Mesh Editor for Unity

User Manual

August 2014

Start Extension

Mesh Editor Panel can be opened through Window->Mesh Editor Panel. Once the panel is opened, GameObjects with MeshFilter component in scene view can be processed by this extension.

Main Window

Figure 1Main Window

Edit Mode

Mesh Editor provides 4 editing modes: Object, Face, Edge and Vertex. You can switch between these modes by choosing under the drop-down menu or right click on scene view and drag mose onto the desired editing mode on the marking menu. You have to select an object before switching editing mode.
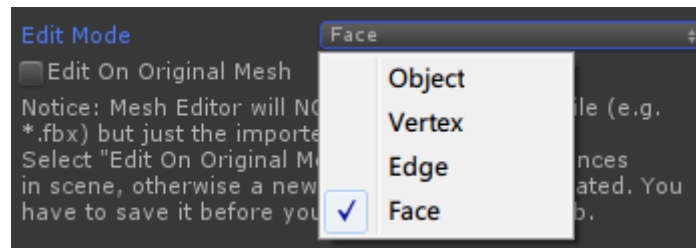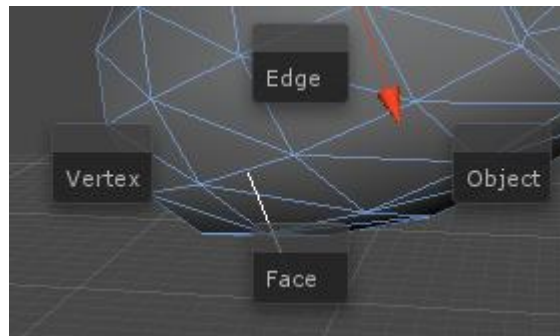
Figure 2 Switch Edit Mode Using Drop-Down Menu

Figure 3 Switch Edit Mode Using Marking Menu
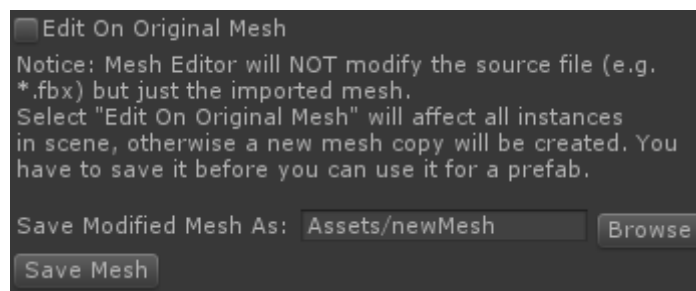
Edit On Original Mesh

Figure 4 Edit On Original Mesh

If selected, Mesh Editor will edit the shared mesh between all mesh instance, including the imported mesh and prefab (but not on the model source file like *.obj , *.fbx etc.)

Otherwise, a separated mesh copy will be created, and only the gameObject being edited will be affected. You have to save this mesh to disk before you can use it to create a prefab, or it'll be empty after instantiation. You can change saving path by typing in textfield or browsing. The containing folder has to be within Assets folder of this project.

Face Editing Tool will be introduced in later chapter.

Toolbar

Move Tool

Rotate Tool

Scale Tool

Undo
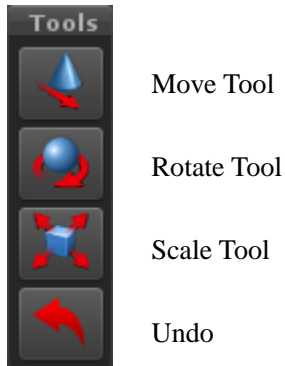
Since Unity default handles cannot be hidden (otherwise the selection highlight will not work), there will always be a default handles (move, rotate or scale) on the object you selected. You have to reselect or toggle by hotkey to load handles from Mesh Editor (so two handles will be shown in scene view).

Selection

To select a vertex/edge/face, click on it and the it will be highlighted. Hold "Shift" to select multiple vertex/edge/face. Drag a rectangle on scene view to select all vertex/edge/face within the rectangle area. Press "Q" to enter selection mode without display the handles.

Move

To enter moving mode, Press "W" or click on Move Tool icon on toolbar. A moving handle will show up in scene view. You can move elements by dragging the handles around.
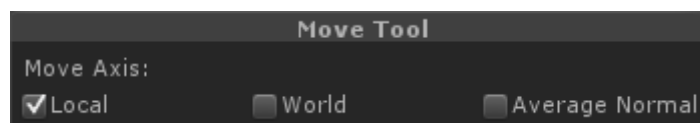
Moving Coordinates:

Figure 5 Move Tool Option

Local: Using Object's local coordinates

World: Using World coordinates

Average Normal: Using the average face normal as the Y direction.

Rotate

To enter rotating mode, Press "E" or click on Rotate Tool icon on toolbar. A rotation handle will show up in scene view. You can rotate elements by rotating the handles.
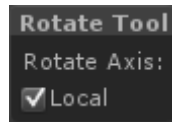
Rotation Coordinates:

Figure 6 Rotate Tool Option

Local: Using Object's local coordinates.

Scale

To enter scaling mode, Press "R" or click on Scale Tool icon on toolbar. A scaling handle will show up in scene view. You can scale face by dragging the handles.
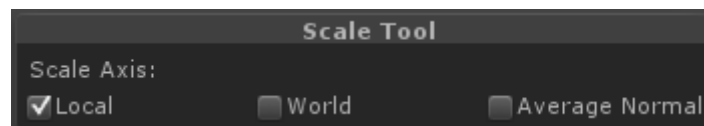
Scaling Coordinates:

Figure 7 Scale Tool Option

Local: Using Object's local coordinates

World: Using World coordinates

Average Normal: Using the average face normal as the Y direction.

Undo

Due to the limitation of UnityEditor, its undo cannot record mesh changes. Thus a custom undo has been implemented. Ctrl+Z is currently not supported. 10 most recent operations (move, rotate, scale, extrusion, harden edge and change material) will be recorded. **YOU HAVE TO QUIT MESH EDITOR BEFORE SAVING THE SCENE OR THESE UNDO RECORDS WILL CAUSE MESH LEAK!**

Editing Mode

Object

Under Object mode, it does nothing specifically. Unity itself will handle all your operations, Mesh Editor will not intercept any action.

Vertex

Under vertex mode, you can edit vertices on a selected mesh. Mesh Editor supports single/multiple vertex editing by tools provided on toolbar.

Edge

Under edge mode, you can edit edges on a selected mesh. Mesh Editor supports single/multiple edge editing by tools provided on toolbar.

Face

Under face mode, you can edit faces on a selected mesh. Mesh Editor supports single/multiple face editing by tools provided on toolbar.

In addition, Mesh Editor provides some other face editing tools on main window. These tools will be grayed out unless you have at least one face selected.

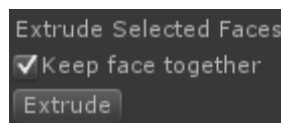**Face Editing Tools:**
Extrude:

Figure 8 Extrude Option

Keep Face Together: If selected, adjacent faces will be extruded together. Otherwise each face will be extruded separately.
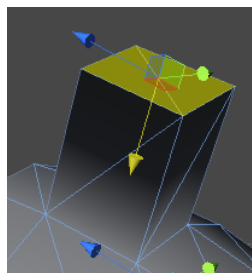

Figure 9 Extruded Faces

Harden Face Edge:

Unity hardens edge by separating shared vertex and assign different normals. This might cause visual glitch after an extrusion. Use this if you have unwanted soft edges or weird normals on the mesh.
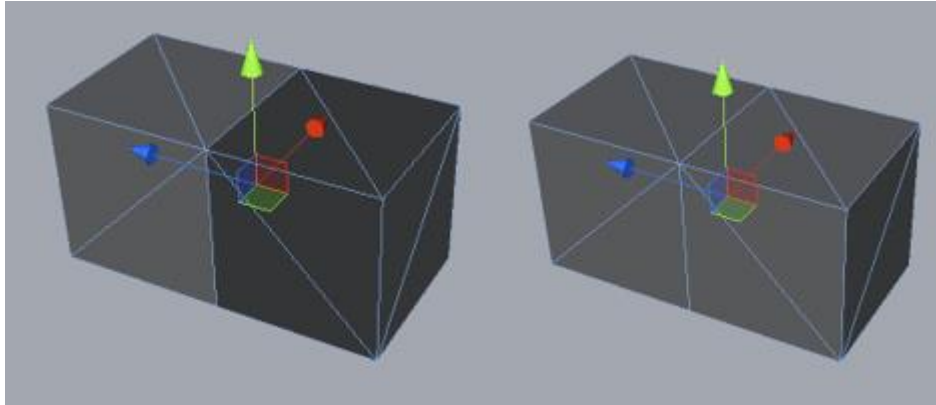

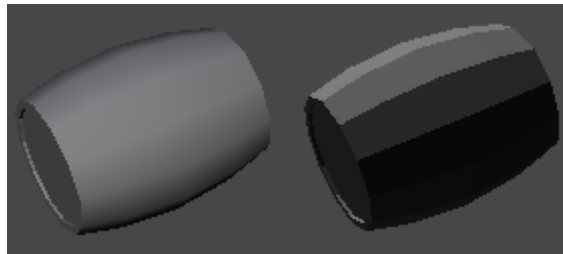Figure 10 Left: Incorrect Normal after Extrusion. Right: Fixed Hard Edge Normals

Figure 11 Left: Soft Edge. Right: Hard Edge

Change Face Materials (experimental):

Warning: Using this function before other face editing tool (extrude, harden edge) might cause unwanted result. Please use it after finishing editing the mesh.

Change material for selected faces

Create New Material:
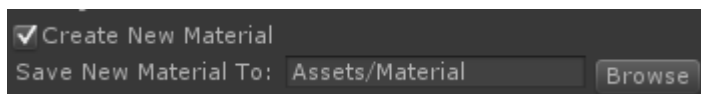
Create and assign a new material to selected faces. The default shader is "Diffuse". You can change saving path by typing in textfield or browsing. The containing folder has to be within Assets folder of this project.

Not Create New Material:

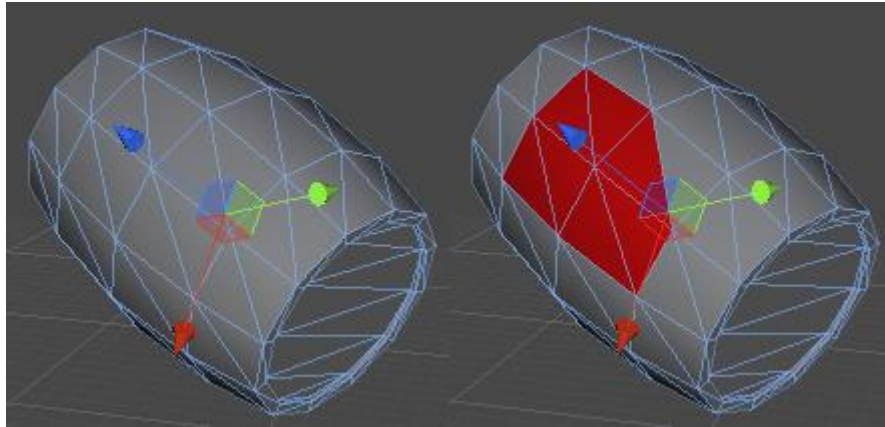Select and assign a existing material to selected faces.

Figure 12 Left: Before Changing Material. Right: After Changing Material

Changelogs

2014-08-07 Version 1.0

- Vertex/edge/face editing

- Move/scale/rotate operation

- Face extrude/harden edge/change material