



# Protocol Audit Report

Version 1.0

*Tura11*

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## Table of Contents

- Table of Contents
- Protocol Summary
- Disclaimer
- Risk Classification
- Audit Details
  - Scope
  - Roles
- Executive Summary
  - Issues found'
- Findings
- Critical
  - [C-1] Reentrancy allow entrant to drain raffle balance
- High
  - [H-1] Denial of Service
  - [H-2] TITLE Weak RNG allow user to influence or predict the winner
- Medium
- Low

- [L-1] Old version of solidity allows overflow and underflow numbers.
- [L-2] `PuppyRaffle::getActivePlayerIndex` returns 0 for non-existent players and for players at index 0, causing a player at index 0 to incorrectly thin they have not entered the raffle
- Informational
  - [I-1] Missing zero address check in constructor
  - [I-2] Missing emit the events
  - [I-3] Dead code
- Gas
  - [G-1] Unchanged state variables should be constant or immutable.
  - [G-2] Storage variables in loops should be cached

## Protocol Summary

1. Call the `enterRaffle` function with the following parameters:
  1. `address[] participants`: A list of addresses that enter. You can use this to enter yourself multiple times, or yourself and a group of your friends.
  2. Duplicate addresses are not allowed
  3. Users are allowed to get a refund of their ticket & `value` if they call the `refund` function
  4. Every X seconds, the raffle will be able to draw a winner and be minted a random puppy
  5. The owner of the protocol will set a `feeAddress` to take a cut of the `value`, and the rest of the funds will be sent to the winner of the puppy.
- Puppy Raffle
- Getting Started
  - Requirements
  - Quickstart
    - \* Optional Gitpod
- Usage
  - Testing
    - \* Test Coverage
- Audit Scope Details

- Compatibilities
- Roles
- Known Issues

## Disclaimer

The Tura11 team makes all effort to find as many vulnerabilities in the code in the given time period, but holds no responsibilities for the findings provided in this document. A security audit by the team is not an endorsement of the underlying business or product. The audit was time-boxed and the review of the code was solely on the security aspects of the Solidity implementation of the contracts.

## Risk Classification

		Impact		
		High	Medium	Low
		H	H/M	M
Likelihood	Medium	H/M	M	M/L
	Low	M	M/L	L

We use the CodeHawks severity matrix to determine severity. See the documentation for more details.

## Audit Details

- Commit Hash: 2a47715b30cf11ca82db148704e67652ad679cd8
- In Scope:

## Scope

```
1 ./src/ PuppyRaffle.sol
```

## Roles

Owner - Deployer of the protocol, has the power to change the wallet address to which fees are sent through the `changeFeeAddress` function. Player - Participant of the raffle, has the power to enter the raffle with the `enterRaffle` function and refund value through `refund` function.

## Executive Summary

Ive learnt a lot from this audit, process was pretty easliy and fast. ## Issues found'

Severity	Number of issues found
Critical	1
High	2
Medium	0
Low	2
Info	3
Gas	2
Total	10

## Findings

### Critical

**[C-1] Reentrancy allow entrant to drain raffle balance**

### High

**[H-1] Denial of Service**

**[H-2] TITLE Weak RNG allow user to influence or predict the winner**

### Medium

### Low

**[L-1] Old version of solidity allows overflow and underflow numbers.**

**[L-2] PuppyRaffle::getActivePlayerIndex returns 0 for non-existent players and for players at index 0, causing a player at index 0 to incorrectly think they have not entered the raffle**

### Informational

**[I-1] Missing zero address check in constructor**

**[I-2] Missing emit the events**

**[I-3] Dead code**

### Gas

**[G-1] Unchanged state variables should be constant or immutable.**

**[G-2] Storage variables in loops should be cached**