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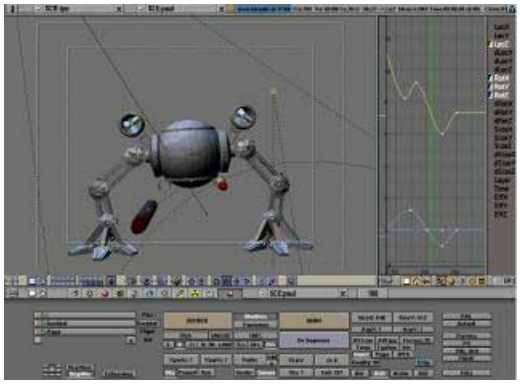
Tutorials

id3

Introduction

If you are reading this tutorial, you are probably feeling like I did exactly one year ago. I had found this extremely interesting looking 3D application (which other users were raving about), but the user interface completely baffled me. I couldn't find the quit function (I had to kill the application instead of exiting it), I saw buttons that seemed to react differently each time I clicked on them and every time something interesting happened, I could not reproduce it.

In the weeks after that, I slowly found out the basic principles behind the Blender user interface. And though it is non-standard, it became clear that it was a very consistent system - it would let me use the same functions in a number of completely different situations.



Blender in Action.

This tutorial will save you weeks of frustration by explaining the basics of Blender's user interface. It will not explain every button or even every window in detail (that is where the Blender manual comes in), but instead let you see the basic idea behind it.

After finishing this tutorial you are ready to work with the rest of the book. Like me, you will find out that Blender's user interface really grows on you; it is one of the most efficient and well-thought out interfaces I have worked with.

Here is what I found to be the Golden Rule of Blender:

"Keep one hand on your keyboard and one on your mouse."

Even while Blender's user interface may be a bit daunting at first, I hope that working with this book will teach you that it is actually a very intuitive one. It was written entirely for working efficiently and quickly and this means that a lot of functions are accessible both by using the keyboard and by using the mouse. Working with hotkeys instead of menus is harder to learn, but the rewards are great.

After a while working with Blender becomes a second nature. Often, my girlfriend watches in amazement at the speed with which I can handle objects, change views, navigate your way around your scene in Blender. Blender has really turned my keyboard and mouse into a glove which reaches into 3D space.

But it all starts with the Golden Rule - remember him while you are working your way through this book!

What am I looking at?

When you first start Blender, your screen will look like this. The screen is divided into three parts; on the top you see the Info Window. Among other things, you will see Blender's version number and some statistics about your current scene.

Next is the 3D Window. This window type is used for all the editing in your 3D world. The pink square in the middle is the standard plane. It is pink because it is currently selected. The black triangle on the bottom is the camera. The gray lines are the grid lines of the 3D world - you can use them to align your objects. The cross hairs with the white and red colored circle is the 3D cursor. You can place it anywhere in 3D space. It is used to determine where new objects are placed, but it can also act as a center for rotation or scaling.

The window on the bottom is called the Buttons Window. In this window, you can edit a variety of information about your scene: materials, lights, animation settings, rendering settings - it is all in here.

An empty Blender scene.

The window header.

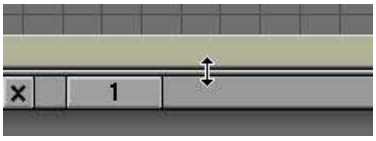
Each window has a Header. For the 3D window the header is located at the bottom. You can switch the position of the header by right clicking on it and confirming the requester that pops up ('Switch header'). Pay special attention to the button on the far left - each window has this icon. This is also the one that completely eluded me in the beginning.

In Blender terms, it is called an Icon Slider button. If you click your left mousebutton on it and drag left or right it will change, revealing a number of different icons. Each icon corresponds to a different window type. I will explain the different types later.

You can also click on the left and right half of the Icon Slider to change the window type.

The contents of the Buttons Window can be changed by clicking on one of these buttons. In fact, it is a lot like the Icon Slider button that I discussed, but now all the options are visible. The meaning of the different buttons is explained in 'the Buttons Window' below.

Selecting a Button Window.



Moving a window border.

Configuring the screen your way

Blender's screen can be reconfigured in any way you like. To start with, you can change the size of the different windows by placing the mouse pointer over one of the lines separating the different windows. The cursor changes shape to indicate you can now change the window size. Left click and drag to change the window size.

Adding a new window is similar: move the mouse pointer over a window border and press the middle mouse button. A small requester will pop up now. You can confirm splitting the screen by left clicking on the text 'Split', or by pressing Enter. The window which has the focus and has a yellow header (in this case, the top window) is the one that will be split - approaching the window border from below will split the bottom window.

A line indicating the position of the split is now shown. You can move it to the desired position and left-click to confirm the location.

Cancel the action by moving your mouse pointer away from the requester, or by pressing Esc.

Splitting a screen.

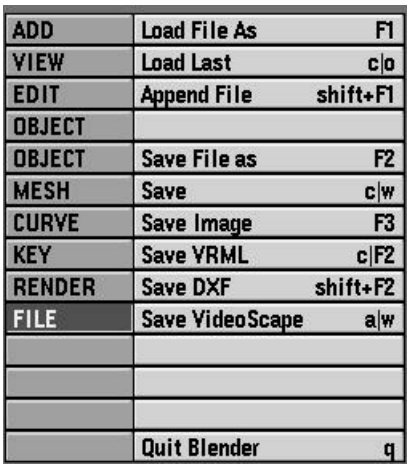
A Blender screen with four 3D windows.

Of course, splitting windows works on vertical window borders, too. In this example, I have created three additional 3D Windows by splitting the default 3D Window three times. Each window is now independent from the others. This way, you can create the traditional 4-view window (top, front, right and camera) in Blender. More about this below in 'the 3D Window'.

Press Ctrl ↑ to make the current window full screen. Press it again to restore the previous view.

Removing windows is very much like splitting them; with the mouse pointer over a window border, right-click. Confirm the requester. Like splitting, the direction from which you approached the border (or rather, which window has the focus before joining) determines which window 'survives' the joining.

Joining two windows.



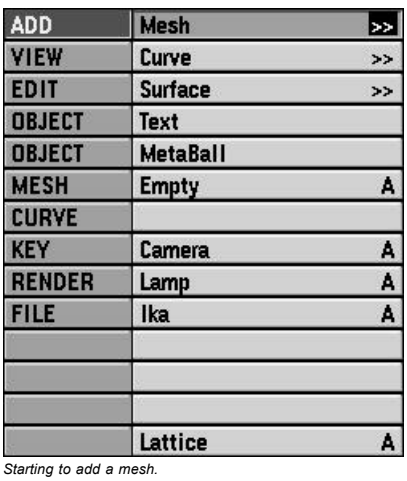
The toolbox.

The Toolbox - Adding a Sphere

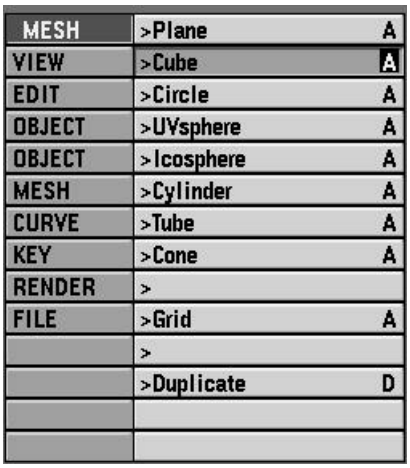
Almost every Blender function can be accessed by using the keyboard or the mouse. The Toolbox contains most of Blender's functions. You can call up the toolbox either by clicking on the toolbox icon in the top-right of the Blender screen, or by pressing .

This is how the toolbox works: The dark gray buttons on the left are function categories; moving your mouse pointer over them will change the button list on the right. Move your mouse pointer to the right and click on a function button to activate that function. Each button also shows the corresponding keyboard shortcut. In the shortcut notation, c|<button> means holding down Ctrl and pressing the listed button. Similarly, a|<button> uses the Alt key as a modifier.

Clicking some buttons will reveal a third layer of functions. For example, if you wish to add a sphere to your scene, first select 'Add' from the categories list in the Toolbox. Next, left-click on the button labeled 'Mesh'.



Starting to add a mesh.



Adding a cube.

The button list on the right now changes to offer you a choice between the different primitives that Blender knows. left-click on 'UVsphere' to add a sphere to your scene.

When adding objects like a sphere, Blender wants to know which resolution you require. A sphere with a high resolution looks smoother than a low-resolution sphere, but it also requires more memory and is slower to manipulate and render.

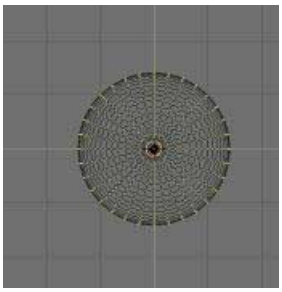
These buttons work like the Icon slider you saw earlier: left-click on the 'Segments' button and drag left or right to increase or decrease the value. Also, you can click on either side of the button to change the value step by step.

Parameter for a sphere.

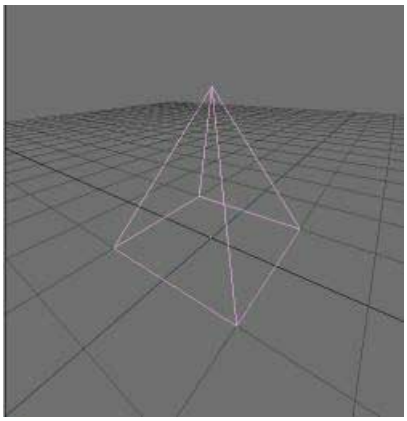
Editing a parameter.

Yet another way to change the value is to hold down Shift and left-click the 'Segments' button. This will change the button into a text input. You can now type a value into the field directly. Press Enter when you have entered the correct value.

Finally, click on the OK button or press Enter to set the value of the 'Segments' variable.


A mesh sphere in edit mode.

In the case of the sphere, you will need to set a second parameter, 'Rings'. After doing this, a sphere will show up at the location of your 3D Cursor. Instead of showing up in pink or black, the sphere is drawn with small yellow dots. This mode is described in the paragraph 'Edit Mode'.

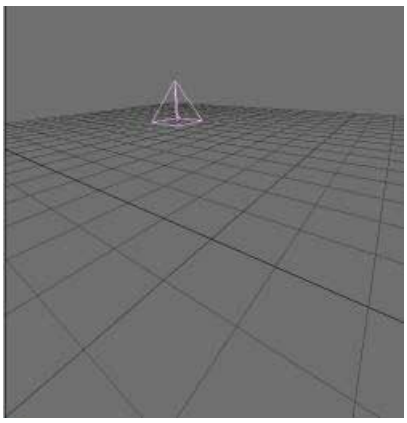


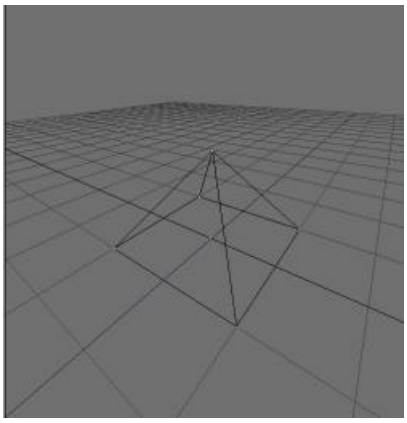
About Edit mode

When you are working in 3D space, you can basically perform two types of operations: operations that affect an object as a whole and operations that affect the geometry of an object, but do not affect the object's global properties An example of the former is moving an object to another location. An example of the latter is shaping a nose on a face.

In Blender, you have to indicate which of the two you want to use. This is where edit mode comes in.

This is an example of an object that is not in edit mode. Operations like translating (G), rotating (R) or scaling (S) affect the object as a whole. For example, translating moves the entire object somewhere else.





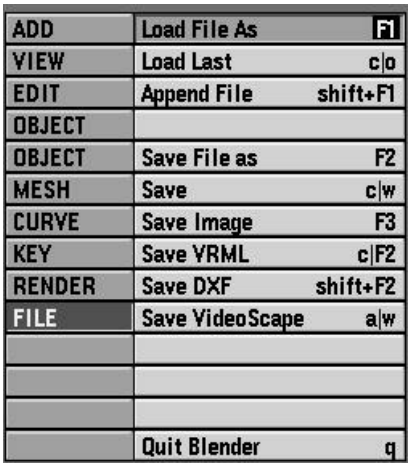
In contrast, when you select Tab you enter edit mode. The object is redrawn and the separate points of which is consists are drawn. (These points are known as vertices, by the way). If you select a vertex by right-clicking on it, you can then translate only this point, while leaving the others unaffected. In this way, you change an object's shape.

If you select more than one vertex, you can also rotate or scale them. In this case, the vertices are rotated or scaled around their median point.

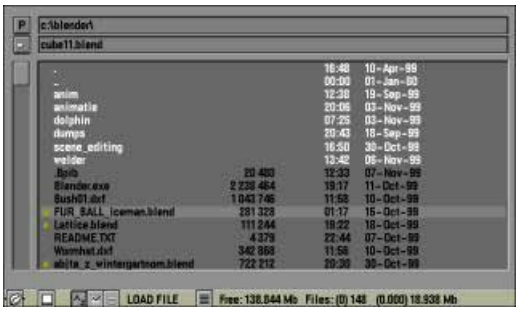
Loading and saving your work

By now you have probably created a Blender scene which you might want to save to disk, or you would like to take a look at the .blend files that we have included on the CD-Rom that comes with this book. Blender has a lot of file loading and saving options - even to the point that you can use Blender as a file manager.

In this part I will briefly describe the basic file loading and saving mechanisms. As always, these functions can be accessed either from the Toolbox or by using a hotkey.



Accessing the file functions in the toolbox.



The Load File window.

Loading a Blender file

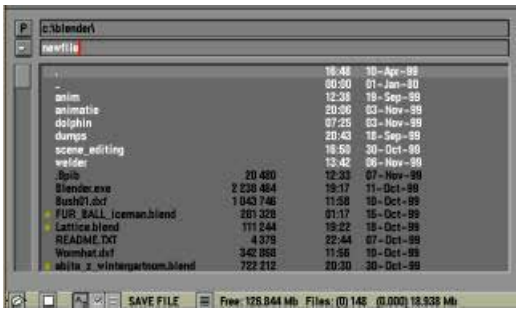
Call up the File Window by pressing F1. In this window, files are shown in black and directories in white text. The .blend files are also indicated with a small yellow square in front of them.

The first method to load a file is by left-clicking on a filename. This will copy the name to the filename box at the top of the window (the second textbox from the top). Pressing Enter will then actually load the file. Alternatively, you can also middle-click on a file which will cause it to be loaded immediately.

Navigating to the parent directory is done by clicking on the '..' directory in the list, by clicking on the 'P' button at the top of the window or by pressing P. Sometimes you may want to refresh the file list; for example when another program has been writing or changing files in the current directory. In that case, click in the '.' directory or press the dot key.

Saving a Blender file

Open the File Window by pressing F2. This window works in the same way as above. Additionally, you can now enter a new filename in the filename box. To do this, left click in the filename box and enter a new name.



The Save File window.

Use the keys numpad + and numpad - to automatically increase or decrease the versionnumber of a file before loading or saving