot mint any new tokens

Name	Exist	Tested	Verified	File
Deployer cannot mint	✓	✓	✓	Main
Comment	Line: -			

Max / Total Supply: 1.000.000





## Deployer cannot burn or lock user funds

Name	Exist	Tested	Verified
Deployer cannot lock	✓	✓	✓
Deployer cannot burn	✓	✓	✓



## Deployer cannot pause the contract

Name	Exist	Tested	Verified
Deployer cannot pause	✓	✓	✓



## Overall checkup (Smart Contract Security)

Tested	Verified
✓	✓

### Legend









Attribute	Symbol
Verified / Checked	✓
Partly Verified	⚠
Unverified / Not checked	✗
Not available	—

# CallGraph



# Source Units in Scope

## v1.0

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/Lambottery.sol	10	7	1283	1039	767	80	789	
	contracts/LotteryTracker.sol	4	2	367	341	234	33	205	
	contracts/LotteryWeeklyTracker.sol	3	2	230	212	141	29	122	
	<b>Totals</b>	<b>17</b>	<b>11</b>	<b>1880</b>	<b>1592</b>	<b>1142</b>	<b>142</b>	<b>1116</b>	

### Legend

Attribute	Description
Lines	total lines of the source unit
nLines	normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
nSLOC	normalized source lines of code (only source-code lines; no comments, no blank lines)
Comment Lines	lines containing single or block comments
Complexity Score	a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces, ...)

# Audit Results

## AUDIT PASSED

### Critical issues

- no critical issues found -

### High issues

- no high issues found -

### Medium issues

- no medium issues found -

### Low issues

Issue	File	Type	Line	Description
#1	Lambottery	Contract doesn't import npm packages from source (like OpenZeppelin etc.)	-	We recommend to import all packages from npm directly without flatten the contract. Functions could be modified or can be susceptible to vulnerabilities
#2	Lambottery	State variable visibility is not set	411, 589, 722, 724, 736, 959, 961, 962, 964, 981	It is best practice to set the visibility of state variables explicitly
#3	LambotteryWeeklyTracker	State variable visibility is not set	116	It is best practice to set the visibility of state variables explicitly
#4	LambotteryTracker	A floating pragma is set	3	The current pragma Solidity directive is ""^0.8.0""

#5	LambotteryTracker	State variable visibility is not set	162	It is best practice to set the visibility of state variables explicitly
#6	Lambottery	Missing Zero Address Validation (missing-zero-check)	1270, 444	Check that the address is not zero
#7	-	Contract's name reused (name-reused)	<ul style="list-style-type: none"> <li>• LotteryTracker.sol:43-51</li> <li>• Lambottery.sol#67-75</li> <li>• LotteryWeeklyTracker.sol#15-23</li> <li>• Lambottery.sol#67-75</li> </ul>	Context is re-used
#8	-	Contract's name reused (name-reused)	<ul style="list-style-type: none"> <li>• LotteryTracker.sol:27-40</li> <li>• Lambottery.sol#51-64</li> <li>• LotteryWeeklyTracker.sol#26-39</li> <li>• Lambottery.sol#51-64</li> </ul>	IBEP20 is re-used
#9	-	Contract's name reused (name-reused)	<ul style="list-style-type: none"> <li>• LotteryTracker.sol:54-107</li> <li>• Lambottery.sol#78-130</li> <li>• LotteryWeeklyTracker.sol#40-92</li> <li>• Lambottery.sol#78-130</li> </ul>	Ownable is re-used

## Informational issues

Issue	File	Type	Line	Description
#1	LotteryTracker	Unimplemented functions (unimplemented-functions)		<ul style="list-style-type: none"> <li>- LotteryTracker does not implement functions: <ul style="list-style-type: none"> <li>• ILotteryTracker.getAccountBalance(address)</li> <li>• ILotteryTracker.getNextDrawTime()</li> <li>• LotteryTracker.getRewardToken()</li> <li>• ILotteryTracker.getWinner(address)</li> <li>• ILotteryTracker.isActiveAccount(address)</li> <li>• ILotteryTracker.process(uint256)</li> <li>• ILotteryTracker.removeAccount(address)</li> <li>• ILotteryTracker.setDrawThresholdInBUSD(uint256)</li> <li>• ILotteryTracker.setNextDrawTime(uint256)</li> <li>• ILotteryTracker.updateAccount(address,uint256)</li> </ul> </li> </ul>
#2	LotteryWeeklyTracker	Unimplemented functions (unimplemented-functions)		<ul style="list-style-type: none"> <li>- LotteryWeeklyTracker does not implement functions: <ul style="list-style-type: none"> <li>• ILotteryWeeklyTracker.isActiveAccount(address)</li> <li>• ILotteryWeeklyTracker.removeAccount(address)</li> <li>• ILotteryWeeklyTracker.updateAccount(address,uint256)</li> </ul> </li> </ul>
#3	LotteryTracker	Functions that are not used (dead-code)	126-131	Remove unused functions.



## Commented Code exist

There are some instances of code being commented out in the following files that should be removed:

File	Line	Comment
Lambottery	997	// initDEXRouter(0x10ED43C718714eb63d5aA57B78B54704E256024E);
Lambottery	998	// initDEXRouter(0xD99D1c33F9fC3444f8101754aBC46c52416550D1); // testnet
Lambottery	999	//0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D ropsten
Lambottery	176	// assert(a == b * c + a % b);
Lambottery	739	// address Token = 0xe9e7CEA3DedcA5984780Bafc599bD69ADd087D56; // BUSD by default
Lambottery	740	// address Token = 0xd5FE979baBe312f5D344a2b4a51e0Ddd8457DD1E;
Lambottery	743	// hourly = new LotteryTracker(Token, 1 minutes);
Lambottery	745	// daily = new LotteryTracker(Token, 5 minutes);
Lambottery	755	// _isExcludedFromLottery[owner()] = true; todo

## Recommendation

Remove the commented code, or address them properly.

## SWC Attacks

ID	Title	Relationships	Status
<a href="#">SW C-13 6</a>	Unencrypted Private Data On-Chain	<a href="#">CWE-767: Access to Critical Private Variable via Public Method</a>	PASSED
<a href="#">SW C-13 5</a>	Code With No Effects	<a href="#">CWE-1164: Irrelevant Code</a>	PASSED
<a href="#">SW C-13 4</a>	Message call with hardcoded gas amount	<a href="#">CWE-655: Improper Initialization</a>	PASSED
<a href="#">SW C-13 3</a>	Hash Collisions With Multiple Variable Length Arguments	<a href="#">CWE-294: Authentication Bypass by Capture-replay</a>	PASSED
<a href="#">SW C-13 2</a>	Unexpected Ether balance	<a href="#">CWE-667: Improper Locking</a>	PASSED
<a href="#">SW C-13 1</a>	Presence of unused variables	<a href="#">CWE-1164: Irrelevant Code</a>	PASSED
<a href="#">SW C-13 0</a>	Right-To-Left-Override control character (U+202E)	<a href="#">CWE-451: User Interface (UI) Misrepresentation of Critical Information</a>	PASSED
<a href="#">SW C-12 9</a>	Typographical Error	<a href="#">CWE-480: Use of Incorrect Operator</a>	PASSED
<a href="#">SW C-12 8</a>	DoS With Block Gas Limit	<a href="#">CWE-400: Uncontrolled Resource Consumption</a>	PASSED

<a href="#">SW C-12 7</a>	Arbitrary Jump with Function Type Variable	<a href="#">CWE-695: Use of Low-Level Functionality</a>	<b>PASSED</b>
<a href="#">SW C-12 5</a>	Incorrect Inheritance Order	<a href="#">CWE-696: Incorrect Behavior Order</a>	<b>PASSED</b>
<a href="#">SW C-12 4</a>	Write to Arbitrary Storage Location	<a href="#">CWE-123: Write-what-where Condition</a>	<b>PASSED</b>
<a href="#">SW C-12 3</a>	Requirement Violation	<a href="#">CWE-573: Improper Following of Specification by Caller</a>	<b>PASSED</b>
<a href="#">SW C-12 2</a>	Lack of Proper Signature Verification	<a href="#">CWE-345: Insufficient Verification of Data Authenticity</a>	<b>PASSED</b>
<a href="#">SW C-12 1</a>	Missing Protection against Signature Replay Attacks	<a href="#">CWE-347: Improper Verification of Cryptographic Signature</a>	<b>PASSED</b>
<a href="#">SW C-12 0</a>	Weak Sources of Randomness from Chain Attributes	<a href="#">CWE-330: Use of Insufficiently Random Values</a>	<b>PASSED</b>
<a href="#">SW C-11 9</a>	Shadowing State Variables	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	<b>PASSED</b>
<a href="#">SW C-11 8</a>	Incorrect Constructor Name	<a href="#">CWE-665: Improper Initialization</a>	<b>PASSED</b>
<a href="#">SW C-11 7</a>	Signature Malleability	<a href="#">CWE-347: Improper Verification of Cryptographic Signature</a>	<b>PASSED</b>

<a href="#">SW C-11 6</a>	Timestamp Dependence	<a href="#">CWE-829: Inclusion of Functionality from Untrusted Control Sphere</a>	PASSED
<a href="#">SW C-11 5</a>	Authorization through tx.origin	<a href="#">CWE-477: Use of Obsolete Function</a>	PASSED
<a href="#">SW C-11 4</a>	Transaction Order Dependence	<a href="#">CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')</a>	PASSED
<a href="#">SW C-11 3</a>	DoS with Failed Call	<a href="#">CWE-703: Improper Check or Handling of Exceptional Conditions</a>	PASSED
<a href="#">SW C-11 2</a>	Delegatecall to Untrusted Callee	<a href="#">CWE-829: Inclusion of Functionality from Untrusted Control Sphere</a>	PASSED
<a href="#">SW C-111</a>	Use of Deprecated Solidity Functions	<a href="#">CWE-477: Use of Obsolete Function</a>	PASSED
<a href="#">SW C-11 0</a>	Assert Violation	<a href="#">CWE-670: Always-Incorrect Control Flow Implementation</a>	PASSED
<a href="#">SW C-10 9</a>	Uninitialized Storage Pointer	<a href="#">CWE-824: Access of Uninitialized Pointer</a>	PASSED
<a href="#">SW C-10 8</a>	State Variable Default Visibility	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	NOT PASSED
<a href="#">SW C-10 7</a>	Reentrancy	<a href="#">CWE-841: Improper Enforcement of Behavioral Workflow</a>	PASSED
<a href="#">SW C-10 6</a>	Unprotected SELFDESTRUCT Instruction	<a href="#">CWE-284: Improper Access Control</a>	PASSED

<a href="#">SW C-10 5</a>	Unprotected Ether Withdrawal	<a href="#">CWE-284: Improper Access Control</a>	PASSED
<a href="#">SW C-10 4</a>	Unchecked Call Return Value	<a href="#">CWE-252: Unchecked Return Value</a>	PASSED
<a href="#">SW C-10 3</a>	Floating Pragma	<a href="#">CWE-664: Improper Control of a Resource Through its Lifetime</a>	NOT PASSED
<a href="#">SW C-10 2</a>	Outdated Compiler Version	<a href="#">CWE-937: Using Components with Known Vulnerabilities</a>	PASSED
<a href="#">SW C-10 1</a>	Integer Overflow and Underflow	<a href="#">CWE-682: Incorrect Calculation</a>	PASSED
<a href="#">SW C-10 0</a>	Function Default Visibility	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	PASSED

The logo features the words "Solid Proofed" in a white, elegant script font. The word "Solid" is positioned above "Proofed". Behind the text is a faint, stylized shield emblem with a grid pattern, set against a solid blue background.

Solid  
Proofed

**Blockchain Security | Smart Contract Audits | KYC**

A small horizontal bar representing the German flag, with black, red, and gold stripes.

MADE IN GERMANY