DefKit v0.1

Deformable Bodies Toolkit for Unity3D

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DefKit is the simplest solution for adding deformable objects (a.k.a. softbodies) to your games.

With just one click:

- First, DefKit tetrahedralizes the 3D object, i.e. splits it's volume into a large number of small tetrahedrons (tets, for short).
- Next, for each corner of every tet, DefKit generates a small rigidbody.
- Finally, it connects all these rigidbodies along the tet edges by spring joints creating a, so called, mass-spring model (MSM).

DefKit relies on Unity's built-in physics and runs on all available platforms.

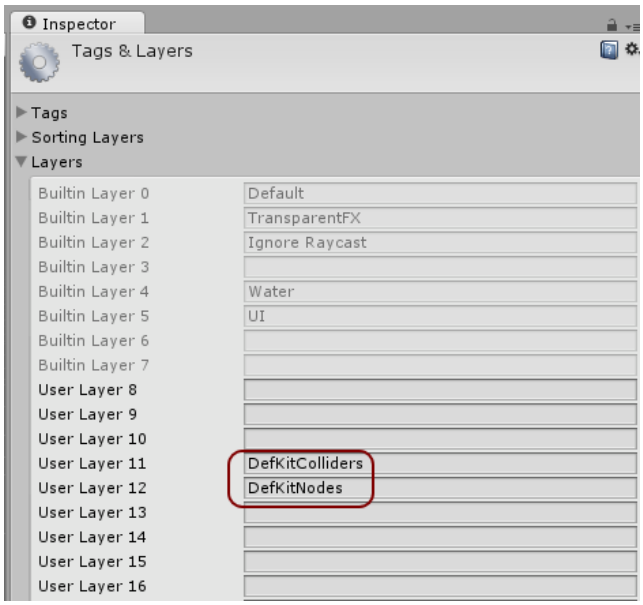
The included scripts help with visual mesh updates and control of mechanical parameters such as springs stiffness or friction coefficients.

This asset is still in development. Any bug reports and feature requests are more than welcome.

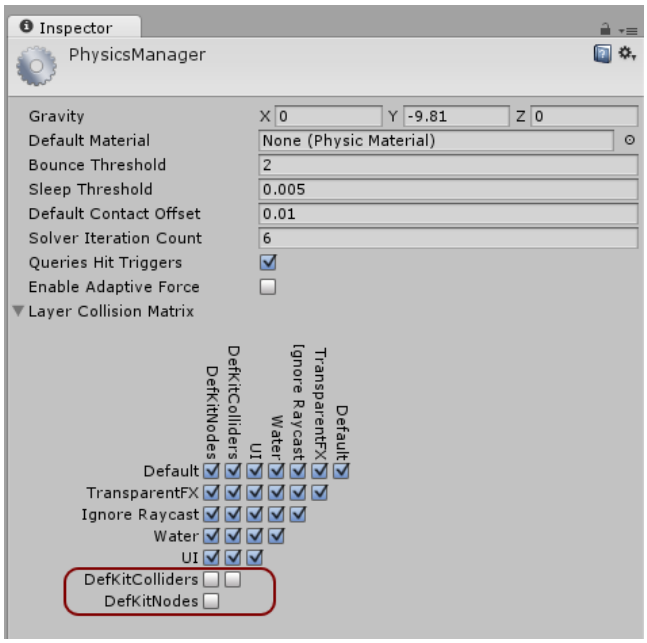
Manual

Watch the QuickStart video instead: https://www.youtube.com/watch?v=gbRLMiWbXU0

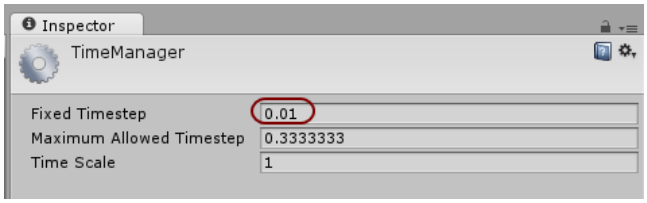
1. Add Layers at slot 11 called *DefKitColliders* andat slot 12 called *DefKitNodes*



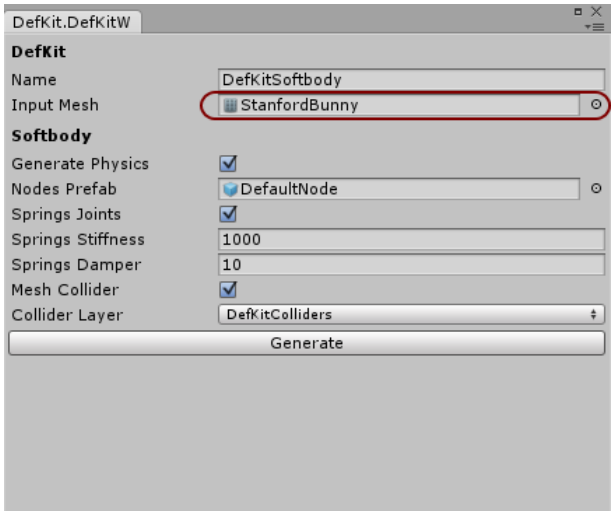
2. In *Edit/Project Settings/Physics* uncheck the collision between these layers (also self-collisions i.e. *DefKitNodes* vs *DefKitNodes*)



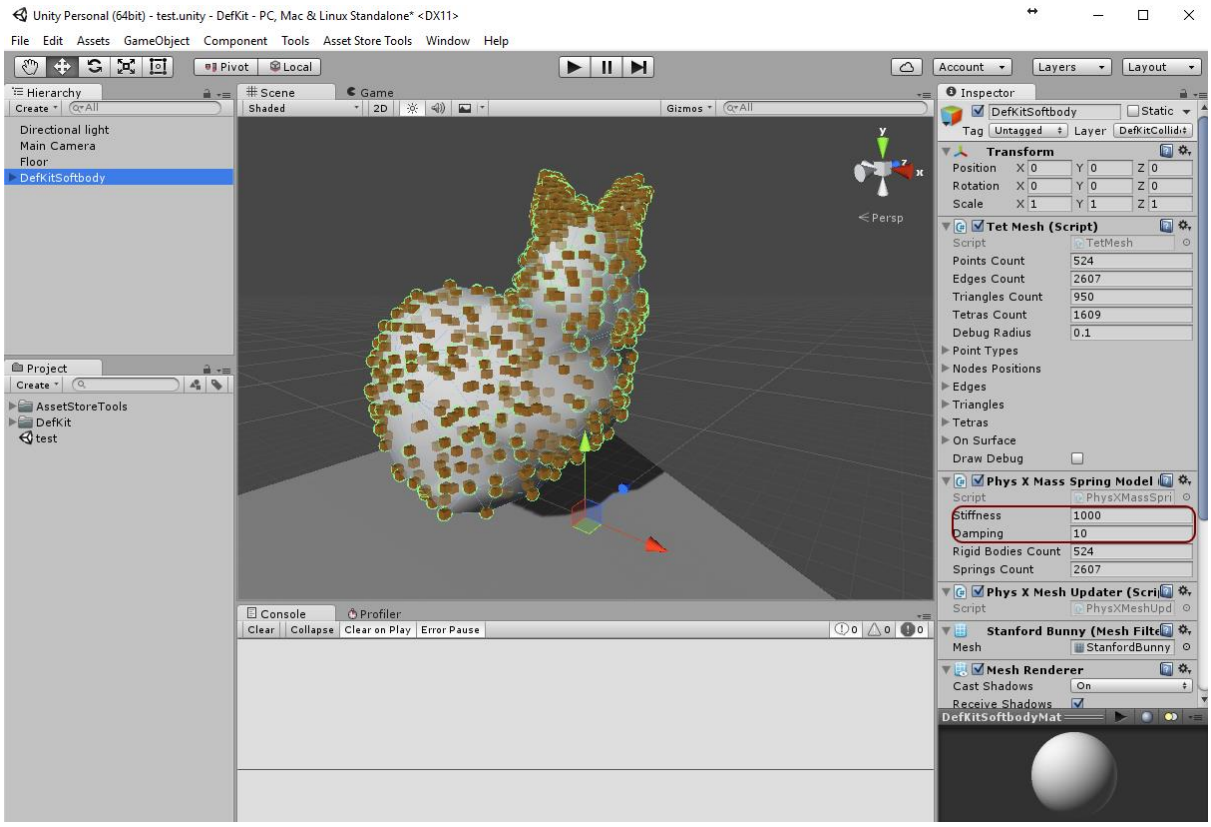
3. In *Edit/Project Settings/Time* decrease the *Fixed Timestep* to 0.01 (the lower the better)



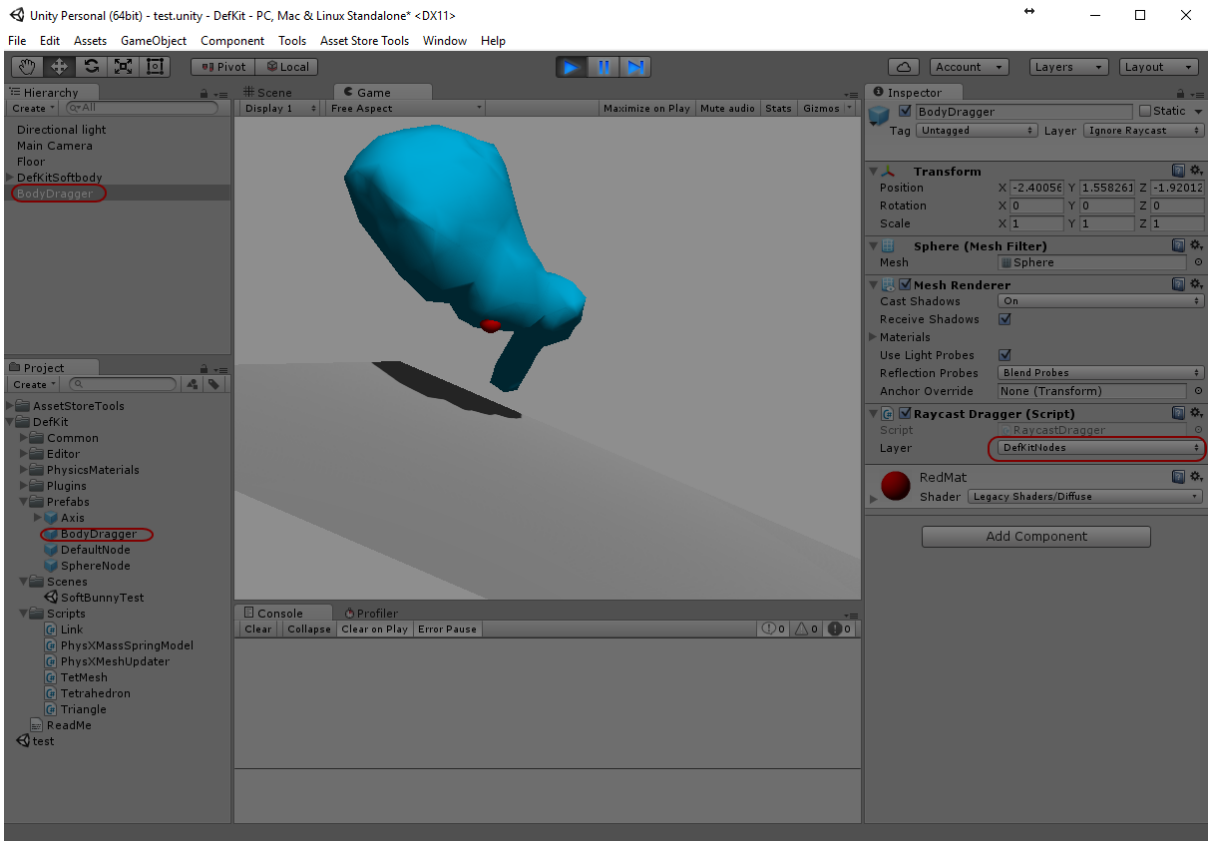
4. Open *Tools/DefKit* dialog and select any CLOSED mesh as an input mesh. You can leave the default settings and click *Generate*.



5. You can control the deformable object behaviour via Stiffness and Damping parameters. Remember that the *Fixed Timestep* has crucial impact on the accuracy of the simulation.



6. Add *BodyDragger* and set it's layer to *DefKitNodes* to manipulate the object with a mouse.



The *MeshCollider* will be updated so other objects can passively collide with the deformable mesh. As this is slow, remove the MeshCollider if not needed.