

Arkanoid 2D Extension Description Deliverable

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Game Design 4th Period

Overview:

In my 2D Arkanoid Unity Game Project, after following the basic tutorial of making a clone of the original Arkanoid game, I made many extensions branching off of the original tutorial that improve gameplay, aesthetics, satisfaction, and uniqueness through experimentation and research.

Extension 1 - Ball Reflection Script Revamp

One of my main extensions that I made to the game was the revamp of the whole reflection system of how the ball bounced and moved around in the game scene. There was a bug with the tutorial BallScript that would not follow the laws of reflection when the ball bounced off of surfaces, making it so the ball wouldn't reflect correctly. The original script calculated a random vector whenever the ball hit something to send toward instead of a vector following the law of reflection. I sought to remedy this bug, so I did some research in order to make the ball follow the laws of reflection where if it hit a surface at an angle, it should bounce off using the opposite same angle off the surface. I rewrote the BallScript to take the inDirection vector, the vector at the which the ball is going toward a surface of a GameObject, and inNormal vector, the vector that is perpendicular to the surface of an GameObject, in order to to get the resulting vector using the Reflect method. The Reflect method will reflect the inDirection vector across the inNormal vector away from the surface and become the new inDirection vector for whenever it approaches another GameObject.

Extension 2 - Start Menu Screen

Another of my main extensions that I made to the game was the addition of another scene and objects in order to make a Start Main Menu screen before the game scene where you play the game. In this separate scene, I made use of the Canvas in order to add text and UI elements with the title of the game, my name, and instructions on how to start the game. The game will transition to the game scene and start the actual game when any key is pressed on the keyboard or mouse. I made use of a script to get any key that is pressed in order

to load the game scene. There is also a background image with background music with many prefabs of balls of different sizes and colors bouncing around in the screen which is usually very satisfying to watch for many people. Everything is sorted by layers in order to increase visibility.