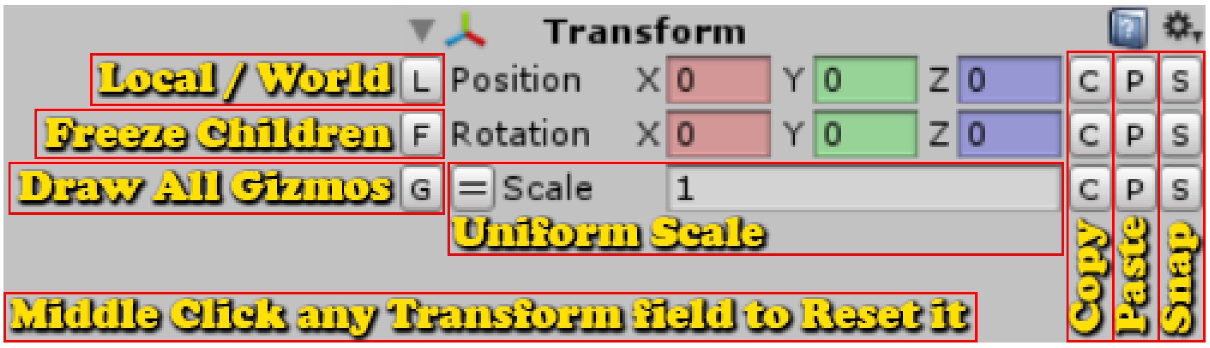
Inspector Gadgets

v4.4

Created by Kybernetik

1. Transform Inspector



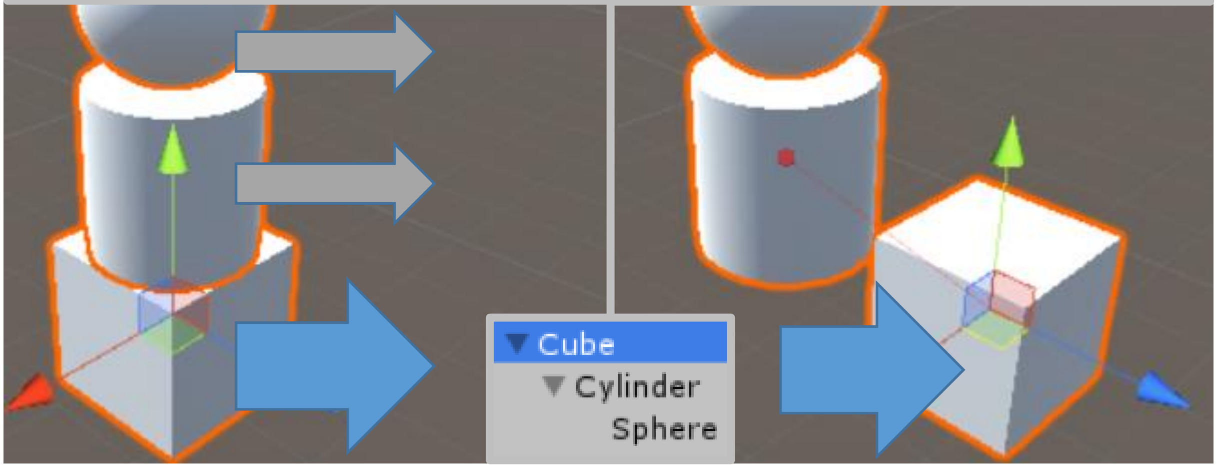
Inspector Gadgets Pro allows you to customise its settings via the *Edit/Preferences* window.

1.1. Local / World

The [**L**] button allows you to toggle the inspector between [**L**] local space and [**W**] world space.

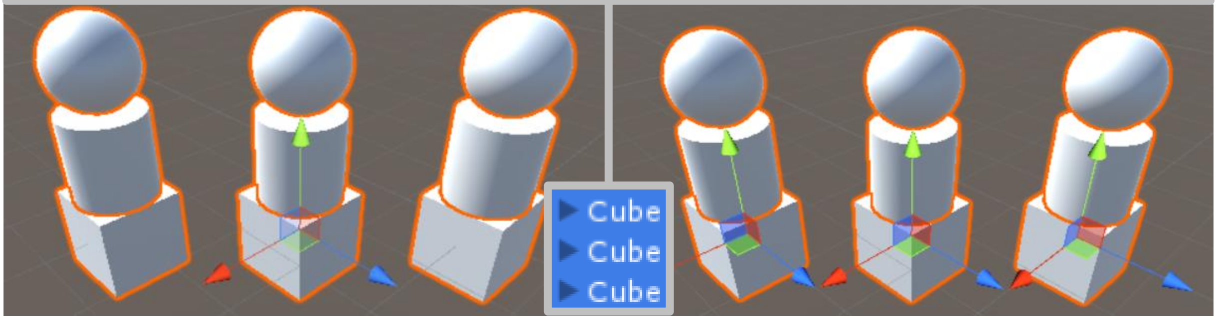
1.2. Freeze Children

Normally moving the parent would move the children as well	But with **Freeze Children** enabled moving the parent won't affect the children



1.3. Draw All Gizmos [Pro-Only]

Normally Unity only draws a scene gizmo for the first object you selected	But with **Draw All Gizmos** enabled it will draw a separate gizmo for each selected object



1.4. Uniform Scale

Most of the time when you scale an object you want to do so on all axes so that its proportions remain the same. When the object's scale is uniform (same value on all axes) it will be shown as a single value so you don't need to enter the same value multiple times.

- You can toggle between uniform scale mode and the regular vector mode using the [=] button on the left.
- If the scale isn't already uniform when you enter uniform scale mode, it will be set to the average of the current values.

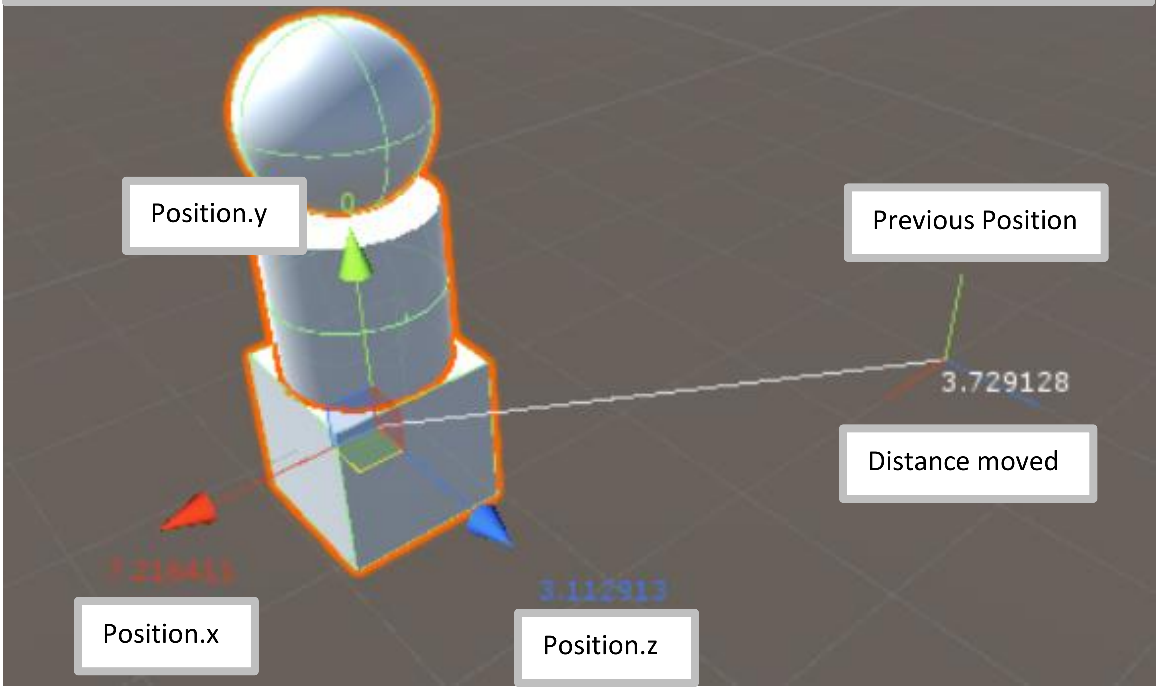
1.5. Utility Buttons

You can use the buttons on the right to [**Copy**], [**Paste**], and [**Snap**] individual transform elements (position, rotation, scale).

- The [**C**] and [**P**] buttons are integrated with the system clipboard, allowing you to copy values to and from other vector fields as well as other programs.
- Position, rotation, and scale also each have their own private clipboard, allowing you to copy a position and then a rotation at the same time without overwriting the previous value. To paste from the private clipboard, you simply right click the [**P**] button.
- You can also right click the [**C**] button to log a message containing the field's current value.
- The snap buttons use Unity's own snap settings which can be opened by right clicking them.
- These buttons are greyed out when they would do nothing. I.E. Copy and Paste are greyed out if the clipboard contains the same values as the selected object, and Snap is disabled if the object is already snapped.

1.6. Movement Guides [Pro-Only]

While you are moving an object in the scene, Inspector Gadgets will draw lines indicating the position you are moving the object from. This feature can be disabled via the *Edit/Preferences* menu.



1.7. Other Pro-Only Features

Inspector Gadgets Pro includes various additional features which are not available in the Lite version.

- Multi-object editing (the Lite version reverts to the default Transform inspector when multiple objects are selected).
- Transform fields which aren't at their default value will have a thicker border for emphasis.
- Transform fields which aren't a multiple of the snap value will be shown in italics.
- The *Edit/Selection/New Locked Inspector (Ctrl + Alt + S)* menu item opens an inspector window locked to the current selection so you can easily compare and copy values between different selection sets.

2. Auto Hide UI

Many users find it annoying having a Screen Space UI Canvas take up a massive amount of space in the scene. To work around this, the first time you select a UI object after importing Inspector Gadgets, it will ask if you want to automatically show and hide the UI layer.

- On UI selected: show UI layer, enter 2D orthographic mode, and focus the camera on the selected object.
- On UI deselected: hide UI layer and return camera to the previous state.
- The UI layer will be automatically shown when you close the Unity Editor just in case the next project you open doesn't have Inspector Gadgets.
- Credit to Astral Byte Ltd for the original idea.

3. Context Menu Functions

Inspector Gadgets adds various useful functions to the context menu (right click menu) of each field in the inspector based on its type.

- These functions all support multi-object selection, but the Lite version disables them while multiple objects are selected.
- Most types have Copy and Paste functions which allow you to copy values between fields in Unity as well as to and from other programs.
- The fields in the Transform Inspector have some extra functions to snap them to the grid, raycast down and snap to the ground, and rotate to look at another object.
- Unity Object acquisition: FindObjectOfType, GetComponent, GetComponentInChildren, GetComponentInParent, AddComponent.
- Unity Object array acquisition: FindObjectsOfType, GetComponents, etc.
- Create new instance of any ScriptableObject type.
- Open Inspector to open a new inspector window showing the target object.
- Save any Unity Object as an asset (such as a procedurally generated mesh).
- Randomize within common ranges: 0-1, 0-100, 0-360 for floats, random Vector2 in a unit circle, random Vector3 on or in a unit sphere, random quaternion, random euler angles.
- Common vectors: zero, right, up, forward, one.
- Normalize vector.
- String to lower or upper case.
- Log current value.

4. Script Inspector [Pro-Only]

This section applies to `MonoBehaviour`, `ScriptableObject`, and `StateMachineBehaviour`.

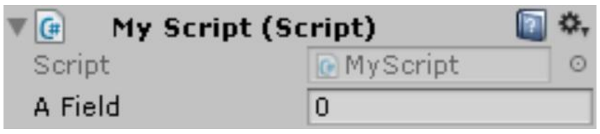
4.1. Script Field

By default, Inspector Gadgets hides the *Script* field at the top of Unity's script inspector to save space and provides the following extra functions:

- *Middle Click* in a script's inspector to open that script.
- *Ctrl + Middle Click* in a script's inspector to open its custom inspector script (or create a one if it doesn't exist, see Custom Inspectors).
- *Shift + Middle Click* in a script's inspector to ping the script asset in the Project window.
- This feature can be disabled via the Inspector Gadgets tab of the Edit/Preferences menu.

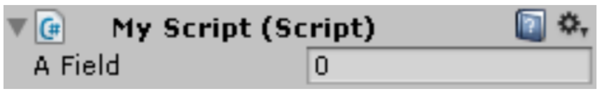
```
// Example.
class MyScript : MonoBehaviour
{
    public int aField;
}
```

Unity Default



My Script (Script)
Script: MyScript
A Field: 0

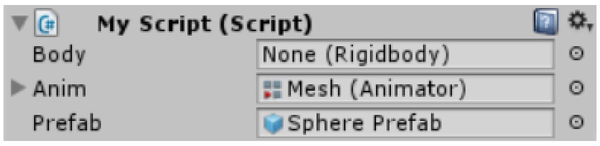
Inspector Gadgets



My Script (Script)
A Field: 0

4.2. Nested Object Inspector

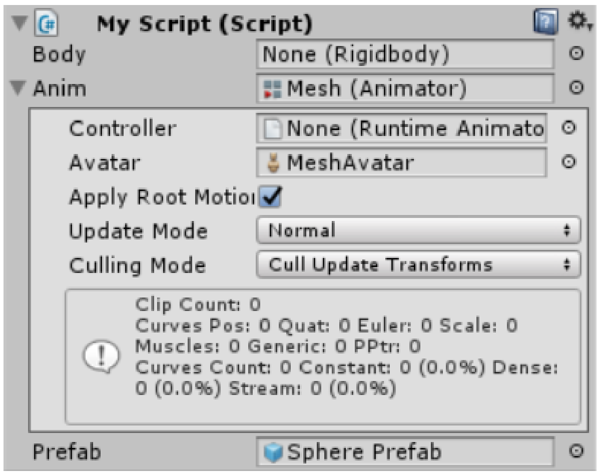
Inspector Gadgets adds a foldout arrow to the inspector for each object reference field which can draw the target object's inspector nested inside the current one.



My Script (Script)
Body: None (Rigidbody)
Anim: Mesh (Animator)
Prefab: Sphere Prefab

This feature activates automatically for all custom scripts without needing any attributes or other configuration.

Unfortunately, it doesn't work for GameObject fields since it would need to draw the inspector for their entire component list instead of just one component. You can however right click on the field and use the *Open Inspector* command to open the target object's inspector in a new window without changing your current selection.



My Script (Script)
Body: None (Rigidbody)
Anim: Mesh (Animator)
Controller: None (Runtime Animato
Avatar: MeshAvatar
Apply Root Motioi: ✓
Update Mode: Normal
Culling Mode: Cull Update Transforms
Clip Count: 0
Curves Pos: 0 Quat: 0 Euler: 0 Scale: 0
Muscles: 0 Generic: 0 PPtr: 0
Curves Count: 0 Constant: 0 (0.0%) Dense: 0 (0.0%) Stream: 0 (0.0%)
Prefab: Sphere Prefab

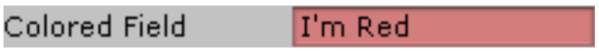
4.3. Decorator Attributes

Unity has several attributes which can be used to easily customise the appearance of the inspector without needing to write a custom inspector class: Header, HideInInspector, Multiline, Range, SerializeField, Space, TextArea, Tooltip. The `InspectorGadgets` namespace contains some additional attributes to allow for even greater customisation.

4.3.1. Color

The [Color] attribute simply changes the color of a field, allowing you to highlight it or group multiple fields together visually.

```
[InspectorGadgets.Color(1, 0.5f, 0.5f)]
public string coloredField = "I'm Red";
```

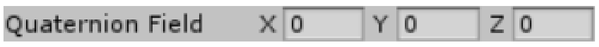


Colored Field | I'm Red

4.3.2. Euler

The [Euler] attribute displays the Euler angles of a Quaternion field so they can be more easily edited by people without an intimate understanding of quaternions (which is everyone).

```
[InspectorGadgets.Euler]
public Quaternion quaternionField;
```

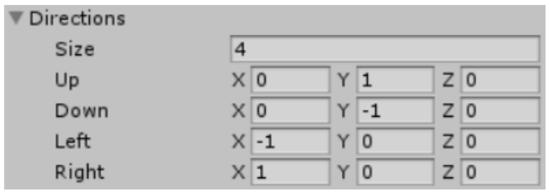


Quaternion Field X 0 Y 0 Z 0

4.3.3. Labelled Collection

The [LabelledCollection] attribute provides labels for the elements of a collection field to use instead of just calling them Element X.

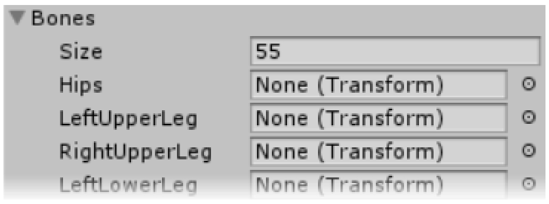
```
// Manually specify labels.
[InspectorGadgets.LabelledCollection(
    "Up", "Down", "Left", "Right")]
public Vector3[] directions;
```



▼ Directions

Size	4		
Up	X 0	Y 1	Z 0
Down	X 0	Y -1	Z 0
Left	X -1	Y 0	Z 0
Right	X 1	Y 0	Z 0

```
// Use names from an Enum.
[InspectorGadgets.LabelledCollection(
    typeof(HumanBodyBones))]
public Transform[] bones;
```

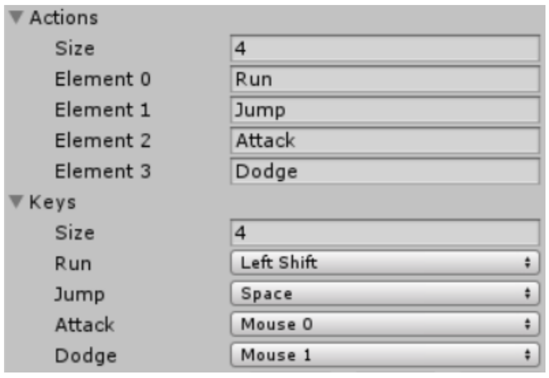


▼ Bones

Size	55
Hips	None (Transform)
LeftUpperLeg	None (Transform)
RightUpperLeg	None (Transform)
LeftLowerLeg	None (Transform)

```
// Use names from another field.
public string[] actions;

[InspectorGadgets.LabelledCollection(
    "actions")]
public KeyCode[] keys;
```



▼ Actions

Size	4
Element 0	Run
Element 1	Jump
Element 2	Attack
Element 3	Dodge

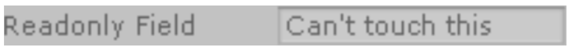
▼ Keys

Size	4
Run	Left Shift
Jump	Space
Attack	Mouse 0
Dodge	Mouse 1

4.3.4. Readonly

The [Readonly] attribute causes a field to be greyed out in the inspector so the user can't edit it.

```
[InspectorGadgets.Readonly]
public string readonlyField = "Can't touch this";
```

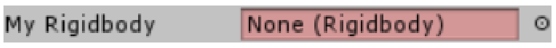


Readonly Field | Can't touch this

4.3.5. Require Assignment

The [RequireAssignment] attribute causes a field to be highlighted red in the inspector if it hasn't been given a value so the user knows that they should assign something to it. This attribute is very useful on object reference fields, but can be used on any type such as int or string.

```
[InspectorGadgets.RequireAssignment]
public Rigidbody myRigidbody;
```

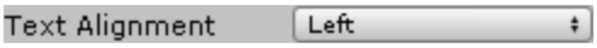


4.3.6. Toolbar

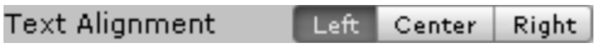
Normally Unity draws enums as dropdown fields. Unfortunately, this isn't always what you want because you can't see all the options without opening the list, you always need to open the list to change the value, and it doesn't properly support enums which use bitwise flags.

- Placing the [Toolbar] attribute on an enum field causes it to instead be drawn as a series of buttons.
- If the enum has too many values to fit into the available space, you can scroll the toolbar across using your scroll wheel while the mouse cursor is pointing at it or you can drag the field label (just like a number field).
- Toolbars for enums marked with the [System.Flags] attribute allow you to select and deselect values individually.
- The [Toolbar] attribute can also be used for string fields. You simply specify the allowed values in the attribute's constructor and they will be displayed as a toolbar.

```
public TextAlignment textAlignment;
```



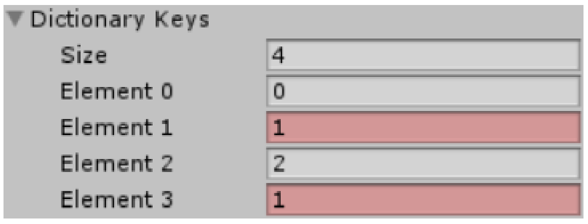
```
[InspectorGadgets.Toolbar]
public TextAlignment textAlignment;
```



4.3.7. Unique Collection

The [UniqueCollection] attribute causes the elements of a collection to be highlighted in red if they are duplicates of other elements.

```
[InspectorGadgets.UniqueCollection]
public int[] dictionaryKeys;
```



4.4. Inspectable Attributes

Unlike the above attributes which inherit from `PropertyAttribute` and alter the way Unity shows a field in the inspector, the following attributes inherit from `InspectableAttribute` and add extra elements at the bottom of the inspector.

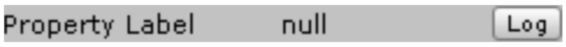
These attributes have a `When` property which can be set in the constructor to determine when they are drawn: always (default), in play mode only, or in edit mode only.

4.4.1. Label

The `[Label]` attribute adds a read-only label to display the value of any field, property (with a getter), or method (with no parameters), even static ones.

- If the value will change constantly, you can set the `ConstantlyRepaint` property to true.
- If the value is likely to be long, you can set the `Multiline` property to true.

```
[InspectorGadgets.Label]
string PropertyLabel { get; set; }
```



4.4.2. Button

The `[Button]` attribute adds a button in the inspector which the user can click to invoke the attributed method.

- The will automatically be given the method's name (with spaces between words) unless you specify a different `Label` in its constructor.
- If it is an instance method and multiple objects are selected, the method will be called once for each selected object.
- If the method has a non-void return type, the returned value will be logged.
- If you assign `SetDirty = true` in the attribute's constructor, it will automatically call `UnityEditor.EditorUtility.SetDirty` on the target after invoking the method to make sure changes are saved properly.

```
[InspectorGadgets.Button]
void InspectorButton() { }
```

4.5. Inspector Events

If Decorator and Inspectable Attributes aren't able to achieve the level of customisation you want, you can simply add a method called `AfterInspectorGUI` to your script and Inspector Gadgets will automatically call it after drawing the script inspector (so you can draw additional GUI elements below it). Or you can call the method On`InspectorGUI` to replace the regular inspector entirely.

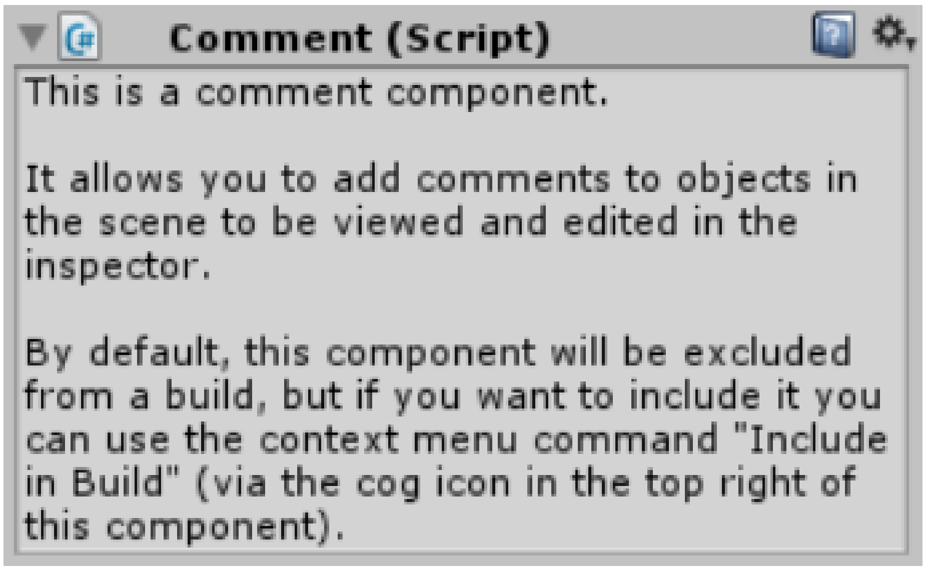
4.6. Custom Inspectors

If you require more customisation than you can achieve using the available events and decorator attributes, you will need to create your own custom editor class. You can do this quickly using *Ctrl + Middle Click* in the target script's inspector or using the *Create Editor Script* context menu command.

By inheriting from `InspectorGadgets.Editor<T>` instead of `UnityEditor.Editor` your custom editor will inherit the features described above (hide Script field, Middle Click to open script, support for Inspectable Attributes and Inspector Events). You will also be able to access the inspected objects directly using the `Target` and `Targets` properties (note the capitalisation) rather than needing to type-cast the regular `target` and `targets` properties yourself.

5. Misc

5.1. Comment Component



This is a comment component.

It allows you to add comments to objects in the scene to be viewed and edited in the inspector.

By default, this component will be excluded from a build, but if you want to include it you can use the context menu command "Include in Build" (via the cog icon in the top right of this component).

Note: the Comment component is only available in Unity 2017 or later.

5.2. Auto Prefs

The InspectorGadgets.AutoPrefs class contains a group of nested classes which simplify the way you can store and retrieve values in PlayerPrefs and EditorPrefs.

```
// First you declare your pref with the key and default value (optional).
public static readonly AutoPrefs.Bool MyPref = new AutoPrefs.Bool("MyPref", true);

// Then you can get and set the value without using the key everywhere.
if (MyPref)// Or MyPref.Value.
{
    MyPref.Value = false;
}
```

- AutoPrefs.Bool stores its value in PlayerPrefs while AutoPrefs.EditorBool stores its value in EditorPrefs.
- Other pref types are also available: float, int, string, Vector2, Vector3, Vector4, Quaternion.
- You can create your own Auto Pref types by inheriting from AutoPref<T>.

5.3. Editor Events

- The [InspectorGadgets.OnWillUnloadAssemblies] attribute registers a static parameterless method to be called immediately before the Unity Editor unloads assemblies, such as when preparing to reload after compiling modified scripts.
- The [InspectorGadgets.OnEditorQuit] attribute registers a static parameterless method to be called when the Unity Editor is closed (but not each time assemblies are reloaded, such as when scripts recompile).

Questions, feedback, feature requests, etc: kybernetikgames@gmail.com.