CheersLand - Audit Report

SUMMARY

CheersLand is building a platform where users can purchase lives by staking tokens or ETH.

We audited CheersLand's Game contract using code provided to us by the project team.

Overview of the Contract:

- *A user can purchase any amount of lives using ETH or any token that is accepted by the platform.*
- *On purchasing lives, an amount in the chosen payment token proportional to the amount of lives purchased is staked in the platform.*
- *The user will be able to withdraw the staked amount 24 hours after the order is created.*
- *A user can add at most one address as a parent address, which will grant the user and the parent one extra life; the user can only set a parent one time.*
- *A user can only be a parent for at most 5 users.*
- *The owner is able to set the limit for the amount of addresses that a user can be a parent for to any value at any time.*
- *The owner is able to remove a life from any user at any time, as long as the user has more than -2 lives.*
- *The owner is able to add any token for payment as well as set the fee amount for each token at any time.*
- *The platform should not be used with ERC-777 tokens to prevent re-entrancy issues. This is uncommon.*
- *Further, the platform should not be used with deflationary tokens. If a deflationary token is added as a staking asset, then the contract must be exempt from transfer fees.*

- *The team worked with us to optimize this contract for gas efficiency.*
- *As the contract is implemented with Solidity v0.8.x, it is protected from overflows.*

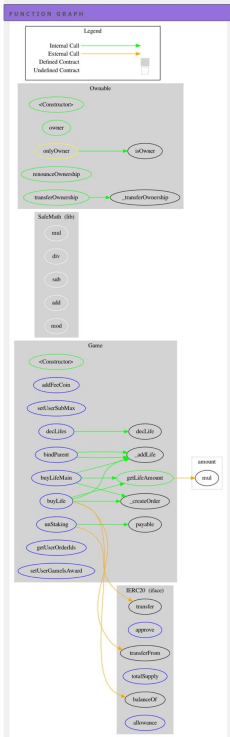
Audit Findings Summary

- *No security issues from outside attackers were identified.*
- *Ensure trust in the team as they have substantial control in the ecosystem.*
- *Date: August 5th, 2021*

EXTERNAL THREAT RESULTS

Vulnerability Category	Notes	Result
Arbitrary Storage Write	N/A	PASS
Arbitrary Jump	N/A	PASS
Delegate Call to Untrusted Contract	N/A	PASS
Dependence on Predictable Variables	N/A	PASS
Deprecated Opcodes	N/A	PASS
Ether Thief	N/A	PASS
Exceptions	N/A	PASS
External Calls	N/A	PASS
Flash Loans	N/A	PASS
Integer Over/Underflow	N/A	PASS
Multiple Sends	N/A	PASS
Oracles	N/A	PASS
Suicide	N/A	PASS
State Change External Calls	N/A	PASS
Unchecked Retval	N/A	PASS
User Supplied Assertion	N/A	PASS
Critical Solidity Compiler	N/A	PASS
Overall Contract Safety		PASS

FUNCTION GRAPH



INHERITENCE CHART

FUNCTIONS OVERVIEW

```
($) = payable function
# = non-constant function

+ [Int] IERC20
  - [Ext] transfer #
  - [Ext] approve #
  - [Ext] transferFrom #
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] allowance

+ [Lib] SafeMath
  - [Int] mul
  - [Int] div
  - [Int] sub
  - [Int] add
  - [Int] mod

+  Ownable
  - [Pub]  #
  - [Pub] owner
  - [Pub] isOwner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
  - [Int] _transferOwnership #

+  Game (Ownable)
  - [Pub]  #
  - [Prv] _createOrder #
  - [Ext] addFeeCoin #
    - modifiers: onlyOwner
  - [Ext] setUserSubMax #
    - modifiers: onlyOwner
  - [Prv] _addLife #
  - [Pub] decLife #
    - modifiers: onlyOwner
  - [Ext] decLifes #
    - modifiers: onlyOwner
  - [Ext] bindParent #
  - [Pub] getLifeAmount
  - [Ext] buyLife #
  - [Ext] buyLifeMain (!)
  - [Ext] unStaking #
  - [Ext] getUserOrderIds
  - [Ext] setUserGameIsAward #
    - modifiers: onlyOwner
```

GO HOME

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