

Body Proportions

Script Reference

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1.ScalableBone

1.1 Description

ScalableBones work together. Each ScalableBone moves and rotates with the parentScalableBone, but does not scale with the parentScalableBone.

1.2 Fields

field	type	description
parentScalableBone	ScalableBone	The bone which it follows. Usually it is configured by ScalableBonesManager. In the future it will support manual configuration.
bindPosition	bool	If it is true, It moves with its parentScalableBone.
bindRotation	bool	If it is true, It rotates with its parentScalableBone.
positionOffset	Vector3	The offset that is maintained when moving with its parentScalableBone.
childrenScalableBone	bool	If it is true, print logs about this bone.

1.3 Properties

properties	type	description
Transformed	bool	Has transform changed since last frame?
IsBeingDragged	bool	Is the scalable bone being dragged?

1.4 methods

1.4.1 BeforeUpdateBone()

Description

We check if transform of the bone have changed in this method.

1.4.2 OnUpdateBone()

Description

We decide how to move and rotate the object based on its state and its superiors in the method.

1.4.3 AfterUpdateBone()

Description

In this method, we update historical data.

1.4.4 UpdateAll()

Description

The ScalableBonesManager will call this method in the order in which they appear in the hierarchy.

1.4.5 SetPosition(Vector3 pos)

Description

replace "transform.position=value" with "SetPosition(value)",if you hope its children bones move with this bone

1.4.6 SetRotation(Quaternion rot)

Description

replace "transform.rotation=value" with "SetRotation(value)",if you hope its children bones rotate with this bone

2.ScalableBonesManager

2.1 Description

The ScalableBonesManager collects all the events from the root's children to ensure that the parent ScalableBone updates before the children ScalableBone. The events are all executed in LateUpdate().

2.2 Fields

field	type	description
bindAllPositions	bool	When it changes, the bindPosition of all the children ScalableBone of root changes.
bindAllRotations	bool	When it changes, the bindRotation of all the children ScalableBone of root changes.
root	Transform	After clicking the "Auto Setup" button, all child bones of root will be configured automatically.
beforeUpdateBone	System.Action	ScalableBone.BeforeUpdateBone() will be called on this delegate.
onUpdateBone	System.Action	ScalableBone.OnUpdateBone() will be called on this delegate.
afterUpdateBone	System.Action	ScalableBone.AfterUpdateBone() will be called on this delegate.

3 ScalableBonesManagerEditor

3.1 Description

After clicking the "Auto Setup" button, the ScalableBonesManagerEditor will reorganise hierarchy of bones , and make root the parent of each child-bone, then adds ScalableBone component for each child.

After clicking the "Recover" button, the ScalableBonesManagerEditor will recover hierarchy of bones, and remove ScalableBone components from child-bones.

4 MouseManipulate

4.1 Description

Notify ScalableBone when a bone is being dragged.

5 AnimationConverter

5.1 Description

Animation Converter is designed to convert animations created before using Body Proportions to animations created with Body Proportions.

5.2 Fields

field	type	description
convertFrom	Animator	The animator's gameObject has hierarchy of skeleton before setup of ScalableBonesManager
convertTo	Animator	The animator's gameObject has hierarchy of skeleton after setup of ScalableBonesManager
clip	AnimationClip	The animation clip which you want to convert.
isCreatedByUnity	bool	Was the animation waiting to be converted created by Unity?
frameRate	Int	The frameRate of new animation clip.
noScale	bool	If "No Scale" is checked, scale animation will be discarded when

		converting.
path	string	The path of new clip.

5.3 Methods

5.3.1 ConvertClip()

Declaration

public static void ConvertClip(Animator convertFrom, Animator convertTo, AnimationClip clip, string path)

public static void ConvertClip(Animator convertFrom, Animator convertTo, AnimationClip clip, int frameRate, string path)

Description

Convert animations created before using Body Proportions to animations created with Body Proportions.

6 ScalableBoneJobManager

6.1 Description

ScalableBoneJobManager collects all the ScalableBone in the scene.

ScalableBoneJobManager gets data from ScalableBoneDepthList and arranges them. Then use Burst and Job to batch process the data.

6.2 Fields

field	type	description
sleep	bool	If you want the job manager to stop working, the sleep is faster than disable.
fastMode	bool	Fast Mode is lightweight. It is equivalent to setting all bindRotation to false. So Fast Mode is not suitable for making animation while application is playing.