2.5D Swing Controller

Thank you so much for purchasing this asset and supporting me!
I’m an engineering student trying to earn some extra income and you buying this is incredibly kind and helpful.

This Swing Controller asset was made by me in the fall of 2019 as part of a university course. I decided to share this mechanic since I noticed there isn’t any similar code/help out there for this type of game mechanic.

The swinging mechanic is used in an upcoming mobile game I'm developing and when I first started out, I spent a lot of time getting things right, and it's still a WIP but it does exactly what I want it to do. The code is always tweakable if it doesn't fit your game. It is physics-based, using rigidbodies, which means it will behave very similar to a pendulum.

I've commented the code as much as I can and I'm not guaranteeing that this is the most efficient way to do this, but it works for me. I've tried playing with SphereCast but it didn't work as well.

As I said before, I had a really hard time finding any online resources that mimicked the behaviour that I wanted. There were bits and pieces of similar game mechanics but nothing concrete. I ended up making it entirely by myself together with a modified algorithm that finds the closest tether point. There is also a simple player attached so that you can move around and jump.

How it works

There are two states, swinging and falling.
During falling (when player is not pressing anything and is not tethered) the Player gets continuously rotated towards its rigidbody's velocity direction. Every frame the FindClosestTetherPoint is running and moving the indicator so that the player knows which point it is going to be tethered to next.

When the player presses the left mouse button (or screen on mobile) and holds it several things happen each frame:

- The closest tether point is chosen
- The player rotates around the point (fixed) whilst swinging
- A raycast is shot towards the point
- The 'Anchor'-Gameobject is moved to the tether point gets a hinge joint
- At the same time, the Player also gets a hinge joint and both joints attach
- The line renderer draws a line between the player and the point

How to use it

The already-made prefabs have everything necessary to swing the player. If you want to, you can create more tether points and try to create more difficult swings. Do this by simply navigating to the Prefabs folder and dragging the prefab in. All tether points location should be locked to Z = 0 since the controller is locked to only swinging left/right on the XY-plane.

You are always free to use this mechanic and code in your own game. I'm just happy to share the code so that if you want, you're able to create a similar game. If you made a game using this code, please share it with me! I would be so happy to see what you've created!

Other

As I mentioned before, this mechanic is a part of a game I'm currently developing. If you want to check it out, click the link below.
Youtube-link to game trailer