Artifact two is one of the first projects I made in Unreal Engine during my time as a student at SNHU. The artifact is a simple game in which the player must push a ball onto a jump pad to launch the ball out of the area. It was created When I took GAM 207, near then end of 2017.

I chose this game because it was the first game that I chose to make. I had made a couple simple games before then as assignments in other classes, but this artifact was the first one where I decided how to gamify it. The core gameplay loop showcases a basic grasp of the Unreal Engine, including fundamentals such as casting and widgets. However, the more recent additions showcase more advanced engine knowledge. The objective marker and AI are particularly noteworthy because they are difficult features to figure out without instruction. The AI is the biggest stand out for me because it was only the second time that I had used a blackboard and decision tree. The first time I made an AI this way it was the most difficult thing I had ever made in Unreal, and I had the benefit of a tutorial for that first AI.

When I created this artifact, I learned some critically important aspects of the Unreal Engine. Knowing how to cast between classes is vital to making even the simplest games, and widgets are an incredibly versatile tool. In this artifact I used widgets to make a simple menu and a simple hud, but they can be used to build any dynamic 2D image which may be placed in the game world or on the screen. When I improved this artifact, I learned a couple handy techniques. I learned how to render an area of the level onto a widget or actor, I learned how to draw a widget on top of an actor when that actor is on screen.

However, I feel I learned the most from my work on the AI. In my previous attempt at making an AI in Unreal, I had taken a tutorial that showed how to make an advanced AI and tried to adapt it to suit my needs. Unfortunately, I barely understood how the blackboard and decision tree functioned at the time. So, my attempts at adapting the AI just broke it, and I kept banging my head against the wall until I had a functioning AI. This time around, I kept it as simple as possible. I did not give the AI perception, the AI does not look for the ball, the AI does not predict where the ball might be. The AI only has two behaviors, move to the ball and move towards the goal. Keeping it that simple helped for the concept to finally click for me. I feel confident that I could keep building on this AI iteratively and make something that would provide a genuine challenge.

I did not receive much feedback because I did not really seek any out, but what little I did get was invaluable. It had never crossed my mind to play with the visuals. I would have been perfectly content with the default light settings. There are many ways I could play with the aesthetics to improve the look and feel of the game, but I think the avenue that would yield the greatest improvement is sounds. I could add a rolling sound effect to the ball, I could add some background music, I could even make the velocity of the ball affect the tempo and/or pitch of the background music in a manner similar Super Mario Galaxy’s Rolling Green Galaxy level.