DOGZERX

CARTOON HEROES

DOCUMENTATION | VERSION 0.94

CONTACT INFO

Email: dogzerx@hotmail.com
Dogzerx2 on Unity fórums.

ABOUT

This asset contains two warrior characters, male and female. The rig comes configured as Humanoid, with 37 animations each, plus a variety of face animations to blend using Avatar Masks.
Now it is also availabe the base models to which you can attach new clothing on the fly.

SCRIPTS

This asset contains scripts aimed at assisting character customization. Parenting parts automatically, matching cloth / character animation, adapting armor parts to the body, and hiding character parts that lay below clothes
Below is an explanation for every of the scripts' purpose, and the role of each of their parameters.

Find Set Parent

The purpose of this script is to automatically find and set a parent on start. Useful for attaching clothing to a character automatically.

Seach Word
This is a word to find among all scene objects. If an object's name contains this word, the script will automatically set it as parent.

Find Parent On Start
Allows the script to run itself automatically on start.

Favour Proximity
If there are more than one object containing the search word, it will chose the closest one.

Parent To Root Object
If enabled, once parent is found, use parent's root object instead. Useful to enforce parenting clothes to character's root, instead of any of its bones that might share the search word.

Exclude Words From Search
When finding a parent, sometimes undesired objects may share search word. For example, you may want to parent a garment to a human male character, so 'Male Human' or 'Male Villager' are ok, but 'Male Orc' is not, so you exclude 'Orc' from the search.

Find Set Parent (cont.)

Set Local Position
If enabled, a local position is set as soon as the object is parented.

Local Position
Establish here the local position for the game object once it's parented.

Set Local Rotation
Establish here the local rotation for the game object once it's parented.

Local Rotation
Establish here the local rotation for the game object once it's parented.

Store Parent's Local Position and Rotation
Once the search word has been chosen, local position can be stored in Editor Mode by clicking on this button, providing there's a potential parent in scene at the time.
This is useful when configuring armor parts, to avoid having to parent it to the correct bone, write down local position, and then passing it ot the script, you can simply type in the search word and click the button.

Destroy After Parenting
If enabled, script self destroys after use.

Match Skeleton

This script will continuously match a skeleton's pose to another, by choosing a master skeleton's root object that will perform the animation, and the slave skeleton's root object, that will match the animations of those bones that share same name, and same (relative) hierarchy.
It is used for rigged clothes that need to match their animation to the character.

Root Bone Is Parent
Because the clothes are usually parented to the character, it's convenient to establish that the master skeleton's root is the parent by defualt.

Get And Apply FindSetParent On Start
(Enabled when enabling previous parameter) When parent is defined by **FindSetParent** script, enabling this will make sure that the parenting is done before using root bone as parent.

Master Root
(Enabled when **Root Bone Is Parent** is disabled) Allows you to specify master skeleton's root bone.

Slave Root Is This Object
Sets current object as slave skeleton's root.

Slave Root
Is previous parameter is disabled, allows you to specify the slave skeleton's root obejct.

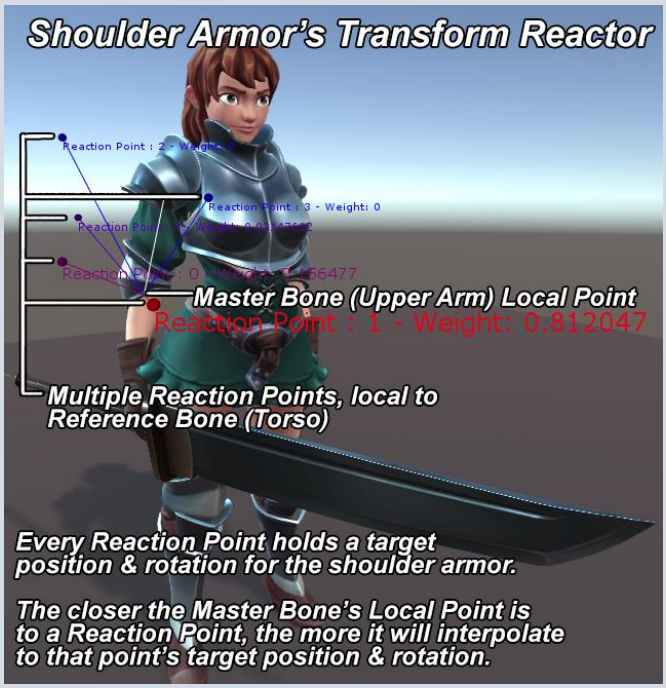
Match Position, Match Rotation, Match Scale
Allows you to specify which of the (local) transform animation to transfer to the slave skeleton.

SCRIPTS

Transform Reactor

This script will use an object's orientation as reference to affect the orientation of a different object.

Can be used for the armor pieces, it is in charge of interpolating and setting local position and rotation for them, for better positioning based on a master bone's orientation relative to a chosen reference bone.
As an example, it can be used to set shoulder armor's local position and rotation, using upper arm bone (master bone) orientation relative to the torso bone (reference bone).



The way it works is that master bone has one Local Point that will be tested for proximity against multiple Reaction Points that are local to the reference bone.
As the master bone rotates, its local point consequently moves with it, and every frame the distance to each of the multiple Reaction Points are updated, varying interpolation of different poses for the master bone, as each point has its own local position and rotation that is applied to the object the script is applied to.

The closer the distance between the master bone's local point to a reference bone's reaction point, the stronger the influence this reaction point has on the object's local position and rotation.

Using the shoulder armor's example, as the upper arm moves, the shoulder armor should naturally follow its movement, providing the multiple reaction points are properly configured, with each point representing diverse poses for the upper arm, assigning correct orientation for the armor piece.

The scripts applied to armor pieces already come configured for all armor prefabs in this pack. But if you were to try this script for a different purpose, with different rig and proportions, you would need to manually create and setup the reference points.

Below are the parameters and buttons that you can control in this cript.

Disable Transform Update
This button will enable and disable the transform update. Note that this script updates in Editor Mode as well, so you will need to disable it before setting it up.

Use FindSetParent On Start
This script can automatically search within a character's hierarchy the master and reference bones. Because the search is performed among children of the same root as the script's Transform, the **FindSetParent** could change the results.
By enabling this parameter, the script will get **FindSetParent** component and apply it before performing a search.

Get FindSetParent Component (Local)
Get **FindSetParent** component in Editor Mode. Checks if **FindSetParent** is present in the same object the script has been attached to.

Transform Reactor (cont.)

Apply FindSetParent
Does the same as **Set Parent Now** button in the **FindSetParent** component.

Master Bone / Reference Bone
Set here the Master and Reference Bone.

Master Bone / Reference Bone - Search Word
Find automatically on Start.

By clicking Search button, it will search in Editor Mode to find the bone that contains the search word. This will allow you to configure the Reaction Points.

Draw Elements
Enables viewport visualization of Reaction Points and Master Bone's local point. Also shows each Reaction Point's index and its current weight (based on distance to the master bone's local point).

Draw Size
Overall size of each of the reaction point's spheres.

Enable Position / Rotation Reaction
Makes it posible to enable or disable script's control over the position or rotation.

Master Bone – Use First Child As Reference Point
Master Bone's local point is arbitrary, so child bone's local position can be used as the local point.
For example, the elbow can be used as upper arm's local point, to control the shoulder armor's orientation.

Master Bone Local Point
If previous parameter is disabled, you can establish the local point manually here.

Select Master Bone
If Master Bone has been set, you can select it by clicking this button, so you don't have to go look it in the Hierarchy panel.

Auto-Disable Update When Selecting
As an option to **Select Master Bone** you can leave this paramter enabled, so when you select the Master Bone, the script disables control of its position and rotation, and hence you are allowed to modify object in Editor and configure each reaction point's pose.

Store (Default) Local Position & Rotation
Default local position and rotation is stored as soon as Master Bone is assigned after using **Search** button. You can save current pose as default with this button.

Restore Local Position & Rotation
After modifying the pose of the Master Bone, you may want to resture it back to its original position. You can restore it by clicking this button.

Reaction Points – Range Multiplier
Each Reaction Point has its own range, but you can manipualte all of them globally by using this slider.

Transform Reactor (cont.)

Create Reaction Point
This button adds a new reaction point (local to the Reference Bone).Takes current Master Bone's local point position by default. And the local position and rotation is automatically set to be current object's local position and rotation.

Reaction Point Parameters

- Point Local Position: Local position relative to the Reference Bone.
- Range: Reaction Point's range. More range will have more influence over its weight.
- Show Range: Displays a disc on viewport using range value as radius.
- Store Current Local Position & Rotation: Store object's current local position and rotation as the target position and rotation for this Reaction Point.
- Apply Stored (Disables Transform Update): Applies this Reaction Point's target position and rotation to the objects. It needs to disable script's control over the object's position and rotation.
- Position & Rotation: Reaction Point's target local position and rotation. Remove Point: Removes this Reaction Point.

Remove Mesh Parts

Script aimed at removing parts of a Mesh. Used to hide character mesh's triangles covered by clothing, to avoid clipping between base character and their outfits.

It works by using Mesh Parts defined by bounding boxes to gather and store groups of triangles while in Editor Mode, and during runtime assigning to the SkinnedMeshRenderer only the Mesh Parts' triangles that are visible, skipping the hidden parts. To create the arrays the script needs to be initialized, which can take several seconds, then the mesh hiding process can be done instantly during gameplay.

Get Component (Find On Local GameObject)
Gets the SkinnedMeshRenderer component that holds the mesh that will be affected by this script.

Source Mesh
Source Mesh is set automatically, but it can be changed with this parameter. Source Mesh is always preserved to un-hide triangles when needed.

Frame Duration Before Breakin Every Initializing Loop
Affects framerate when initializing triangle arrays. A lower value will have the script work on background at the cost of a higher initialization's duration. A high value will result in a choppy framerate, but faster initialization.

Initialize Mode
Slow Mode detects if all three vertices of the triangle are inside every bounding box, and Fast Mode only checks one vertex for every triangle, being less accurate, but finishing sooner the initialization process.

Initialize
After Mesh Parts have been set, click this button to initialize the triangle arrays.

Abort
Aborts initialization process.

Remove Mesh Parts (cont.)

Apply Mesh Visbility
Once triangle arrays have been initialized, visibility changes can be applied with this button.

Restore Original Mesh
Restores Source Mesh to the SkinnedMeshRenderer component.

Set Mesh Visbility – Set Hidden/Visible
For each Mesh Part created, you can set it hidden or visible using this button. This can be done automatically by the **Remove Mesh Parts (Set)** script.

Add Mesh Part
Adds a new Mesh Part to the script.

Mesh Part Parameters

- Group Name: The name of the Mesh Part.
- Draw Color: Color in which the bounding box are drawn to easily identify the Mesh Part.
- Add Bounds: Adds a new bounding box. Triangles inside these bounding boxes will be assigned to this Mesh Part. They can also be Deleted or Duplicated using buttons on the right.
- Delete <Mesh Part Name>: Deletes Mesh Part.