Sprint 09 Report

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The goals set for sprint 09 were to finish the implementation of the artificially intelligent opponent; improve the visibility of the gameplay; and implement time dependent, random obstacles as well as time dependent, random goal segment effects.

We programmed the AI to be capable of tracking multiple balls within the arena. However, we have only tested the AI with one ball. The single ball implementation of the AI was a success. The AI relies on a queue of balls which is populated by a ball when it reaches a certain proximity to the AI paddle. From the perspective of the AI, the problem of tracking a ball does not involve the entirety of the queue’s contents – the AI is only concerned with what is at the front of the queue. Therefore, given its programming, the ability of the AI to track multiple balls should be no different than the ability of the AI to track a single ball. Looking forward, the challenge of implementing multiple balls will not involve the AI – it will involve the actual spawning, velocity, and termination of those extra balls.

To improve the visibility of the gameplay, we did not reposition the camera – we made the user’s paddle transparent. Now the user can clearly see the totality of the gameplay as well as their own paddle.

We have implemented time dependent, random obstacles using various 3D shapes which the ball may collide with. The implementation of these obstacles was simple. Obstacles are created at random times and at random positions within the arena. Then, after some random time (no longer than 30 seconds), obstacles are destroyed. To control the timing, creation, and destruction of these objects, we have included an intangible, static object which is the host of the script that actually performs those tasks. This object and its corresponding script will serve to control other effects as well.

We have implemented one time dependent, random goal segment effect: the disabling of a goal zone segment’s ability to consume the ball. The implementation of this effect was paralleled the implementation of the obstacles: random times determine when a goal zone segment is disabled and after some other random, but bounded time, that goal zone segment is reenabled. Furthermore, the control over the random times and the random choice of the goal zone segment is given to the aforementioned, intangible, static object which controls all additive gameplay effects.