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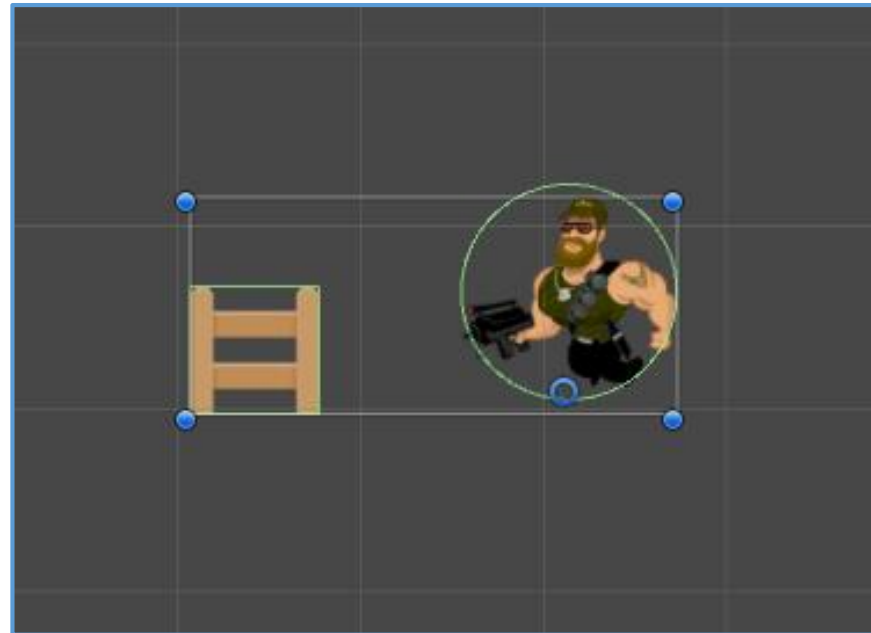
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WHAT'S DIFFERENT?

3D objects can still appear in a 2D Unity game. However, we are most likely going to be placing 2D objects into our scenes for a 2D game.

As such, we probably don't want to be putting sphere and box colliders on our objects, since those are strictly 3D things.

Fortunately, Unity provides plenty of 2D alternatives for all things Physics!



2D Physics

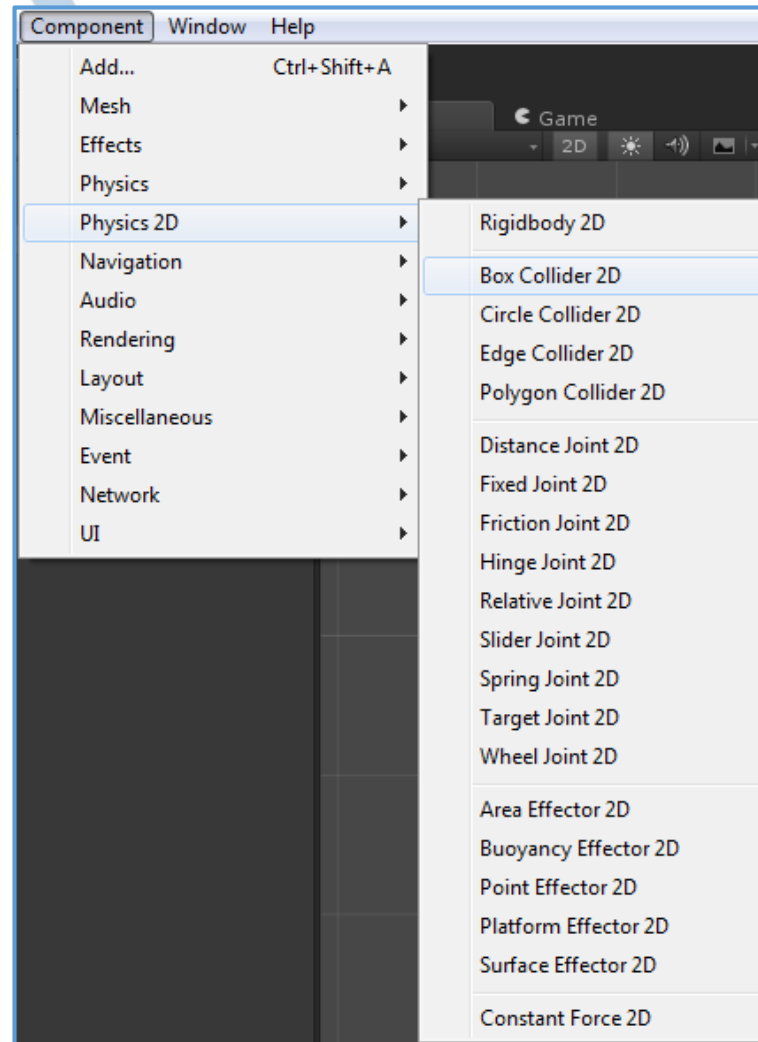
Boxes and Circles and Edges. Oh my!

COLLIDERS

The most fundamental 2D physics components that Unity provides are Colliders.

The common 3D colliders are: Box, Sphere, Capsule and Mesh. The common 2D colliders in Unity are: Box, Circle, Edge and Polygon.

Let's take a brief look at each of these.

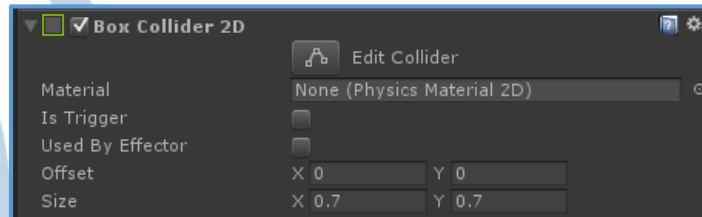


2D Physics

Boxes and Circles and Edges. Oh my!

BOX COLLIDER 2D

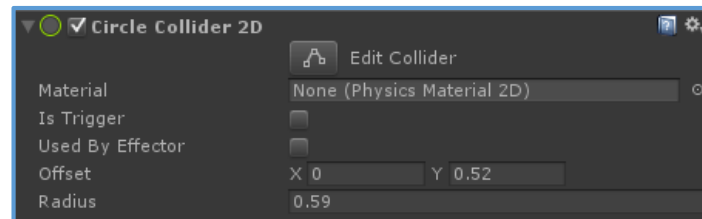
This differs from the 3D equivalent in that it doesn't have that third dimension. If you have a rectangular shape that you want objects to bump into, this is the collider for you!



CIRCLE COLLIDER 2D

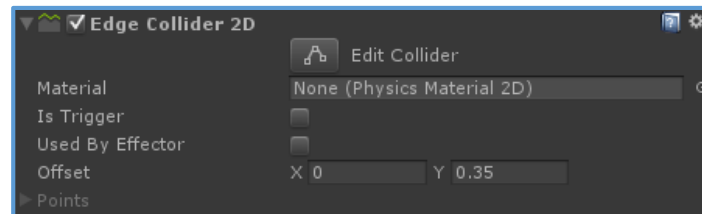
Circle colliders are shaped like a circle...

These are a useful shape for not just circular things, but anything that's roughly round. A rocky asteroid or a bullet could be usefully represented as a circle, depending on how accurate you'd like collisions to be.



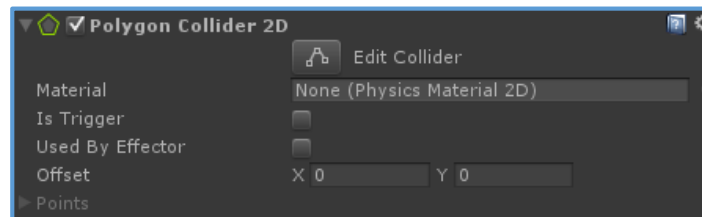
EDGE COLLIDER 2D

In 2D, we don't always need to say that an area of the screen is occupied. Sometimes, we just want to have a wall or a floor. We can achieve this in Unity by adding an Edge Collider. This will create a line that objects can't pass through. Simple. Effective.



POLYGON COLLIDER 2D

Sometimes, we really need as accurate a collider as possible. When we have the need, the Polygon Collider will give us precise control over what we can and cannot collide with. However, these should not be used everywhere.



2D Physics

Boxes and Circles and Edges. Oh my!

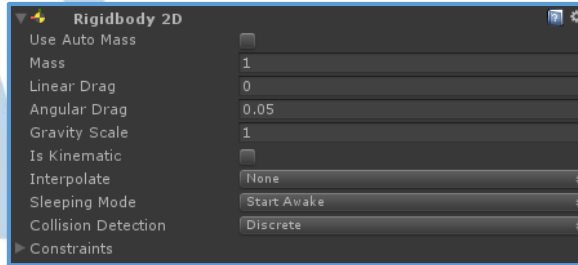


RIGIDBODY 2D

Just as Unity has a Rigidbody for 3D objects, there is also a Rigidbody for 2D objects. This behaves much the same as the 3D version, except you can also control how strong gravity will be for this object.

That's pretty neat!

If you want use this for moving a character around, consider freezing the rotation. This can be found in the Constraints section at the bottom.



USING ALL WE HAVE LEARNED

Now that we've learned what 2D physics components we have to work with, let's put them to use.

1. Open the project you created from the Sprites handout.
2. Choose 3-5 tiles from the tileset sprite sheet and place them into a scene.
3. Add appropriate colliders to each.
4. Place one sprite from the ChuckNorris sprite sheet into the scene and add a polygon collider to it.
5. Add a Rigidbody2D to the character sprite.
6. Position the character sprite over a couple of the tile sprites.

2D Physics

Boxes and Circles and Edges. Oh my!

2D PHYSICS IN ACTION!

