



Blender + Zbrush

Character Creation Series

Part Five: Rigging In Blender

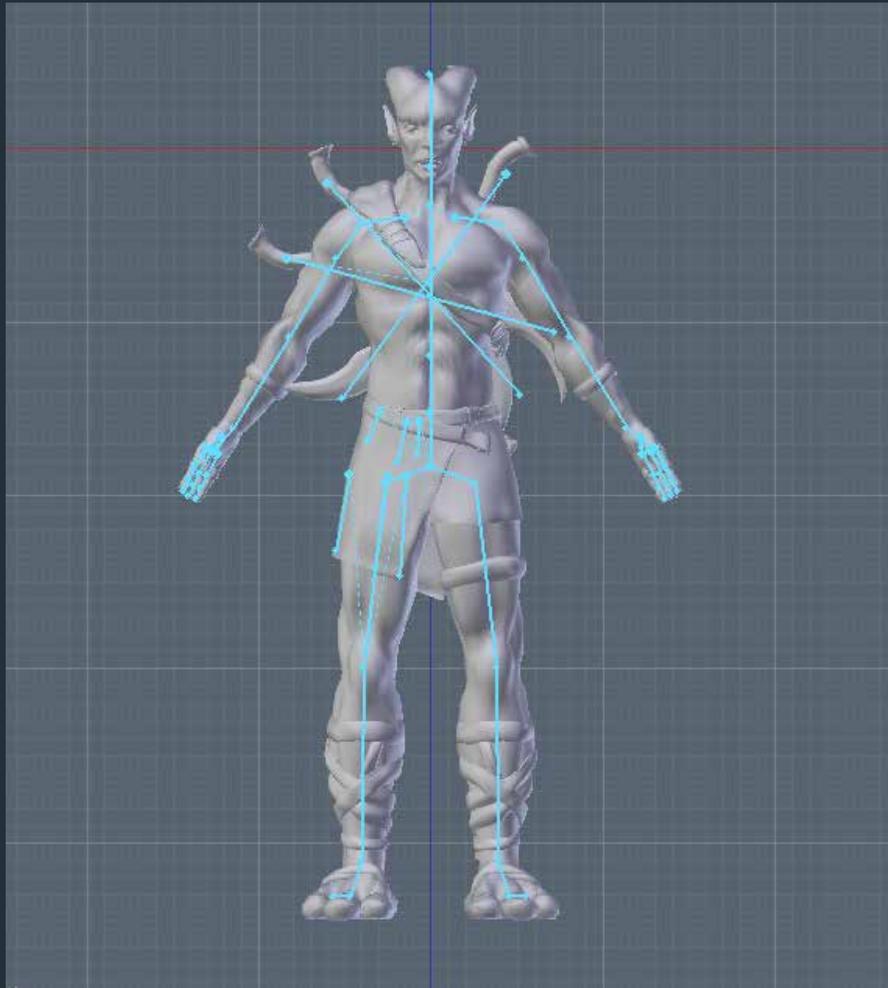
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Part Five Rigging In Blender

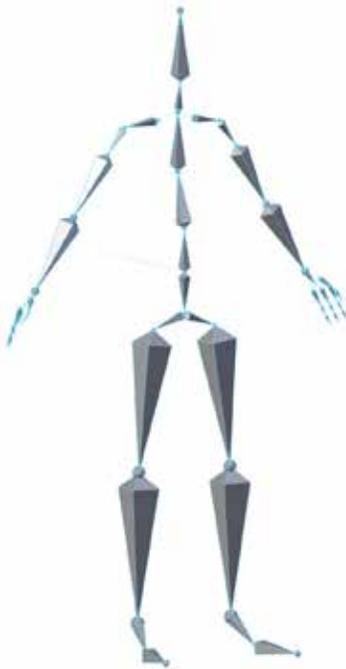
Forward

In the fifth part of this tutorial series you will learn the basics of rigging in Blender. This is very important as it is the key that drives animation. You will start with setting up a basic armature system then set up vertex groups and weight paint for it.



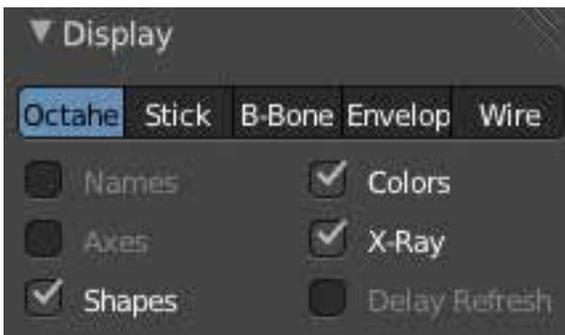
Rigging Explained

A rig is a set up that controls the movement of your model. You can think of it kind of like a skeleton, as the individual pieces of a rig are referred to as armatures or bones. Each bone, or armature, is linked to a specific part of the model and controls that section, for example, an arm or a leg. All of the armatures combined form what is called a rig. The process of rigging is setting up this structure.



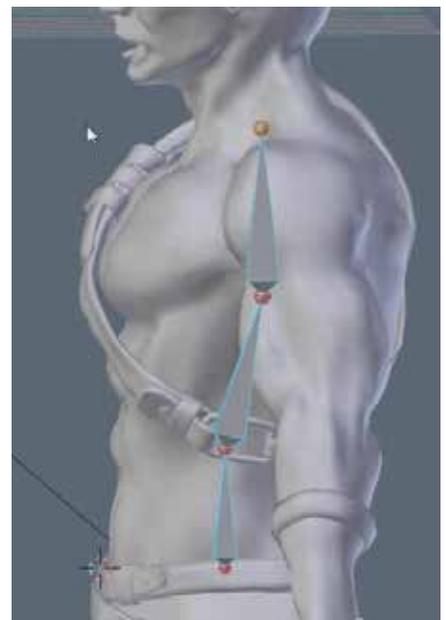
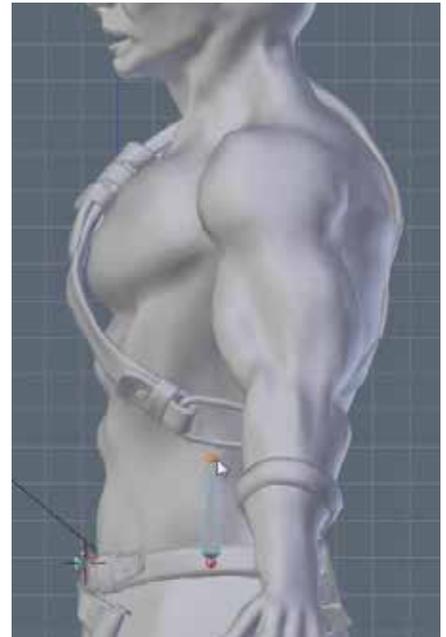
Beginning Rigging

1. De-select everything by pressing the “A” button. Press Shift + A to open the add menu.
2. Mouse over “Armature” and select “Single Bone.” You now have a single bone.
3. We’ll start with the spine. Select the armature and move it with the “G” button, and place it in the center of your mesh, as pictured to the right.
4. You will want your bones connected, so when adding more just press “E” (for extrude) and a new segment will be added, staying connected to the previous bone. Continue to build up the spine.

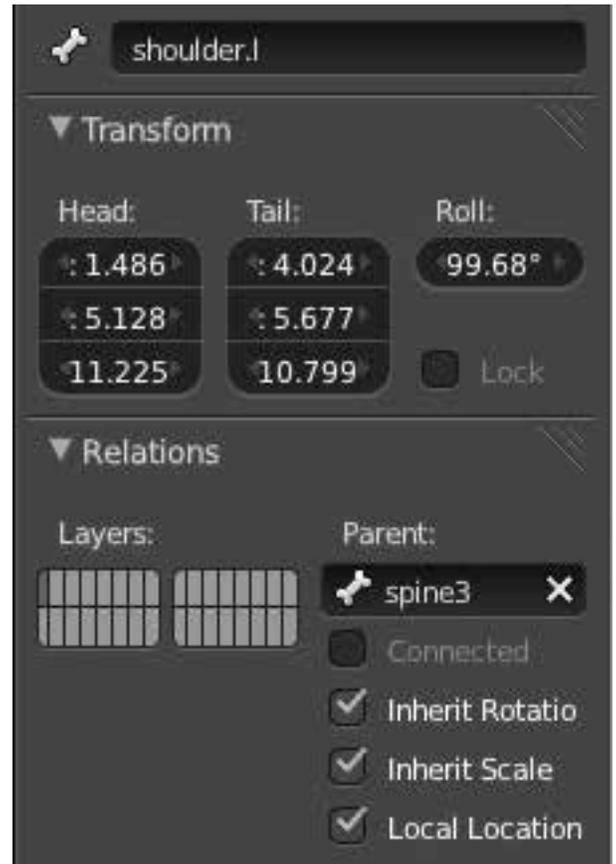
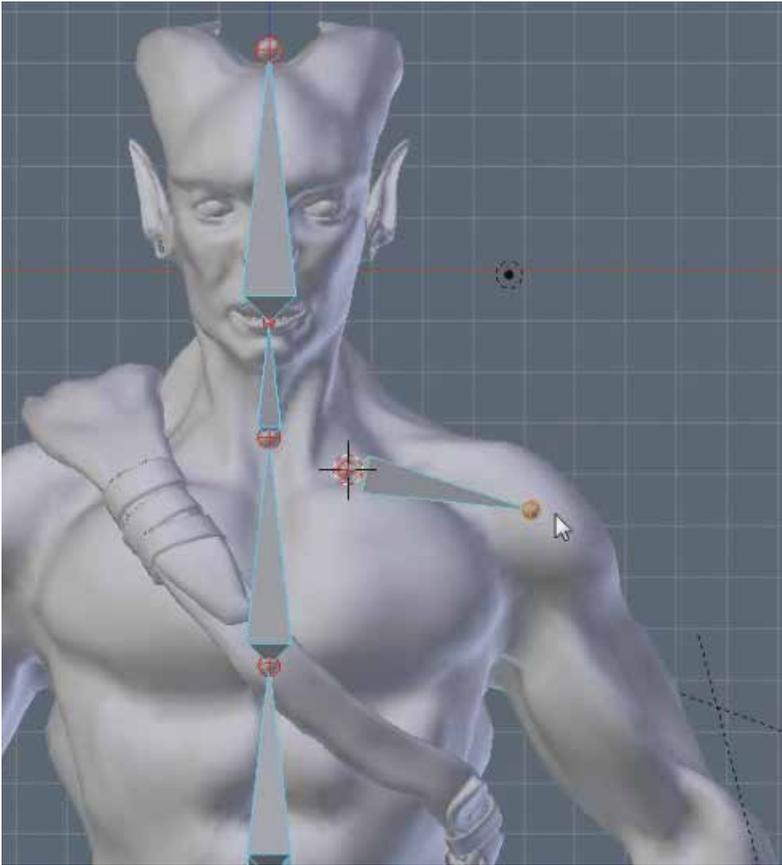


Under the Object Data Panel on the right, find Display. It useful to turn on X-Ray and Names. X-Ray allows you to see the bones through the mesh.

Names will display the name of each bone on the screen. You can also change the way bones are displayed. The default mode is set to “octahedron”, which is what is displayed on the right. I usually use “stick” however. It is merely preference.



Rigging Continued



5. Start adding names for the bones. I use a naming convention like “arm.l” or “arm.r” which stands for left, and right, respectively. Go to the Bones panel on the right, and in the first open box you can type the name of the individual bone, as shown above with shoulder.l at the top.

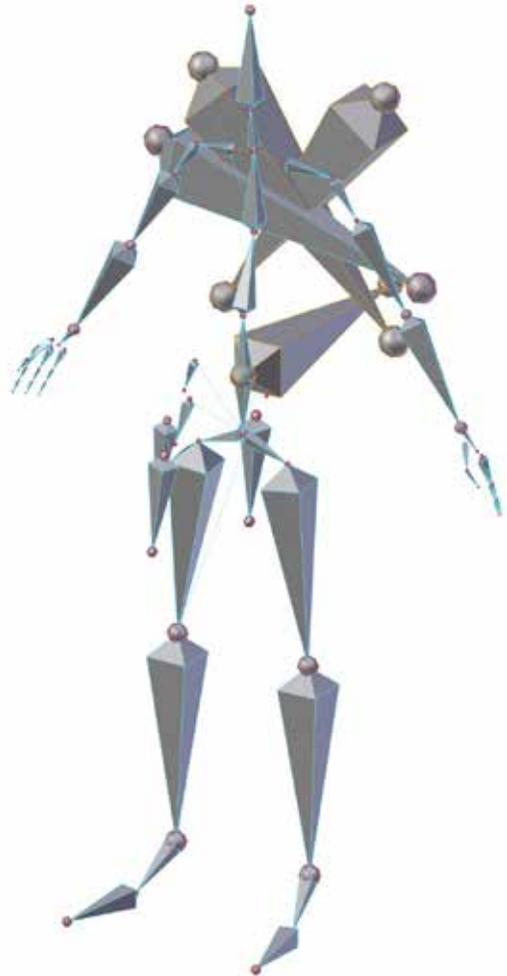
6. You can add some bones separately, for example, the shoulders as shown above. To make them rotate with the spine while moving we'll make the spine the parent of the shoulder bone. Under the Bones panel, go to Relations. Change the parent to the parent bone, which in this case is spine3. Spine 3 is what I chose to name the 3rd segment of the spine. Whatever you name your bones is up to you, just make it understandable.

Rigging Continued

This is my basic rig set up. I have bones for every major area of the body. The big bones on the back are for the swords. The bone sticking straight out of the back is to move all of the bones at the same time (simply by parenting the spine and hips to it) and the bones floating near the waste control the clothing.

Now that we have a full rig set up, it's time to assign them to the model.

- 1. Add a new modifier, just like subsurf, displacement and mirror, except this time we are going to add an “Armature Modifier.”**
- 2. Under Object, select the armature you created.**
- 3. Make sure “Bone Envelopes” is unchecked. We will not be using it.**

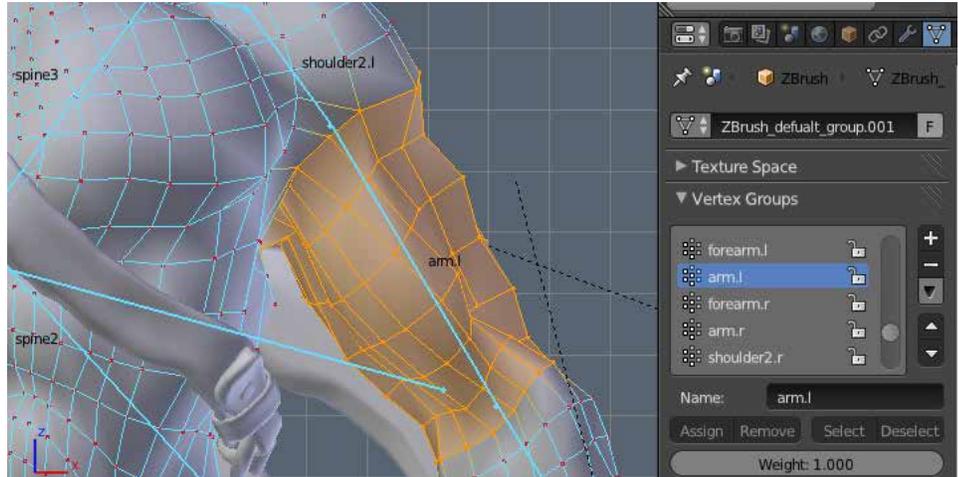


Vertex Groups

Vertex Groups are a great way to start assigning bones to groups of vertices.

1. Under Object Data, as shown to the right, click the “Plus Sign.”

2. Type in the name of the bone you are going to create a vertex group for.



3. Select the vertices you want to assign to be controlled by that bone. Click “Assign” to assign them. If you highlight them and click “Remove” you will remove them from being controlled by that bone. Also, clicking a vertex group from the menu, and clicking select will select all vertices assigned to that bone.

4. Create vertex groups for each bone, until the entire model is rigged.

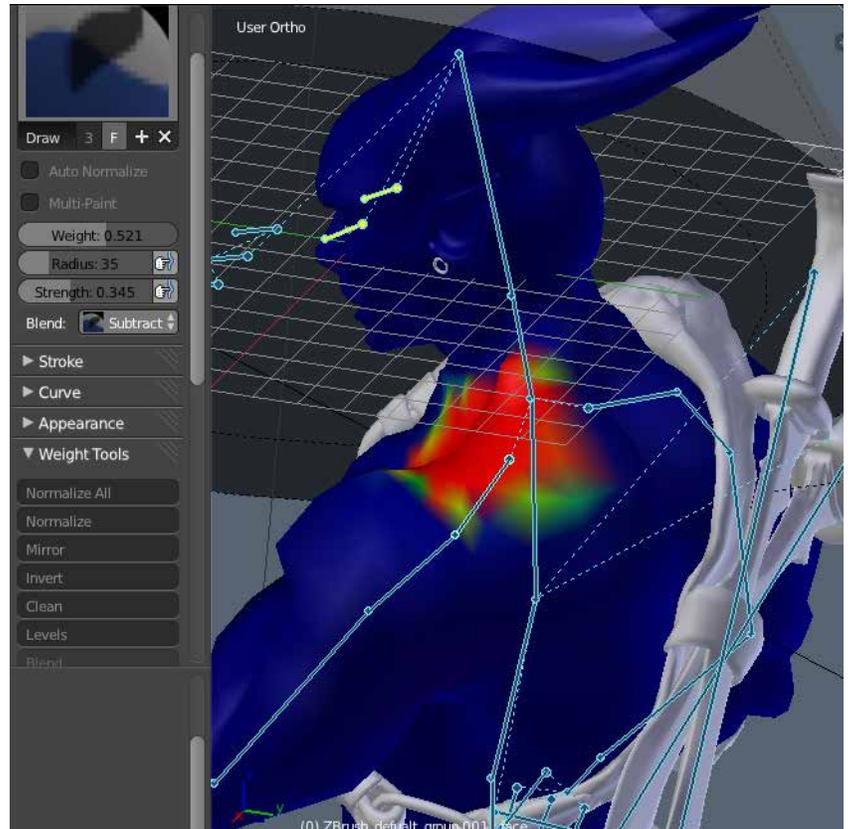
This is a good way to begin making the armature control your mesh. If you switch from “Object Mode” to “Pose Mode” now, when moving individual bones you’ll notice they now move the assigned vertices.

Weight Painting

Weight Painting is another way to assign bones to the model. I usually make vertex groups for every bone, then tweak them in weight painting mode.

In weight painting mode you literally paint the influence the bone has on the model. Red is full influence, green, yellow, and blue indicate weaker influence.

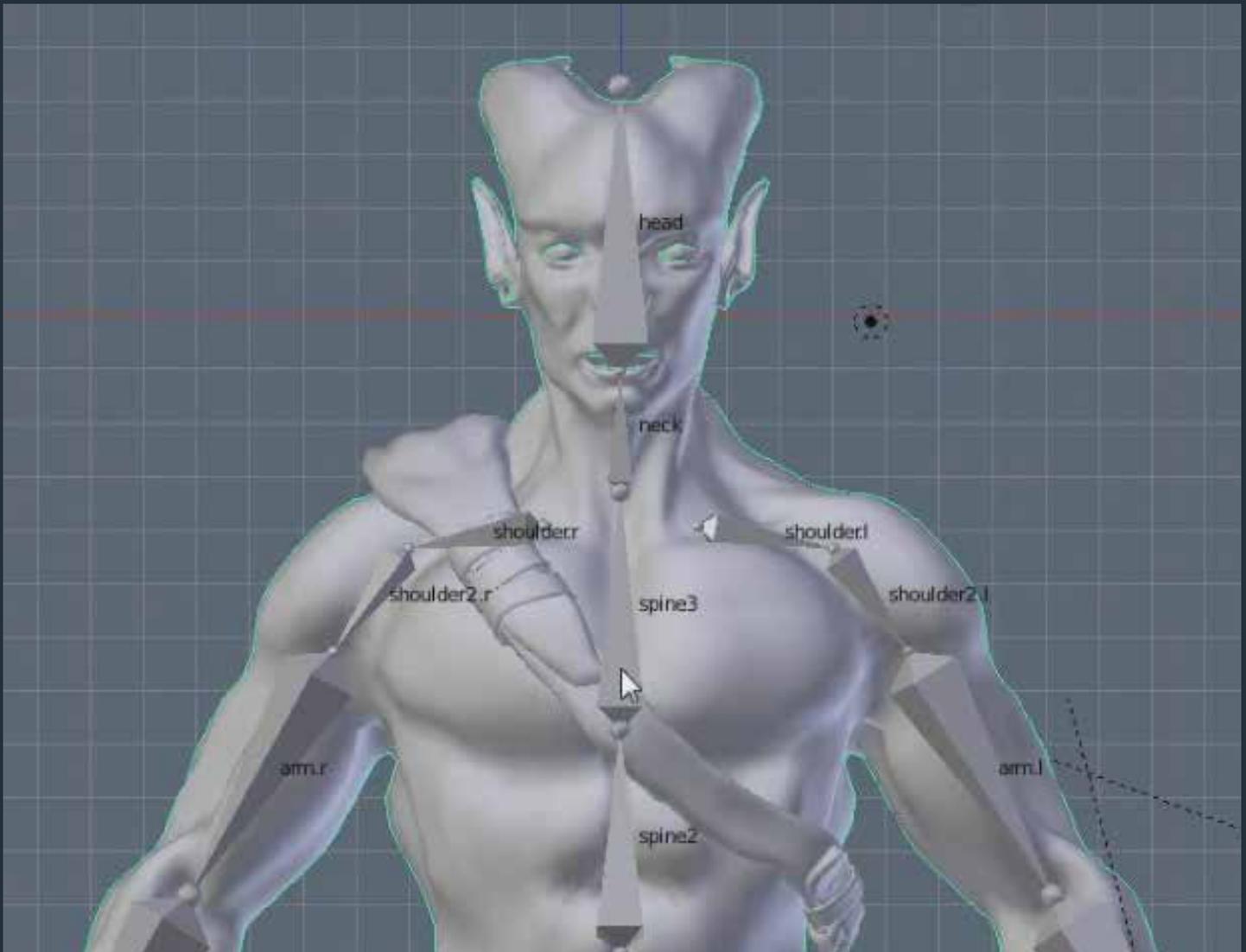
You can select the model, and change from “Object mode” or “Edit Mode” to “Weight Paint” to activate weight painting. On the left side of the screen you can adjust whether to add or subtract paint, change the influence and the brush size.



While in weight painting mode you can move the bones and see how they deform. Select a bone and rotate or move it. You can adjust weight paint here, to achieve a better movement. This is a great way to get precise control the deformation of your model.

Video Companion

When it comes to art, some things are better off being visual rather than being written about in a guide. If you are having trouble with some of these techniques I have supplied a video to re-irritate the focus of this tutorial. Check it out right here: <https://www.youtube.com/watch?v=cSvM1DupTJE>



To be Continued...

That's all for part five! By now you should have the knowledge to set up a rig with armatures, and assign individual bones to vertices. In Part six of this series we will look at how to animate the model!



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