

Physics scripting project

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Bowling Alley top down

The scene will have a player able to move onto a booster arrow and be flung into objects mostly pins that the player can fling around

There will also be a spawn switch that can spawn more objects that the player can organize themselves to then crash into or push into other objects

Main Functionality

Player can move in the physics engine (Topdown 2d)

The booster will send a player crashing into the objects

A spawning switch that will create new objects the player can move around and then crash into

General Planning

All movement will be handled with the in engine physics engine with each object (Excluding booster and spawn point) having a Rigidbody2D

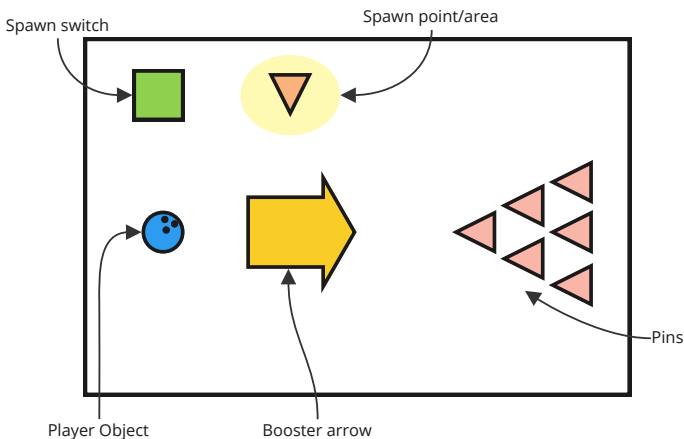
Players will move with AddForce with inputs being Input.GetAxis for x and y movement

Booster area will be set to trigger and an area affector with OnTriggerEnter2D handling the increased speed of the object that enters it

Pins will be light objects that can be moved and flung around as well as be prefabs to be able to create multiple while the scene is running

The spawn switch will be a simple static box that once collided with spawns another pin

Sketch of the scene:



Player movement

The player will need to identify its rigidbody within its script (Hardcode to avoid forgetting manual declaring)

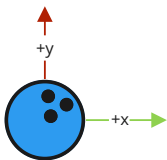
The player will need to have a variable that controls its direction: This will be a Vector to handle the two numbers within a contained variable

And a float variable to store the force that will be applied to the rigidBody so that it can move (the amount of force should be alterable as it is the players speed)

Each frame the computer should be checking for keyboard inputs for which direction the player wants to move the game object

To check for keyboard inputs is `Input.GetAxis("<axis>");`

This will be declared to the x and y of the vector controlling its direction in range of -1 and 1 values



The player should then move using the physics system in the direction they want

This can be done with `AddForce` applied to the rigidbody where an amount of force is added in the direction of the x and y vector for direction

The player will interact with the boxes using the in engine physics system requiring no scripting

Most of the other interactions the player will have with the game will be handled in the other game objects

The ball can spin as it moves with `MoveRotation`

Problem solving:

`MoveRotation` works but the direction is +/- dependant as well it will always rotate as it is in update with no trigger

Potential solution: have an if that checks if there is an input and which direction it will go

Actual solution: put direction.X in the `MoveRotation` statement and inverted the speed to rotate properly