FAIRPLAYEASY

SMART CONTRACT AUDIT REPORT

Prepared by:

BlockAudit

Date Of Enrollment:

August 10th, 2022 - August 16th, 2022

Visit : www.blockaudit.report

TABLE OF CONTENTS

SUMMARY

This Audit Report mainly focuses on the extensive security of **FAIRPLAYEASY** Smart Contracts. With this report, we attempt to ensure the reliability and correctness of the smart contract by complete and rigorous assessment of the system's architecture and the smart contract codebase.

The auditing process pays special attention to the following considerations:

- Testing the smart contracts against both common and uncommon attack vectors.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Ensuring contract logic meets the specifications and intentions of the client.
- Cross referencing contract structure and implementation against similar smart contracts producedby industry leaders.
- Thorough line-by-line manual review of the entire codebase by industry experts.

The security assessment resulted in findings that ranged from critical to informational. We recommend addressing these findings to ensure a high level of security standards and industry practices. We suggest recommendations that could better serve the project from the security perspective:

- Enhance general coding practices for better structures of source codes;
- Add enough unit tests to cover the possible use cases;
- Provide more comments per each function for readability, especially contracts that are verified inpublic;
- Provide more transparency on privileged activities once the protocol is live.

OVERVIEW

Project Summary

Project Name	FAIRPLAYEASY
Logo	
Platform	BSC
Language	Solidity
Code Link	https://bscscan.com/address/0xb56701aA385396118CAF34890345cb8eCb88AF81#code

File Summary

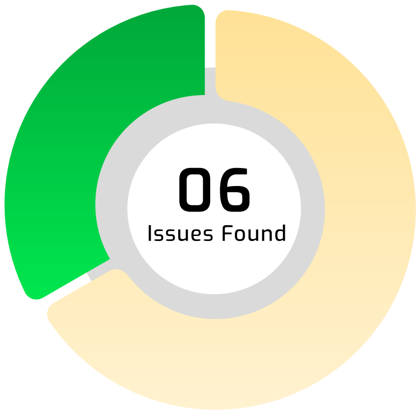
ID	File Name	Audit Status
FPE	FairPlayEasy.sol	Pass
FPE	IBEP20.sol	Pass

Audit Summary

Date of Delivery	16 Aug 2022
Audit Methodology	Code Analysis. Automatic Assesment, Manual Review
Audit Result	Passed
Audit Team	BlockAudit Report Team

FINDINGS

Critical	0	0.0%
High	0	0.0%
Medium	0	0.0%
Low	4	67.0%
Informational	0	0.0%
Ownership	0	0.0%
Gas Optimization	2	33.0%



Vulnerability Findings Summary

ID	Type	Line	Severity	Status
FPE01	Missing Checks For Address(0) When Assigning Values To Address State Variables	1	Low	Reported
FPE02	require() / revert() statements should have descriptive reason strings	1	Low	Reported
FPE03	Event is missing indexed fields	4	Low	Reported
FPE04	Unsafe ERC20 operation(s)	6	Low	Reported
FPE05	++i costs less gas than i++, especially when it's used in for-loops (--i/i-- too)	20	Gas Optimization	Reported
FPE06	Use != 0 instead of > 0 for unsigned integer comparison	1	Gas Optimization	Reported

FPE01

Type	Missing checks for address(0) when assigning values to address state variables
Severity	Low
File	FairPlayEasy.sol
Line	1
Status	**Reported**

Description

Missing checks for address(0) when assigning values to address state variables

Remediation

Check that the address is not zero.

Snapshot

```
File: FairPlayEasy.sol
82:        owner = owner_;
}
```

FPE02

Type	Floating Pragma
Severity	Low
File	FairPlayEasy.sol
Line	1
Status	**Reported**

Description

require() / revert() statements should have descriptive reason strings

Snapshot

```
File: FairPlayEasy.sol

80:         require(busdAddress != address(0x0));
```

FPE03

Type	Event is missing indexed fields
Severity	Low
File	FairPlayEasy.sol
Line	4
Status	**Reported**

Description

Index event fields make the field more quickly accessible to off-chain tools that parse events. However, note that each index field costs extra gas during emission, so it's not necessarily best to index the maximum allowed per event (three fields). Each event should use three indexed fields if there are three or more fields, and gas usage is not particularly of concern for the events in question. If there are fewer than three fields, all of the fields should be indexed.

Snapshot

```
File: FairPlayEasy.sol
64:     event tableClosed(
72:     event newParticipant(
```

```
File: IBEP20.sol
94:     event Transfer(address indexed from, address indexed to, uint256 value);
100:     event Approval(
```

FPE04

Type	Unsafe ERC20 operation(s)
Severity	Low
File	FairPlayEasy.sol
Line	6
Status	**Reported**

Description

Unsafe ERC20 operation(s)

Snapshot

```
File: FairPlayEasy.sol
134:                token.transferFrom(
170:                token.transferFrom(
179:                token.transferFrom(
291:                token.transferFrom(
393:        token.transferFrom(
406:        token.transferFrom(
```

FPE05

Type	++i costs less gas than i++, especially when it's used in for-loops (--i/i-- too)
Severity	Gas Optimization
File	FairPlayEasy.sol
Line	20
Status	**Reported**

Description

++i costs less gas than i++, especially when it's used in for-loops (--i/i-- too). Saves 5 gas per loop.

Snapshot

```
File: FairPlayEasy.sol
108:        usersAmount++;
120:        for (uint256 i = 1; i <= levlToAmount[1] + 1; i++) {
122:                levlToAmount[1]++;
150:                levlToIdToTable[1][i].userCount++;
190:                for (uint256 l = 1; l < 16; l++) {
206:                        for (uint256 j = 1; j < 15; j++) {
266:            i++
272:                levlToAmount[adrToInfo[msg.sender].level]++;
305:                levlToIdToTable[adrToInfo[msg.sender].level][i].userCount++;
331:                for (uint256 l = 1; l < 16; l++) {
347:                        for (uint256 j = 1; j < 15; j++) {
430:        for (uint256 i = 1; i < 7; i++) {
436:                count++;
448:        curTabId[adrToInfo[msg.sender].level]++;
449:        for (uint256 i = 1; i < 11; i++) {
463:                for (uint256 j = 1; j < 10; j++) {
573:        for (uint256 i = 1; i < 7; i++) {
578:            levlToAmount[adrToInfo[msg.sender].level]++;
726:        for (uint256 i = 1; i < 11; i++) {
734:        for (uint256 i = 1; i < 16; i++) {
```

FPE06

Type	Use != 0 instead of > 0 for unsigned integer comparison
Severity	Gas Optimization
File	FairPlayEasy.sol
Line	1
Status	**Reported**

Description

Use != 0 instead of > 0 for unsigned integer comparison.

Snapshot

```
File: FairPlayEasy.sol

682:        require(id > 0 && id < 11, "Not right number");
```

APPENDIX

Auditing Approach and Methodologies applied

The Block Audit Report team has performed rigorous testing of the project including the analysis of the code design patterns where we reviewed the smart contract architecture to ensure it is structured along with the safe use of standard inherited contracts and libraries. Our team also conducted a formal line by line inspection of the Smart Contract i.e., a manual review, to find potential issues including but not limited to

- Race conditions
- Zero race conditions approval attacks
- Re-entrancy
- Transaction-ordering dependence
- Timestamp dependence
- Check-effects-interaction pattern (optimistic accounting)
- Decentralized denial-of-service attacks
- Secure ether transfer pattern
- Guard check pattern
- Fail-safe mode
- Gas-limits and infinite loops
- Call Stack depth

In the Unit testing Phase, we coded/conducted custom unit tests written against each function in the contract to verify the claimed functionality from our client. In Automated Testing, we tested the Smart Contract with our standard set of multifunctional tools to identify vulnerabilities and security flaws. The code was tested in collaboration of our multiple team members and this included but not limited to;

- Testing the functionality of the Smart Contract to determine proper logic has been followed throughout the whole process.
- Analyzing the complexity of the code in depth and in detail line-by-line manual review of the code.
- Deploying the code on testnet using multiple clients to run live tests.
- Analyzing failure preparations to check how the Smart Contract performs in case of any bugs and vulnerabilities.
- Checking whether all the libraries used in the code are on the latest version.
- Analyzing the security of the on-chain data.

Issue Categories:

Every issue in this report was assigned a severity level from the following:

Critical Severity Issues

Issues of Critical Severity leaves smart contracts vulnerable to major exploits and can lead to asset loss and data loss. These can have significant impact on the functionality/performance of the smart contract.

We recommend these issues must be fixed before proceeding to MainNet..

High Severity Issues

Issues of High Severity are not as easy to exploit but they might endanger the execution of the smart contract and potentially create crucial problems.

Fixing these issues is highly recommended before proceeding to MainNet.

Medium Severity Issues

Issues on this level are not a major cause of vulnerability to the smart contract, they cannot lead to data-manipulations or asset loss but may affect funtionality.

It is important to fix these issues before proceeding to MainNet.

Low Severity Issues

Issues at this level are very low in their impact on the overall functionality and execution of the smart contract. These are mostly code-level violations or improper formatting.

These issues can be remain unfixed or can be fixed at a later date if the code is redeployed or forked.

Informational Findings

These are finding that our team comes accross when manually reviewing a smart contract which are important to know for the owners as well as users of a contract.

These issues must be acknowledged by the owners before we publish our report.

Ownership Priviledges

Owner of a smart contract can include certain rights and priviledges while deploying a smart contract that might be hidden deep inside the codebase and may make the project vulnerable to rug-pulls or other types of scams.

We at BlockAudit believe in transparency and hence we showcase Ownership priviledges separately so the owner as well as the investors can get a better understanding about the project.

Gas Optimization

Solidity gas optimization is the process of lowering the cost of operating your Solidity smart code. The term "gas" refers to the level of processing power required to perform specific tasks on the Ethereum network.

Each Ethereum transaction costs a fee since it requires the use of computer resources. It will deduct a fee anytime any function in the smart contract is invoked by the contract's owner or users.

DISCLAIMER

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for the client to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that the client should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for the client to conduct the client's own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the received smart contracts alone. No related/third-party smart contracts, applications or operations were reviewed for security. No product code has been reviewed.

Note: The statements made in this document should not be interpreted as investment or legal advice, nor should its authors be held accountable for decisions made based on them. Securing smart contracts is a multistep process. One audit cannot be considered enough. We recommend that the **FAIRPLAYEASY** team put a bug bounty program in place to encourage further analysis of the smart contracts by other third parties

About BlockAudit

BlockAudit is an industry leading security organisation that helps web3 blockchain based projects with their security and correctness of their smart-contracts. With years of experience we have a dedicated team that is capable of performing audits in a wide variety of languages including HTML, PHP, JS, Node, React, Native, Solidity, Rust and other Web3 frameworks for DApps, DeFi, GameFi and Metaverse platforms.

With a mission to make web3 a safe and secure place BlockAudit is commited to provide it's partners with a budget and investor friendly security Audit Report that will increase the value of their projects significantly.

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