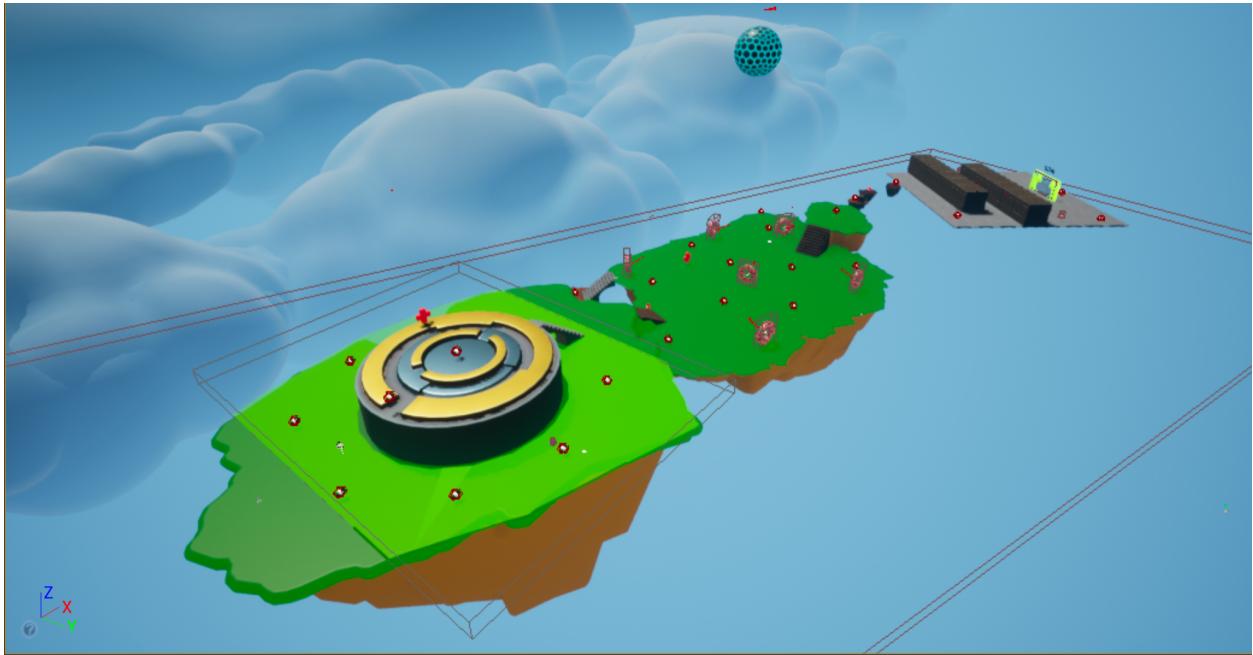


# CS 498 MP2 Design Documentation

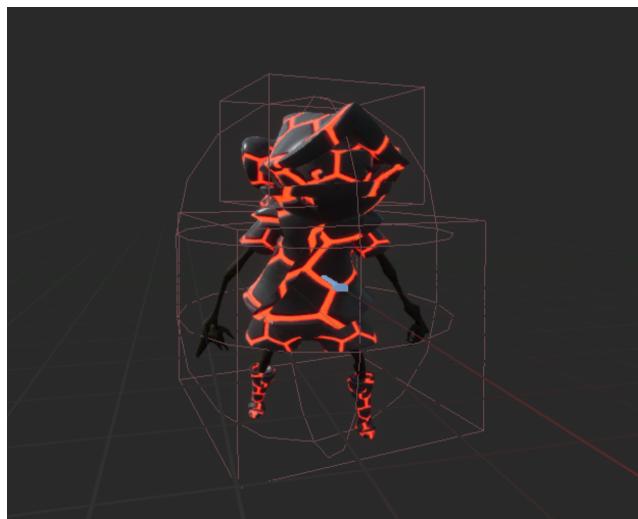


## 1. Overview

The level I created contains our 30 coin collectibles, 3 different enemy types (pursuer, flyer, mortar), consumable health packs, and a destination area. The player must collect all coins and reach the destination area without losing damage entirely. Taking too much damage or falling off the map will result in a respawn at the start position. This will reset the health, but the player's progress (coins/health packs collected) will remain the same.

## 2. Enemies

### a. Pursuer

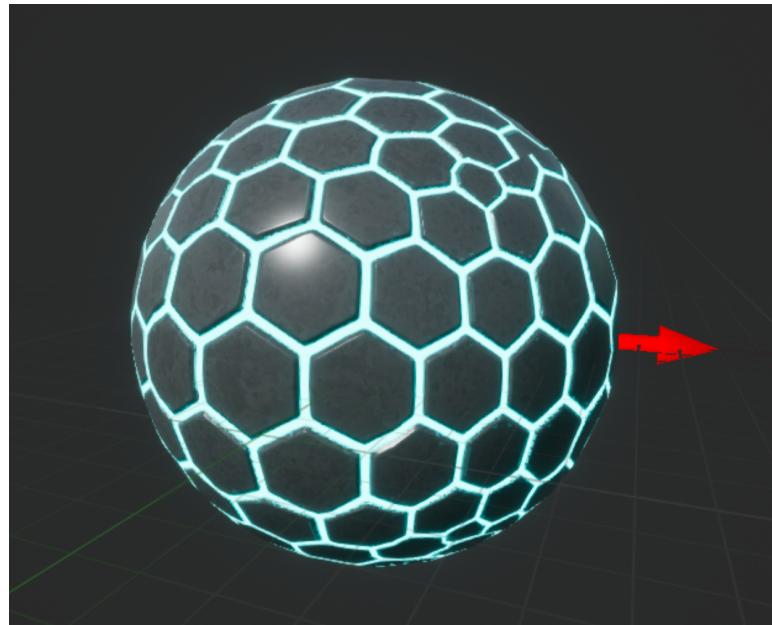


The Pursuer patrols a path that is pre-set, and if the player is within a certain distance and the Pursuer has sight of the player, it will chase us within the navigation bound. Once the player exits the navigation bound or the Pursuer loses sight of the player, it will return to the closest path of the patrol path it has. The Pursuer has two different collision boxes, each for a head portion that the player can utilize to eliminate the Pursuer or one which will trigger damage, knock the player back and immobilize movement for 2 seconds.

Within the map, the Pursuer is placed within an island that has a large obstacle in the middle (making it a donut shape), so that the player has no method to avoid the range of sight entirely.



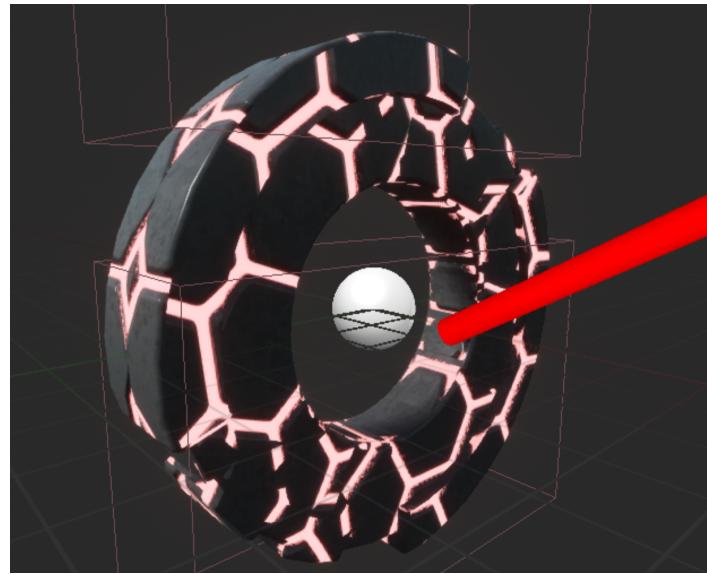
**b. Flyer**



The Flyer will be given several positions to move to, but every iteration it will move to a random spot within one of these pre-set positions. After moving, the Flyer will shoot a projectile based on the forward vector of the player and its current position to attempt to shoot where the player is currently moving towards. However, if the player has no velocity, the Flyer will just aim at the current player position. When hit the player will take damage.

The Flyer is placed above the player and has pre-set positions across the entire map, being a global enemy. Due to it being flying, the player has no method to eliminate it.

### c. Mortar



The Mortar cannot move from its position but can rotate and shoot cannon-like projectiles that have simulate physics. Every time the Mortar will shoot at a random direction, the projectile will cause an explosion that causes damage and knocks the player back. Furthermore, if the player collides with the Mortar itself they will take damage as well. The Mortar has an upper collision box so that the player can eliminate it by jumping over it, but this is not easy as the Mortar has some height.

There are several Mortars placed around a portion of the map, making it difficult for the player to freely roam and collect coins. The last part of the level has two small mortars that are smaller than the original ones but still have the same effect.

### 3. Extra Mechanic

Given how the game has a Pursuer and Flyer that tracks your position, I decided that the normal run and jump control would be difficult for the player when roaming around the map. Therefore I created a dash function that is triggered when pressing the C key while a direction key is pressed. This makes the player jump slightly and launches them forward. An additional feature is jumping and dashing. This makes the player move a significant distance, but given the map, it puts the player at risk of falling off easily, so this combination should be used with caution.

### 4. Additional Details

Simply traversing through the map makes the level too easy, therefore I put in the requirement that all coins must be collected to reach the destination location and complete the game. Some of these coins are hidden, adding in difficulty for the player as they have to fully

traverse the level and find these hidden spots. Health packs are scattered around each major part of the level so that the player has some room to recover before entering the next section.