

BLEND SHAPE PRESET TOOL

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What is BSPT ?



BSPT generates templates of blendshapes presets that can be shared between different characters.

You can easily create facial expressions by combining multiple blend shapes into presets. Each preset is controlled by a single parameter. So it's really easy to include the API in your game script.

You can create different templates with variations using the same presets name, so you can create differences between characters without any line of code, just by changing the template. Another advantage is that you don't have to deal with the original blendshapes names, you can use your own naming. If two characters don't have the same blend shapes names, you can unify them with two template files (one for each character) using the same presets names.

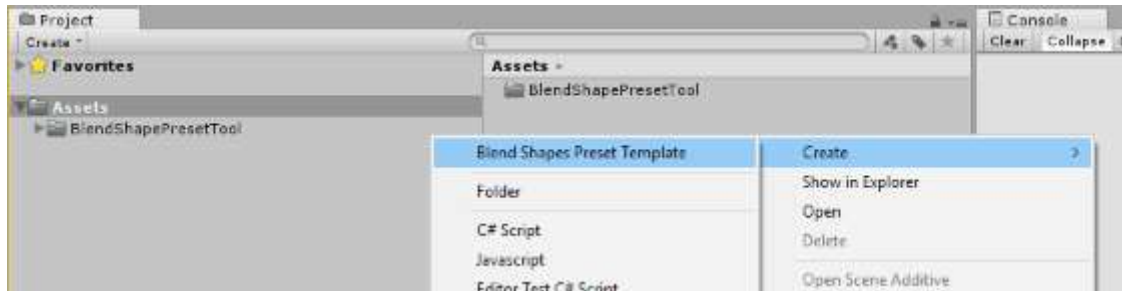
Different blend modes are available : Blend, Min, Max, Override.

The tool is really easy to use, you can modify the presets and see the result in the editor.


How to Start

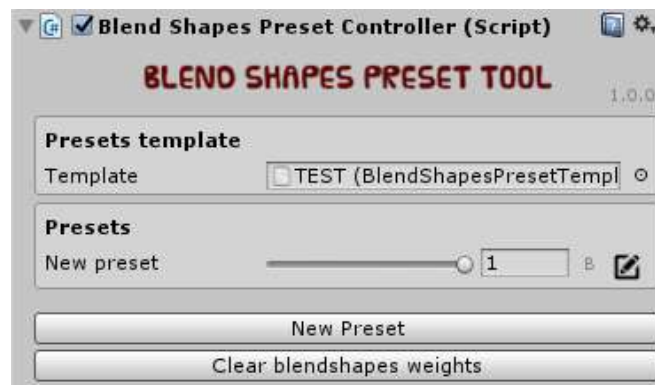
Create a preset template

- Select a folder in the project tab
- Right click → Create → Blend Shape Preset Template



Add a controller component

- Select the gameObject with the skinmeshRenderer component.
- Add the 'Blend Shape Preset Controller' component (Menu → Component → BSPT)
- Drag & drop the presets template in the reference slot.
- Click 'New Preset'
- Click on the edit icon 
- Click 'Ok' on the warning message.
- Edit the name, the blend mode and each blend shape weight for this preset.
- Click on the edit icon again to save the preset reference.
- Now you can add different presets and blend them.
- You can also create another template and edit it by dragging them in the controller slot.



Preset edition

Global parameters

On edition mode, you can change the parameters of the preset :

- the name that will be used in the API to get it.
- the blendmode : BLEND, MIN, MAX or OVERRIDE
- the current weight (change it for seeing the blending with other presets)

Blend modes

BLEND (b): all the blend shapes weight will be blend with other presets using BLEND mode.

MIN (-) : override all the other presets if the blendshape weight is smaller than the others.

MAX (+) : override all the other presets if the blendshape weight is higher than the others.

OVERRIDE (o) : override all the values.

The order of blending computation is : BLEND, MIN, MAX, OVERRIDE

If two or more preset use the same blend shape target with the override mode, the latest in list will be applied.

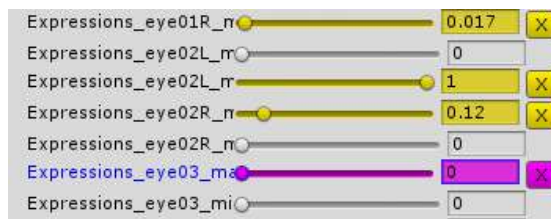
In the demo, the eye direction are controlled by script for the eye tracking, so the 4 presets that control the eyes directions are set to OVERRIDE. It prevents an unwanted blend with another preset.

The blink preset is set to MAX, so the eye will close even if another preset uses the same blend shapes, and the blending won't interfere with the animation.

Blend shapes weights

You can set the blendshape weights that will compose the preset.

When a weight is modified, its color switch to yellow, that means that the blendshape is registered into the current edited preset.



You can remove the value from the preset by clicking on the 'X' button.

The other presets weights can be modified, that's usefull to see the global result of the blending.

If the value is set to 0, the color is switched to magenta, because the value of 0 will be used only for the blend modes : MIN and OVERRIDE.

Advanced Parameters

Additional Skinned Mesh renderers

Some characters are composed of different meshes which share the same blendshapes. You can add them to the controller component by dragging them into the additional skinned mesh renderer slot.



The additional mesh must have the same blendshapes count and order.



You can remove an additional renderer by pressing the '-' button.

How to use the API

Have a look to the 'HeadController' script in the package for a sample of implementation.

Set the weight of a preset by name or id :

```
public void SetWeight(string name, float weight )  
public void SetWeight(int id, float weight)
```

Get the weight of a preset by name or id :

```
public float GetWeight(string name)  
public float GetWeight(int id)
```

Get the reference to a presetstate by name or id :

```
public PresetState GetPresetState(string name)  
public PresetState GetPresetState(int id)
```

Get the id of a preset from its name :

```
public int GetPresetStateId( string name )
```

Clear all the blendshapes weights :

```
public void ClearBlendShapesWeights()
```

Note : Using id instead of name will be faster.