Aqua Ascension

A puzzle/challenge-based battle royal with a wet twist.

Ben Bertoni, Curtis Squire, Kyle Hoi-Ming Leung & Juriel Garcia S

# Purpose

A puzzle-based battle royal game, where the player ascends a flooding tower. The first team/player that accends wins. Players can gain a variety of abilities, such as healing or shielding the team and/or freezing/slowing opponents. They gain these abilities from the multiple challenges/puzzles on each N amount of floor, discovering more secrets as they scale the tower.

# Engine

The engine we will be using is Unity.

# Plugin Integration

The only option/use case that we see in the immediate future for native plugins are the purposes of algorithm optimization. With possible subsystems, (Networking / Physics/ AI) written as a native plugin. Additionally, there is the possibility of including external C/C++ libraries when there are no bindings for it in C#.

# Networking

Online multiplayer with up to 4 players per group, with a maximum lobby size of 32 people. (Most likely using a library/API that solves this problem.)

# AI

We will be required to make some AI that goes hand in hand with puzzels, such as a puzzle generator/director, to create procedural puzzles/challenges. Additionally with AI Actors engaging with the player actively & passively. Algorithms focussing on flocking, steering, obstacle detection, fuzzy state machines, and decision making.

# Physics

We will be using/making physics involved with player movement, and simple collisions with the environment. Additionally, we will be simulating water physics as well as making players float in water using a buoyancy algorithm. Perhaps with even more complex fluid simulation such as simulating laminar flow, etc.

# Game Mechanics

## Rules & Conditions

Players can move using WASD, jump, and anything else that are defined by the gamemodes, abilities, and weapon modifications. Players should disolve (kill) enemies. Enemies that are dissolved drop all their abilities and weapon mods. Players also cant hold more than **4** weapon & ability types.

## Gamemodes

1. Match.
2. Race.
3. Battle Royal.

***\*Note\*: Any additional gamemodes will be added in the future.***

* 4 v 4 – Plant the bomb.
* 4 v 4 – 2 Capture Point.
* 6 v 6 – Plant the bomb.
* 6 v 6 – 2 Capture Point.

## Match

All Players face each other in a level, the player with the most dissolves (kills) wins.

### Player Progression

Endless, there are some puzzles and challenges and bots that players can face in order to get abilities.

## Race

All players race up the tower as quickly as possible. Solving puzzles and challenges as quickly as possible, slowing other players down when they come across them.

### Player Progression

Continuous, until level 100, player progress through solving puzzles and challenges.

## Battle Royal

Players must defeat their enemies as they climb the tower, last person standing wins. Solving puzzles & completeing challenges unlocks different types of weapons and abilities. The tower is slowly sinking so any players still in the lower levels take water damage until they are dissolved.

### Player Progression

Continuous, until level 100, players progress through stairs, elevators, jump pads.

#### Level 0 – Starting Level

At the start of the game the player is starts at the base of the tower, they must shoot a target at the beginning to enter the tower. This can be instanced individually per team.\* Players get a water pistol when they start.

#### Level 1 – 10 – Equipment Levels (RNG)

Players are scattered throughout these levels in order to get a weapon.

#### Level 1 – 100 – Combat Levels

A lot of combat during the these levels of the game, where players encounter other players and they have a shoot out, and a good luck.

#### Level 1 – 100 – Puzzle And Challenges

Puzzles are scattered throughout these levels. Players find puzzles and challenges, solves them, gets a weapon or ability. Or just encounters other players and it turns in a watery mess.

#### Level 100 – The Roof

This is the last level. Players who get here start a count down timer to extraction. And must face other players as they come onto the roof, as the timer comes to a close, the highest player wins.

## Weapons & Abillities

The [**Insert Name Here**] is the only weapon that players have, however, there are different configurations and mods that define the shape, size, damage vs healing, and other modifications.

**Sky** – Think of a tiny squirter or a water pistol. Pew Pew. This is the Default.

**Azure** – Streams in a Tiny Laminar Flow.

**Lapis** – Streams in a Bigger Turbulent Flow.

**Navy** – Streams in a Line thats lasts in a short burst.

**Admiral** – Shoots a crystal that explodes in a watery way.

**Frost** – Shoots a steam/frost that slows down enemies.

**Snow** – Shoots a crystal that explodes into snow, that slows and damages over time.

**Arctic** – Shoots a shard of ice that does initial damage, slows over time, and does damage over time. Like a sniper.

**Cobolt** – Shoots "a water ballon launcher".

**Coral** – Shoots warm air that heals both enemies and players. Use with caution.