What are GUI elements?

In computer programming, a GUI element (or widget) is an interface element that a computer user interacts with, such as a **window** or a **text box**. The defining characteristic of a widget is to provide a single interaction point for the direct manipulation of a given kind of data. Widgets are visual basic building blocks which combined in an application hold all the data processed by the application and the available interactions on this data.

Common generic GUI elements

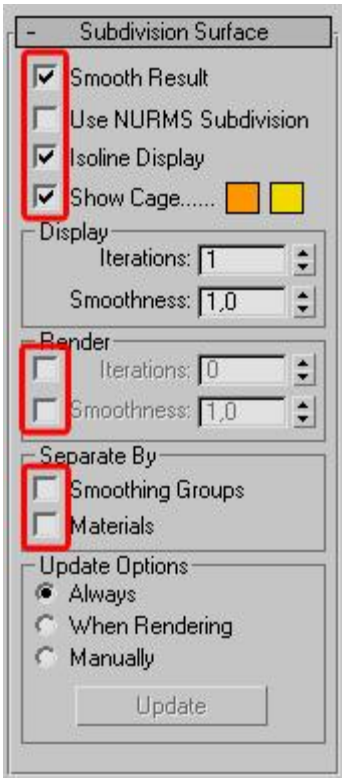
Button / toggle button / command button / push button

In computing, a **button** or **toggle button** (sometimes known as a **command button** or **push button**) is a GUI element that provides the user a simple way to trigger an event, like searching for a query at a search engine, or to interact with dialog boxes, like confirming an action.

The toggle buttons in 3DS MAX 2008.

Check box / checkbox / tickbox / tick box

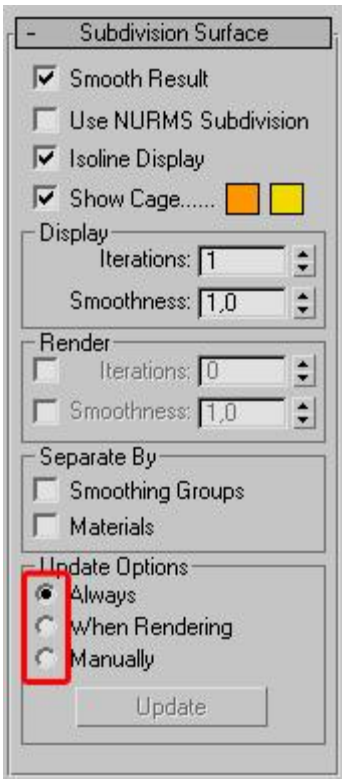
In computing, a **check box** (**checkbox**, **tickbox**, or **tick box**) is a GUI element that permits the user to make multiple selections from a number of options. Normally, check boxes are shown on the screen as a square box that can contain white space (for false) or a tick mark (as pictured) or **X** (for true). Adjacent to the check box is normally shown a caption describing the meaning of the check box. Inverting the state of a check box is done by clicking the mouse on the box, or the caption, or by using a keyboard shortcut.



The check boxes in 3DS MAX 2008.

Radio button / option button

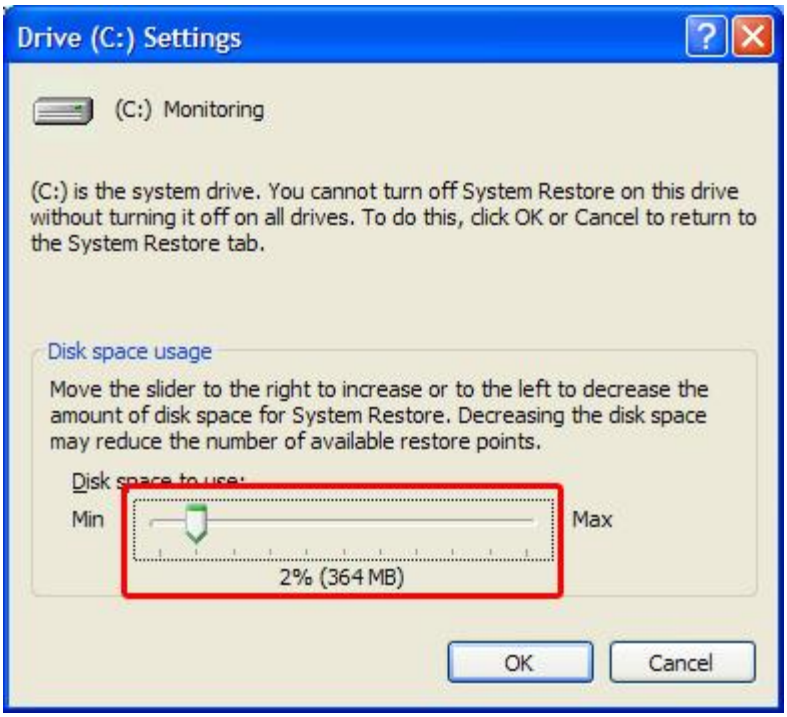
A **radio button** or **option button** (improperly referenced as "radial button") is a type of GUI element that allows the user to choose one of a predefined set of options. Radio buttons are arranged in groups of two or more and displayed on screen as, for example, a list of circular holes that can contain white space (for unselected) or a dot (for selected). Adjacent to each radio button is normally shown a caption describing the choice that this radio button represents. When the user selects a radio button, any previously selected radio button in the same group becomes deselected. Selecting a radio button is done by clicking the mouse on the button, or the caption, or by using a keyboard shortcut.



The radio buttons in 3DS MAX 2008.

Slider

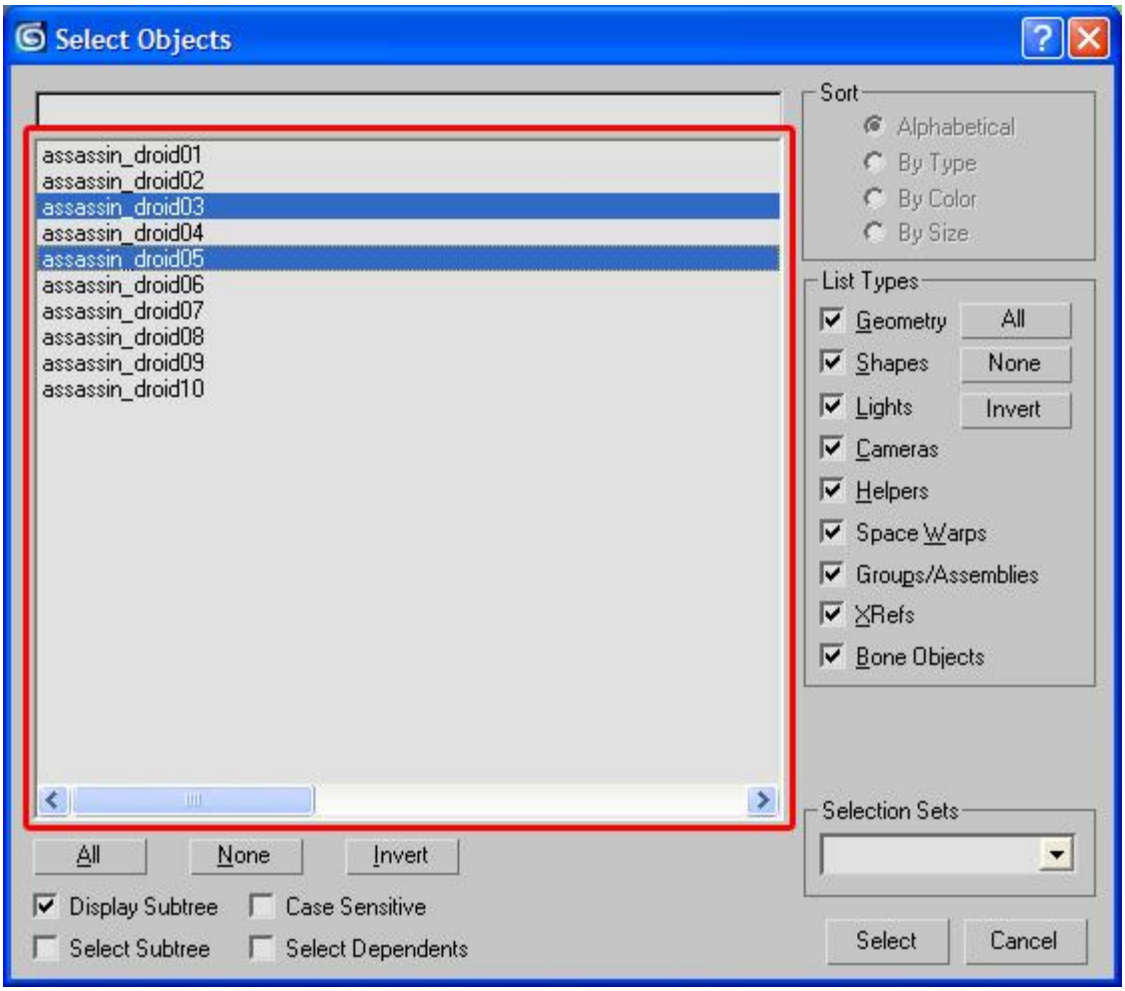
A **slider** is a GUI element in a GUI with which a user may set a value by moving an indicator, usually in a horizontal fashion. In some cases the user may also click on a point on the slider to change the setting. It is different from a Scrollbar in that it is typically used to adjust a value without changing the format of the display or the other information on the screen.



The slider in Microsoft System Restore.

List box

A **list box** is a GUI element that allows the user to select one or more items from a list contained within a static, multiple line text box. The user clicks inside the box on an item to select it, holding the Shift or Control (Command for Mac users) key allows him or her to make multiple selections.



The list box in 3DS MAX 9.

List Control

A **list control** is a variation of a List Box and consists of using one of four or more views to display a list of items. The list is typically equipped with icons that indicate what view is displaying. There are commonly five views used to display items:

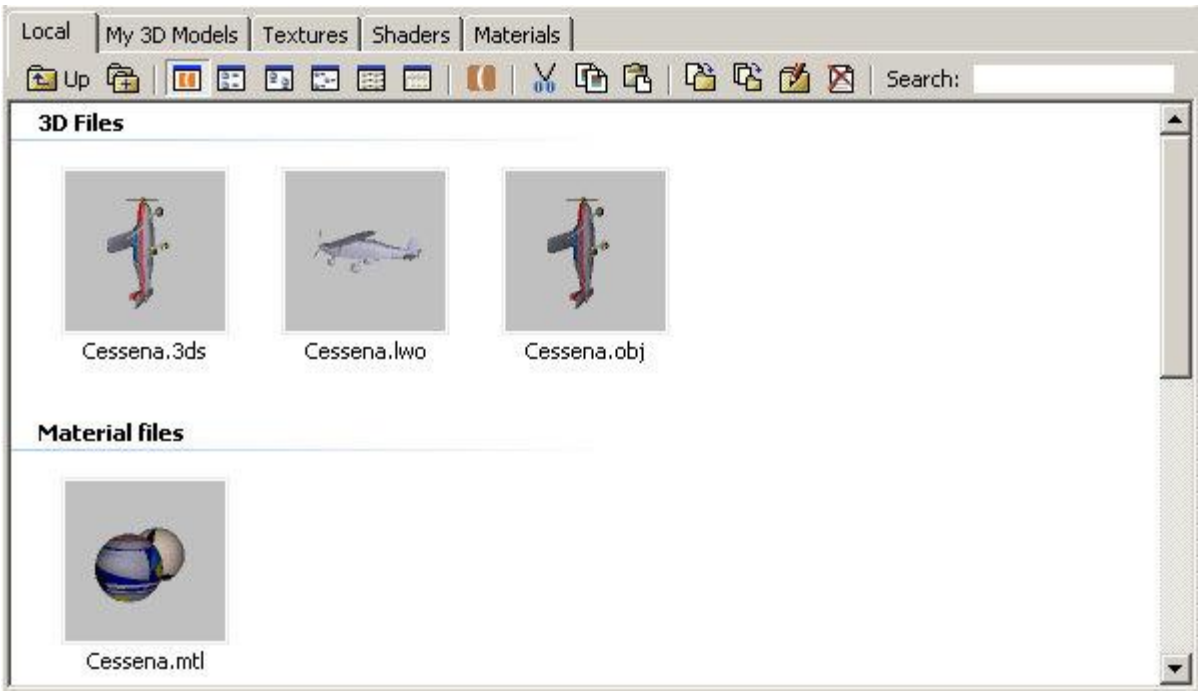
• Thumbnails: List Control displays small (96x96 pixels in WinXP) previews of listed items, e.g. a smaller version of a picture file.

• Icons: The control displays a list of items using icons with a 32x32 pixels size of icons. This is the preferred view when the main idea consists of giving an overview of the items.

• Small Icons: Like the other next two views, it uses 16x16 pixel icons to display a simplified list of the items. Once more, no detail is provided about the items of this list. The list is organized in disparate columns with some on top of others. If the list is supposed to be sorted, the alphabetical arrangement is organized from left to right.

• List: This list, using small icons, is also organized in columns; this time, the columns are arranged so that the first column gets filled before starting the second. If the list is sorted, the sorting is arranged in a top-down manner.

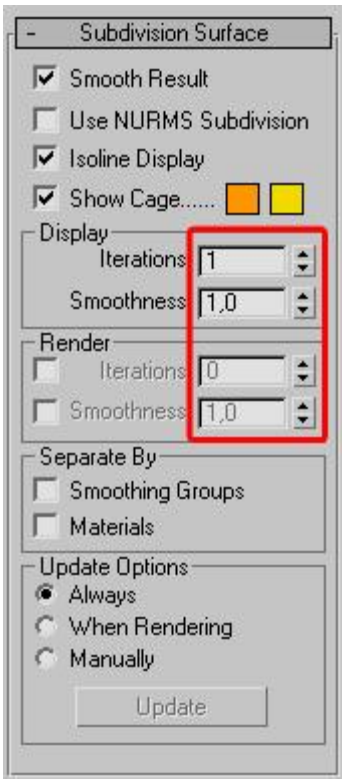
• Report or Details: This view displays arranged columns of items and provides as many details as the list developer had arranged it.



List Control in Deep Exploration 3

Spinner / Spin button

A **spinner** is a GUI element in a GUI, typically oriented vertically, with which a user may adjust a value in an adjoining text box by either clicking on an up or down arrow, or by holding the arrow down, causing the value in the text box to increase (if the up arrow is held down) or decrease (if the down arrow is held). In most cases as the button is held down, the spinner increases the speed at which the value of the spinner is increased or decreased, up to the maximum (or minimum) allowed value. Usually, the value of the spinner is displayed in a text box next to the spinner, allowing the user to use the spinner to adjust the value, or to type the value into the text box.



The spinners in 3DS MAX 2008.

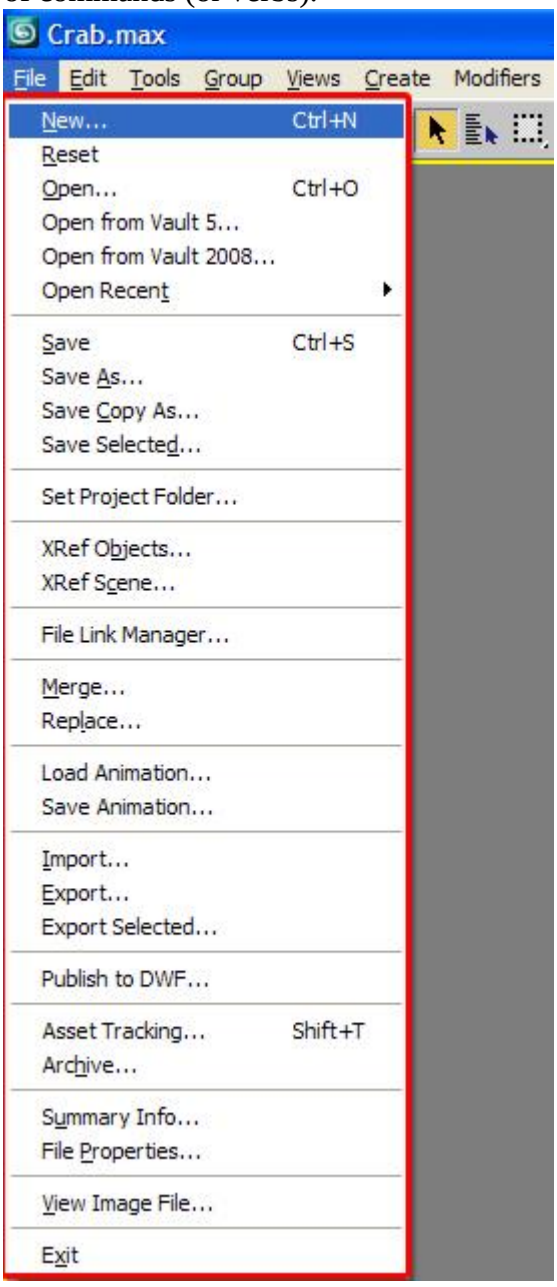
Combo Box / Drop-down list

A **combo box** or a **drop-down list** is a user interface control GUI element similar to a list box which allows the user to choose one value from a list. When a drop-down list is inactive it displays a single value. When activated it displays (drops down) a list of values, from which the user may select one. When the user selects a new value the control reverts to its inactive state, displaying the selected value.

The drop-down list in 3DS MAX 2008.

Menu

In computing and telecommunications, a **menu** is a list of commands presented to an operator by a computer or communications system. They may be thought of as shortcuts to frequently used commands that avoid the operator having to have a detailed knowledge or recall of syntax. A menu is used in contrast to a command line interface where instructions to the computer are given in the form of commands (or verbs).

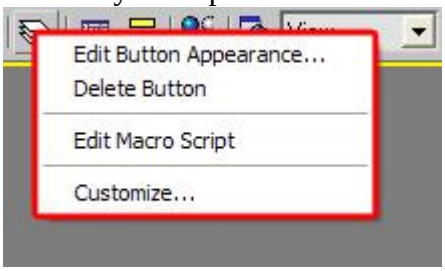


The menu in 3DS MAX 2008.

Context menu / contextual menu / shortcut menu

The term **context menu** (or **contextual menu**, **shortcut menu**) is commonly used for menus which pop up when clicking an item in a GUI, offering a list of options which vary depending on the context of the action, the application running, and the item selected. These menus are typically

invoked with a secondary mouse button (usually the right-hand button) on a computer running an operating system such as Microsoft Windows, Mac OS X or Unix running the X Window System. Computers with a single-button mouse may use a keyboard-click combination, as with a Control-click in the Macintosh OS. PC keyboards with Microsoft Windows keys also have an additional menu key that opens context menus in MS Windows applications.



The context menu in 3DS MAX 2008.

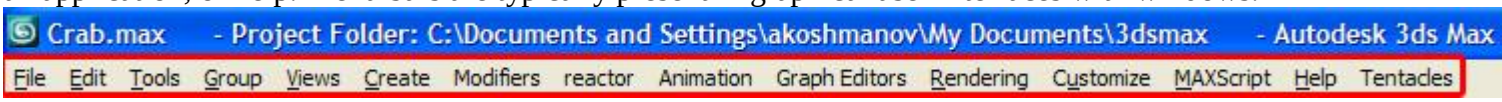
Pie menu / radial menu / marking menu

In computer interface design, a **pie menu** (sometimes called **radial menu** or **marking menu**) is a circular popup menu where selection depends on direction. A pie menu is made of several "pie slices" around an inactive center and works best with stylus input, and well with a mouse. Pie menus work well with keyboard acceleration, particularly four and eight item menus, on the cursor keys and the number pad.

The pie menu in Quintessential Player.

Menu bar

A **menu bar** is a region where computer menus are housed. Its purpose is to house window- or application-specific menus which provide access to such functions as opening files, interacting with an application, or help. Menu bars are typically present in graphical user interfaces with windows.



The menu bar in 3DS MAX 2008.

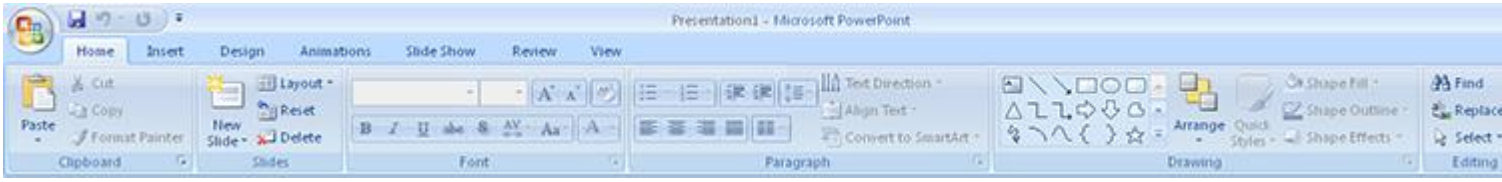
Toolbar

In a GUI on a computer monitor a **toolbar** is a row, column, or block of onscreen buttons or icons that, when clicked, activate certain functions of the program. Earlier forms of toolbars were defined by the programmer and had set functions. Most modern programs and operating systems however, allow the end user to modify and customize toolbars to fit their personal needs. A prominent example of a customizable toolbar is the Microsoft Windows Taskbar; functions of which range from an expandable programs menu, task listing, system tray and clock.

The Google toolbar in Mozilla Firefox.

Ribbon bar

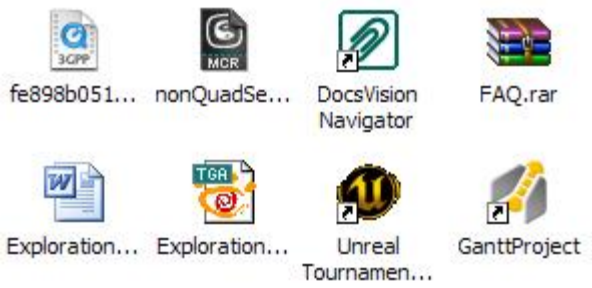
A **ribbon** is a GUI element composed of a strip across the top of the window that exposes all functions the program can perform in a single place, with additional ribbons appearing based on the context of the data.



The ribbon in Microsoft PowerPoint 2007.

Icon

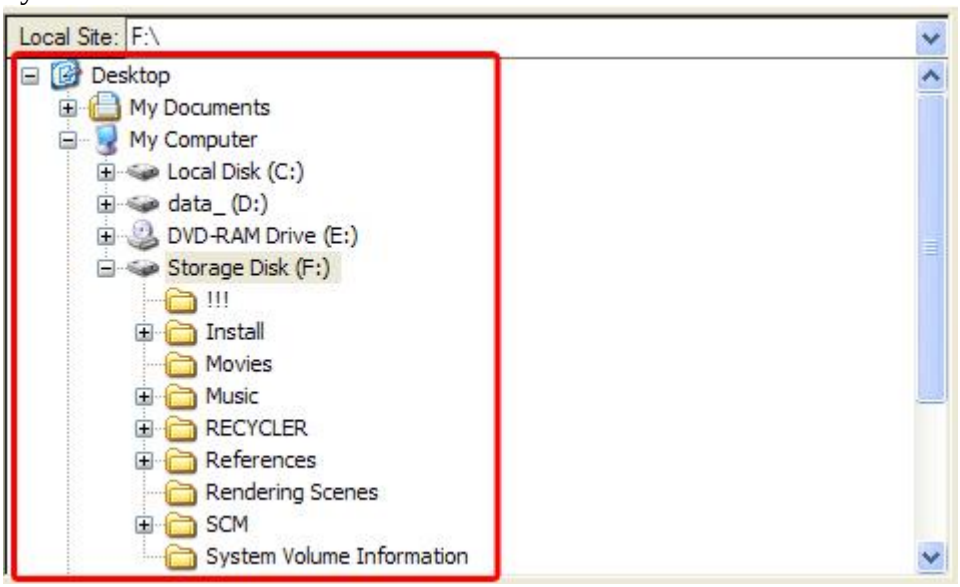
On computer displays, a computer **icon** is a small pictogram. Icons have been used to supplement the normal alphanumerics of the computer. Modern computers now can handle bitmapped graphics on the display terminal, so the icons are widely used to assist users.



The desktop icons in Microsoft Windows XP.

Tree view

A **tree view** or an outline view is a GUI element that presents a hierarchical view of information. Each item (often called a branch or a node) can have a number of subitems. This is often visualized by indentation in a list.

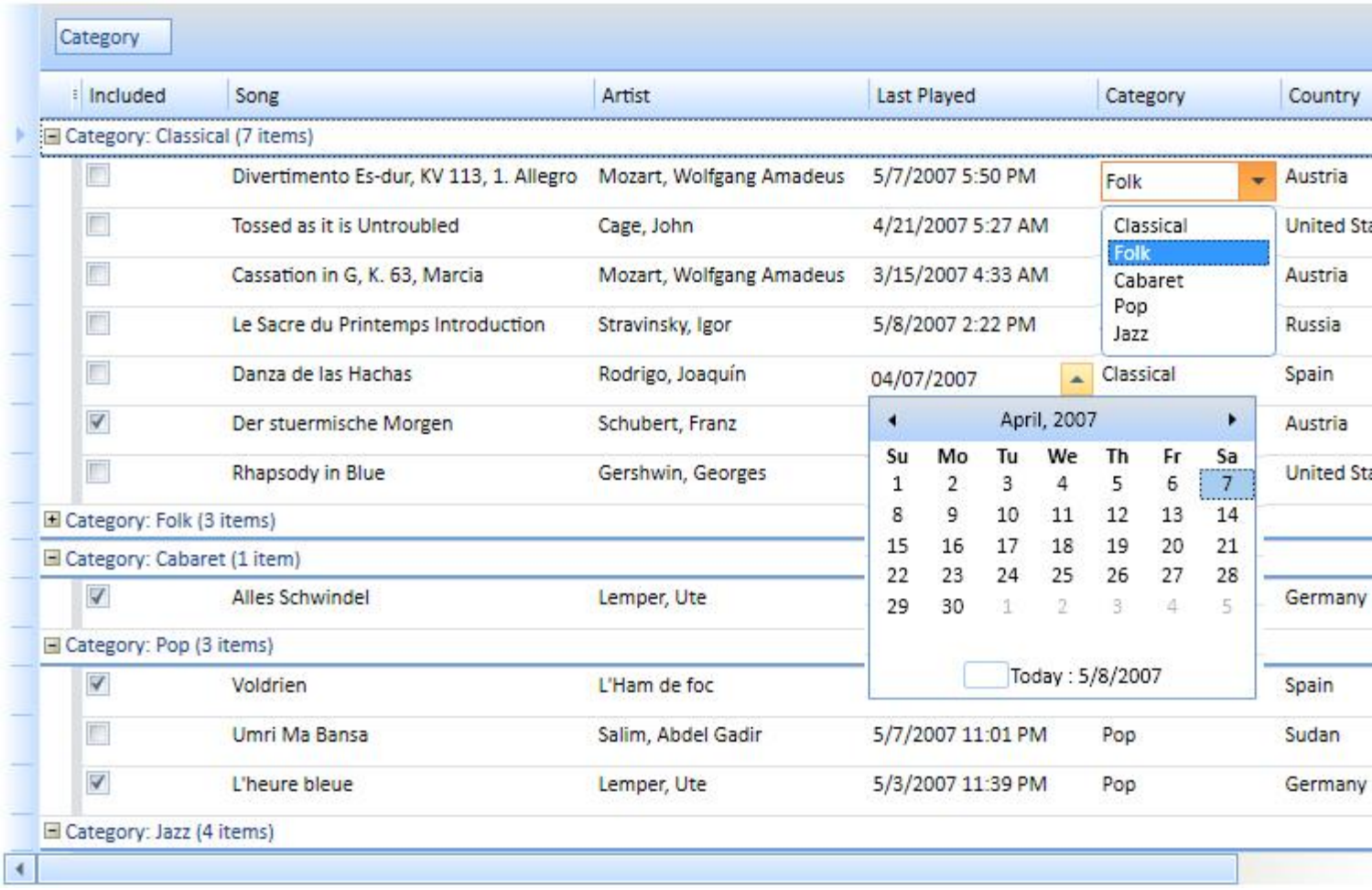


The tree view in FileZilla.

Grid view

A **grid view** or a datagrid is a GUI element that presents a tabular view of data. A typical grid view also supports some or all of the following:

- Clicking a column header to change the sort order of the grid
- Dragging column headers to change their size and their order
- In-place editing of viewed data
- Row and column separators, and alternating row background colors



The grid view built with Windows Presentation Foundation.

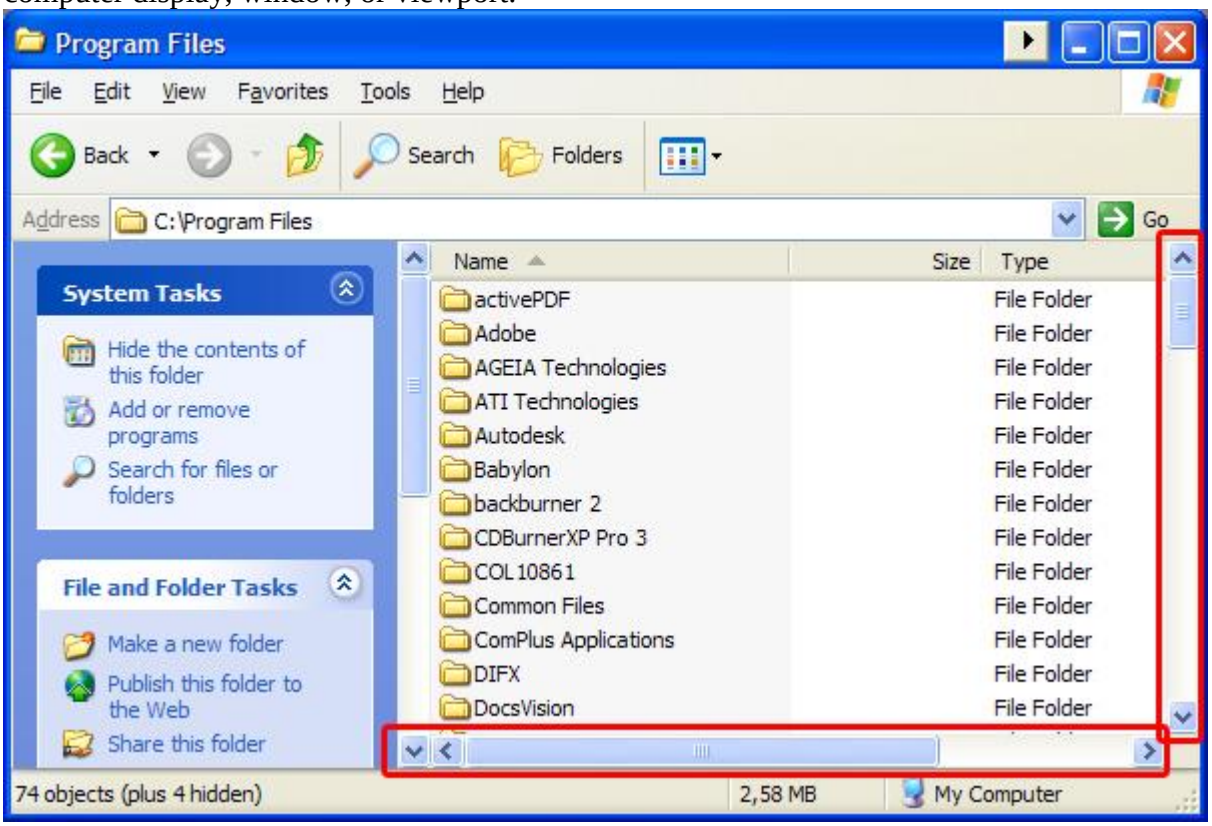
Tab

In GUIs, a **tab** is a navigational GUI element for switching between sets of controls or documents. It is traditionally designed as a text label within a rectangular box with its top borders rounded. Activating a tab (usually by a mouse click) makes its associated content visible and the tab itself usually becomes highlighted to distinguish it from other inactive tabs. Only one tab can be active at a time.

The tabs in Microsoft Internet Explorer 7.

Scrollbar

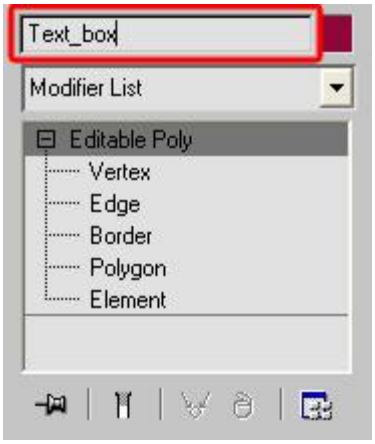
A **scrollbar** is a GUI element in a GUI with which continuous text, pictures or anything else can be scrolled including time in video applications, i.e., viewed even if it does not fit into the space in a computer display, window, or viewport.



The vertical and horizontal scrollbars in Microsoft Windows XP.

Edit box / Text entry box

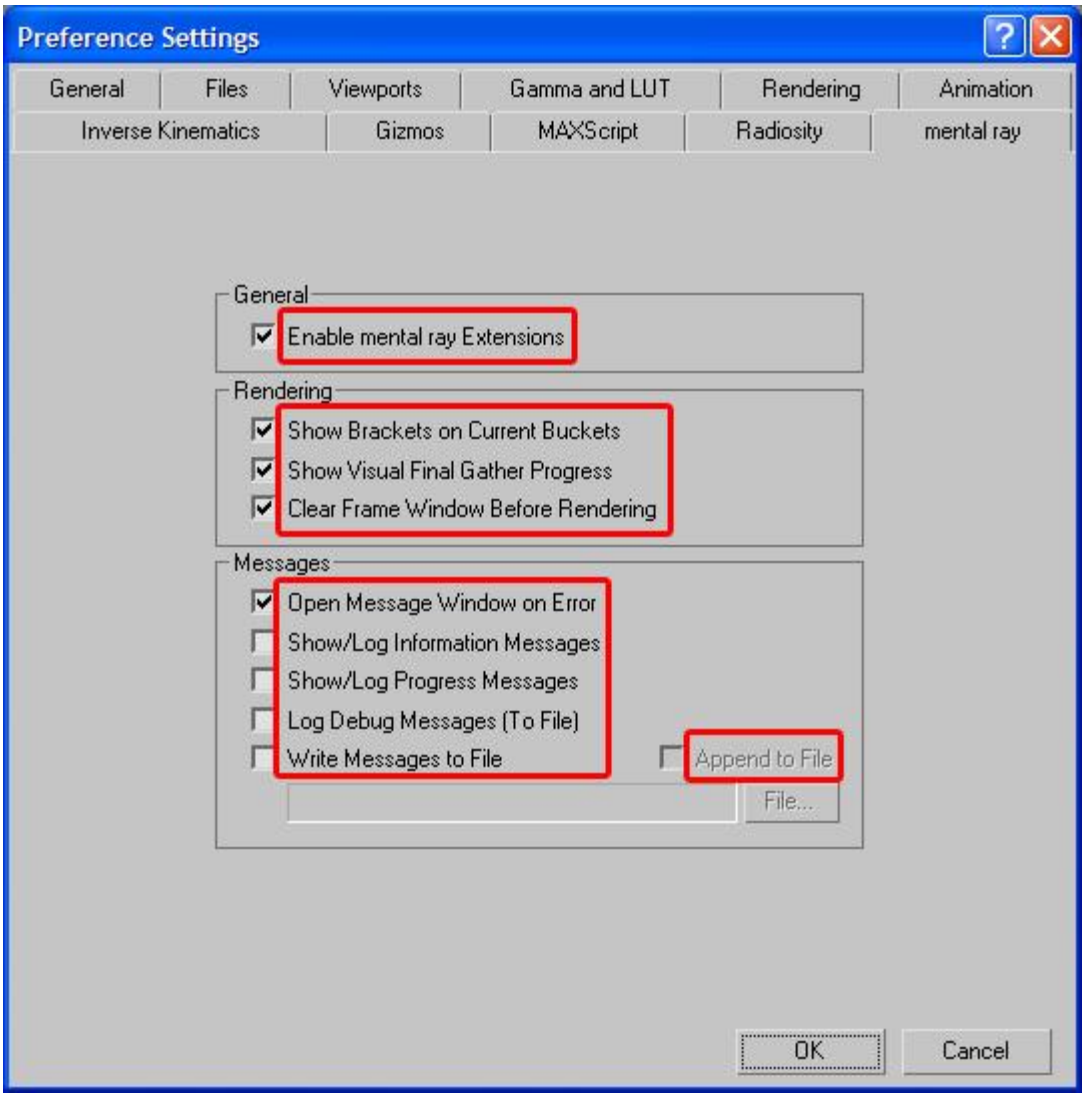
An **Edit box** or a **text entry box** is a common element of GUI of computer programs, as well as the corresponding type of GUI element used when programming GUIs. A text box's purpose is to allow the user to input text information to be used by the program. User-interface guidelines recommend a single-line text box when only one line of input is required, and a multi-line textbox only if more than one line of input may be required. Non-editable text boxes can serve the purpose of simply displaying text.



The text box in 3DS MAX 2008.

Label / Static text box

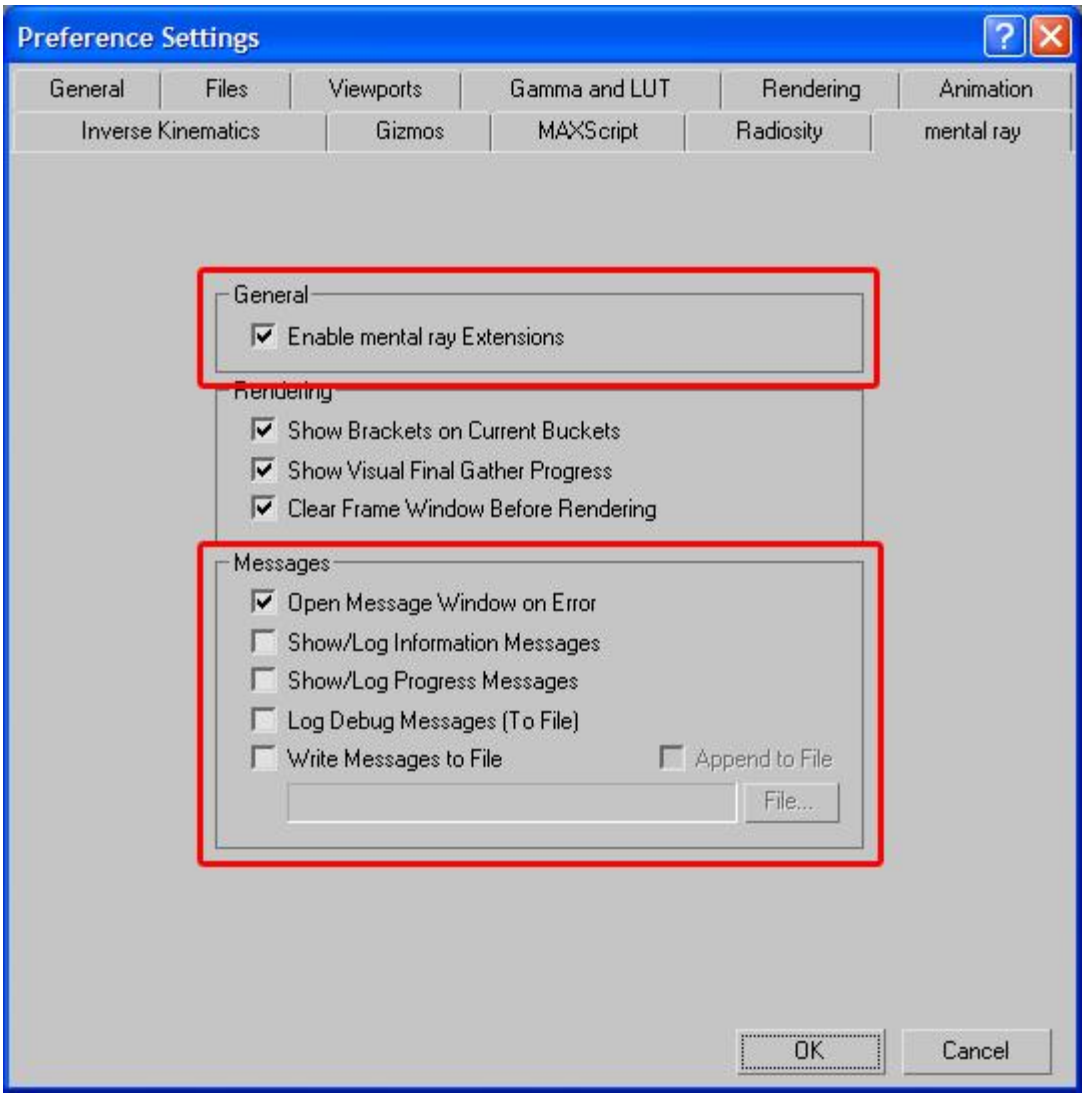
A **label** or a **static text box** is a user interface control which displays text on a form. It is usually a static control; having no interactivity. A label is generally used to identify a nearby text box or other GUI element. Some labels can respond to events such as mouse clicks, allowing the text of the label to be copied, but this is not standard user-interface practice.



The labels in 3DS MAX 2008.

Group box

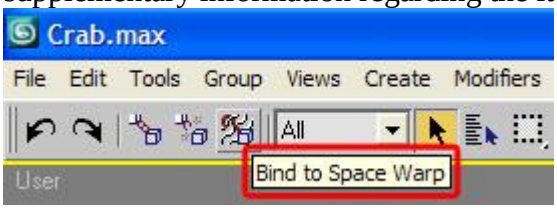
A **group box** is an object that is typically used to serve as a border for other controls whose belonging to the same group needs to be explicitly shown to the user.



The group boxes in 3DS MAX 2008.

Tooltip

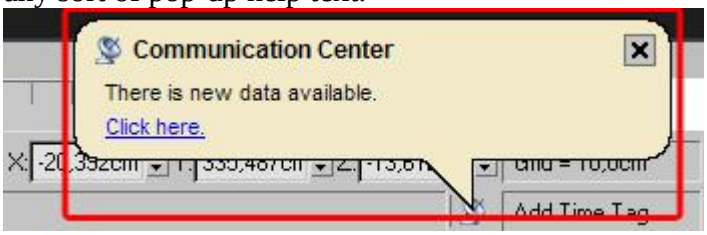
A **tooltip** is a common GUI element. It is used in conjunction with a cursor, usually a mouse pointer. The user hovers the cursor over an item, without clicking it, and a small box appears with supplementary information regarding the item being hovered over.



The tooltip in 3DS MAX 2008.

Baloon help

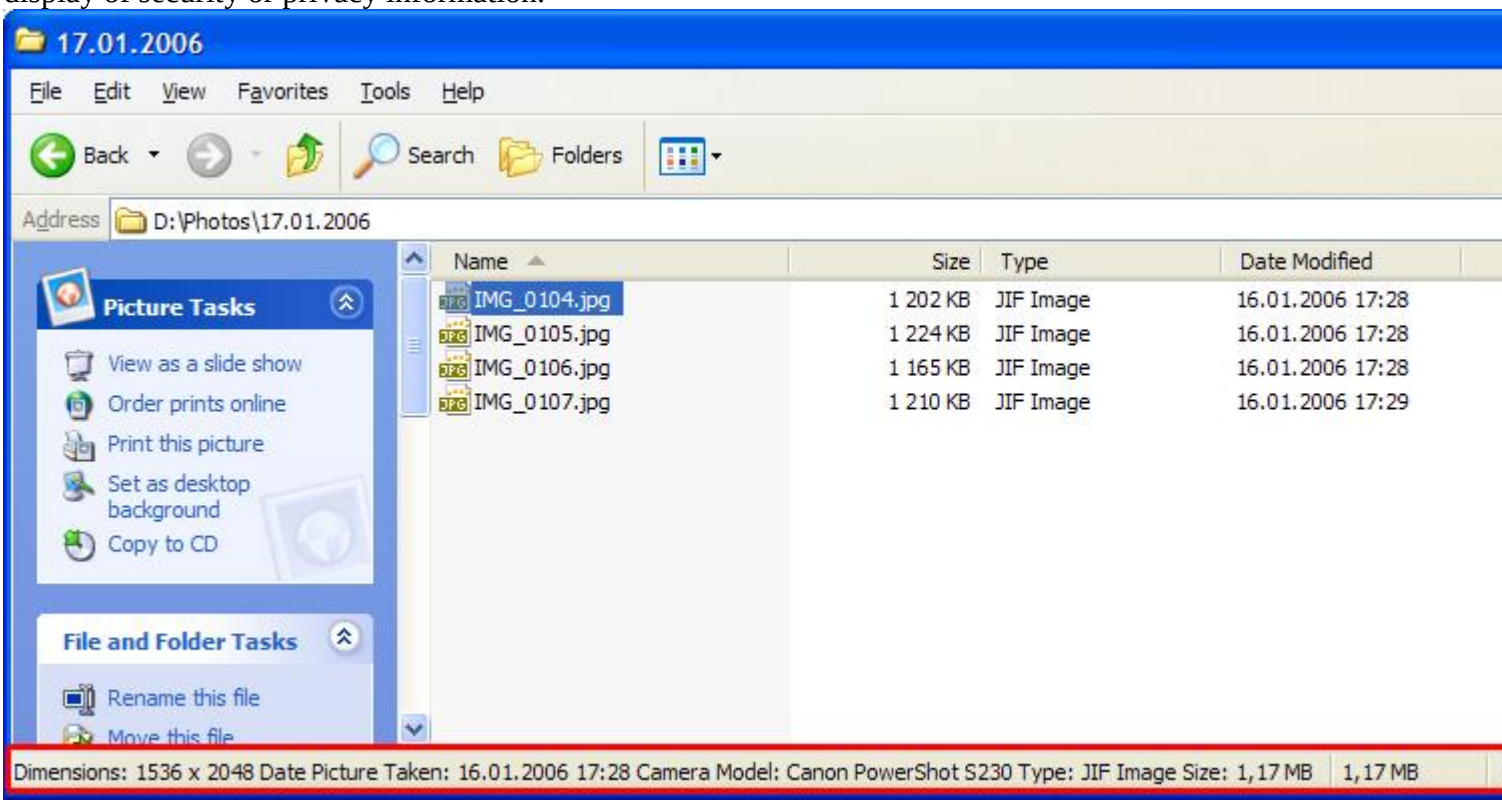
Balloon help was a tooltips-type help system introduced by Apple Computer in their System 7 operating system release. The name referred to the way the help text was displayed, in "balloons", like those containing the words in a comic strip. The name has since been used by many to refer to any sort of pop-up help text.



The baloon help in 3DS MAX 9.

Status bar

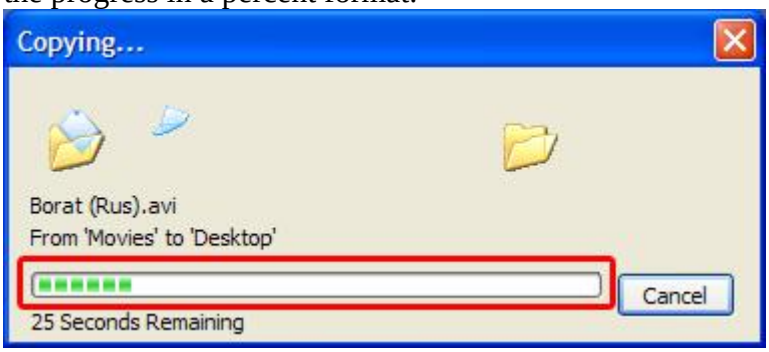
A **status bar**, similar to a status line, is an information area typically found at the bottom of windows in a GUI. A status bar is sometimes divided into sections, each of which shows different information. Its job is primarily to display information about the current state of its window, although some status bars have extra functionality. For example, many web browsers have clickable sections that pop up a display of security or privacy information.



The status bar in Microsoft Windows XP.

Progress bar

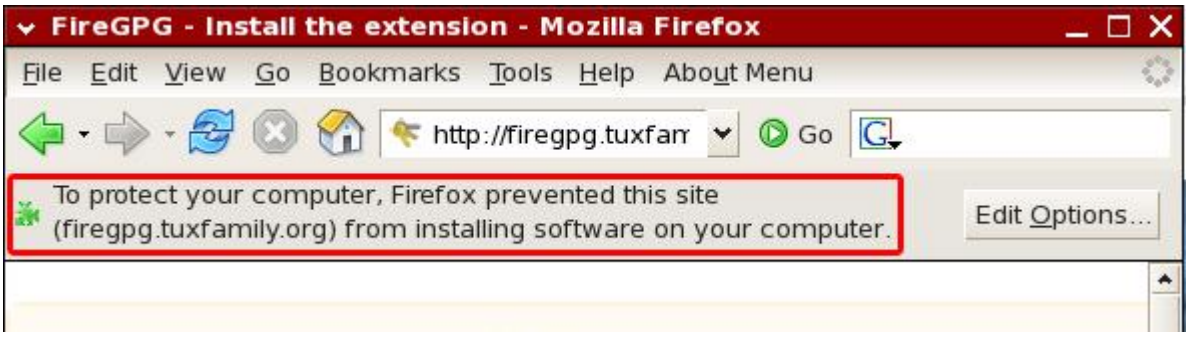
A **progress bar** is a component in a graphical user interface used to convey the progress of a task, such as a download or file transfer. Often, the graphic is accompanied by a textual representation of the progress in a percent format.



The progress bar in Microsoft Windows XP.

Infobar

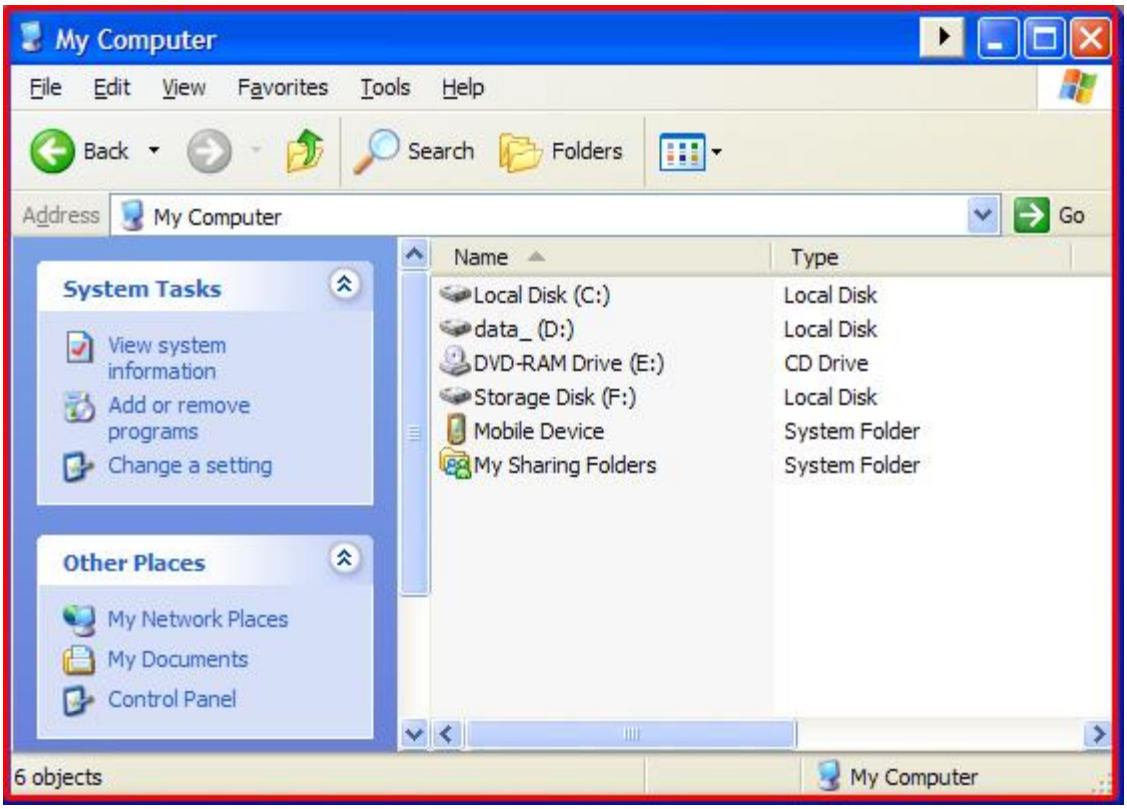
An **infobar** is a GUI element used by Microsoft Internet Explorer, Mozilla Firefox and other programs to display non-critical information to a user. An infobar is increasingly seen as preferable to dialog boxes because it does not interrupt the user's activities, but rather allows the user to read extra information on their own time.



The infobar in Mozilla Firefox.

Window

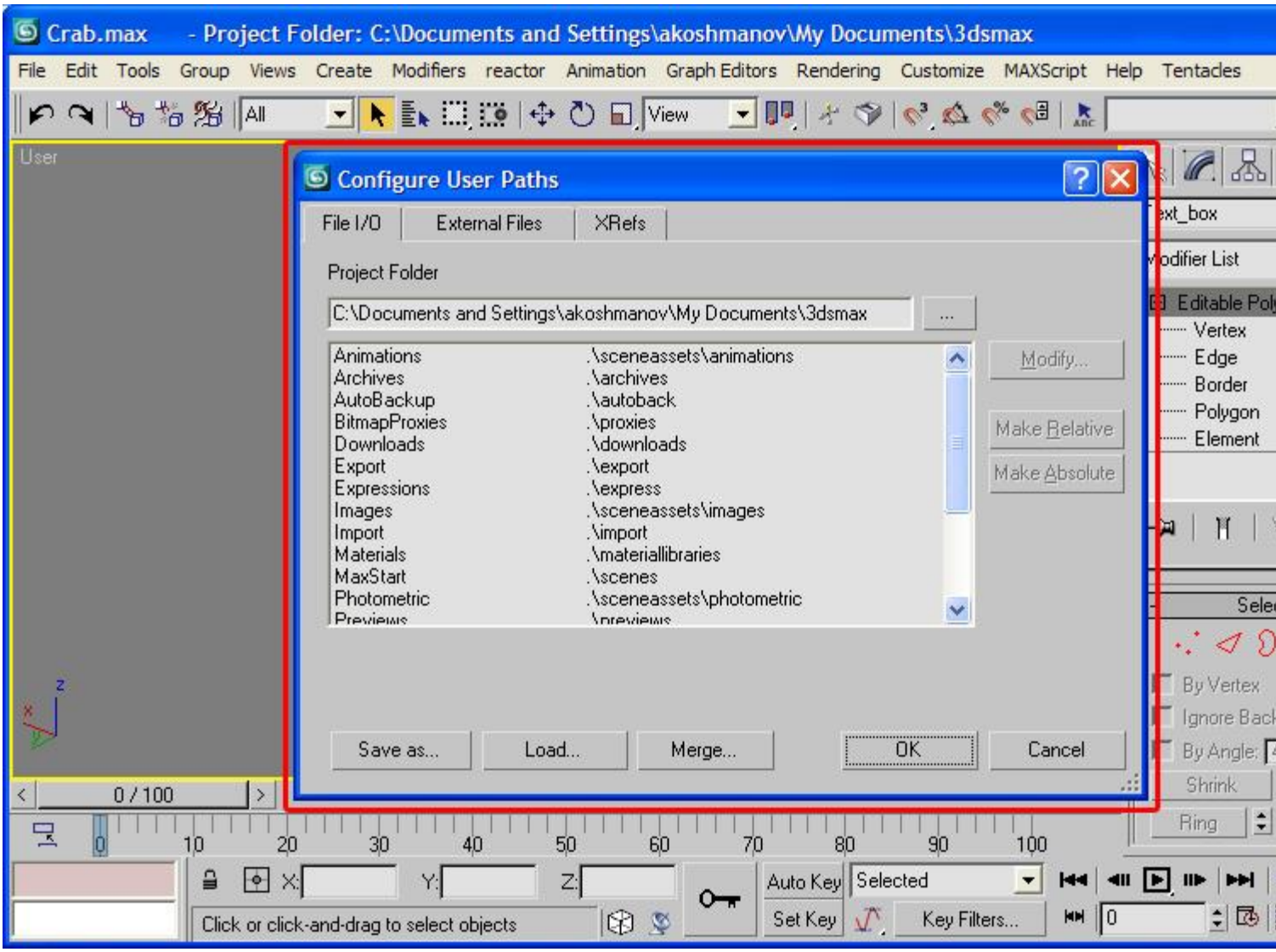
In computing, a **window** is a visual area, usually rectangular in shape, containing some kind of user interface, displaying the output of and allowing input for one of a number of simultaneously running computer processes. Windows are primarily associated with graphical displays, where they can be manipulated with a pointer. A GUI that uses windows as one of its main metaphors is called a windowing system.



The window in Microsoft Windows XP.

Modal window / modal dialog

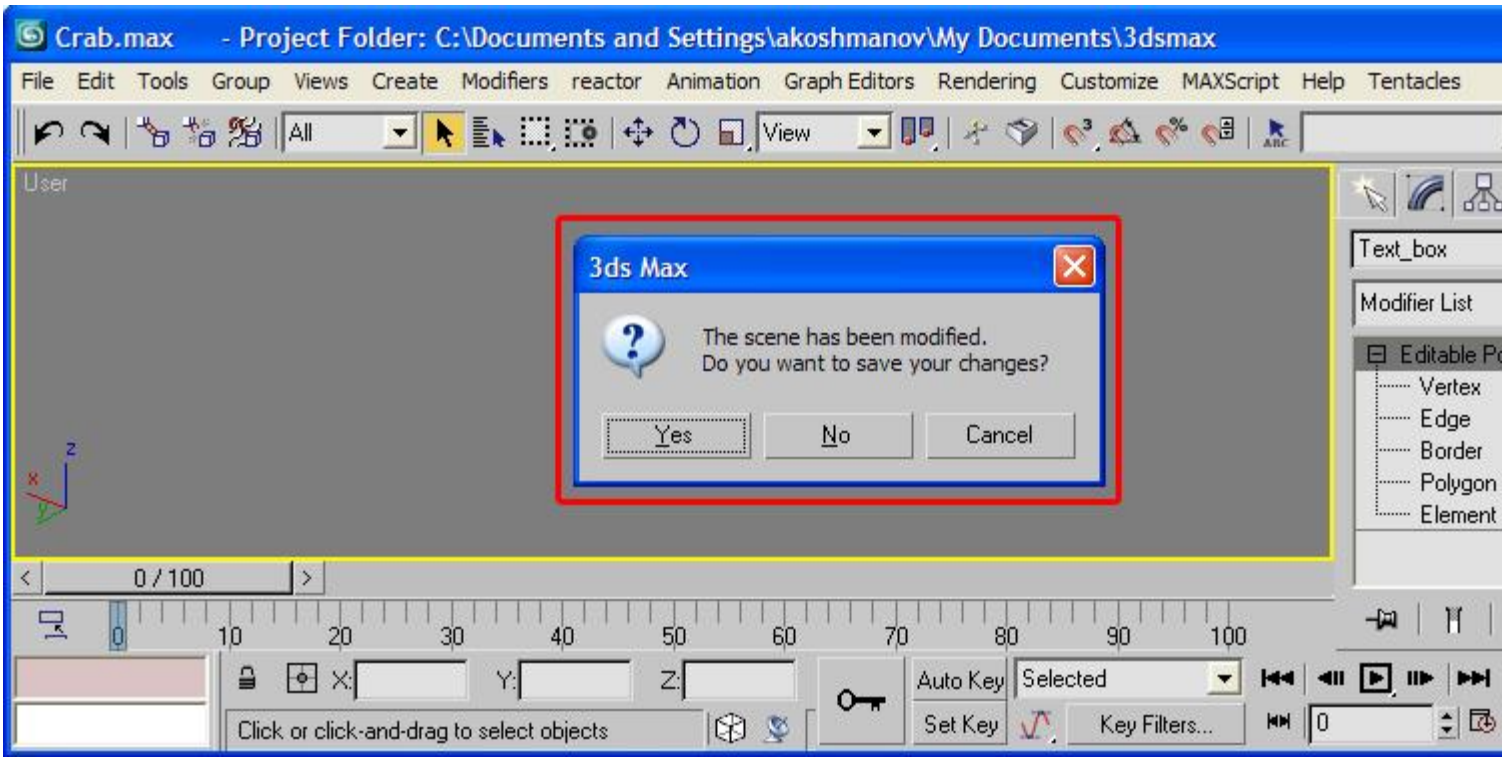
In user interface design, a **modal window** (often called **modal dialog** because the window is almost always used to display a dialog box) is a child window which requires the user to interact with it before they can return to operating the parent application. Modal windows are commonly used in GUI systems to command user awareness and to display emergency states.



The modal window in 3DS MAX 2008.

Dialog box / Message box

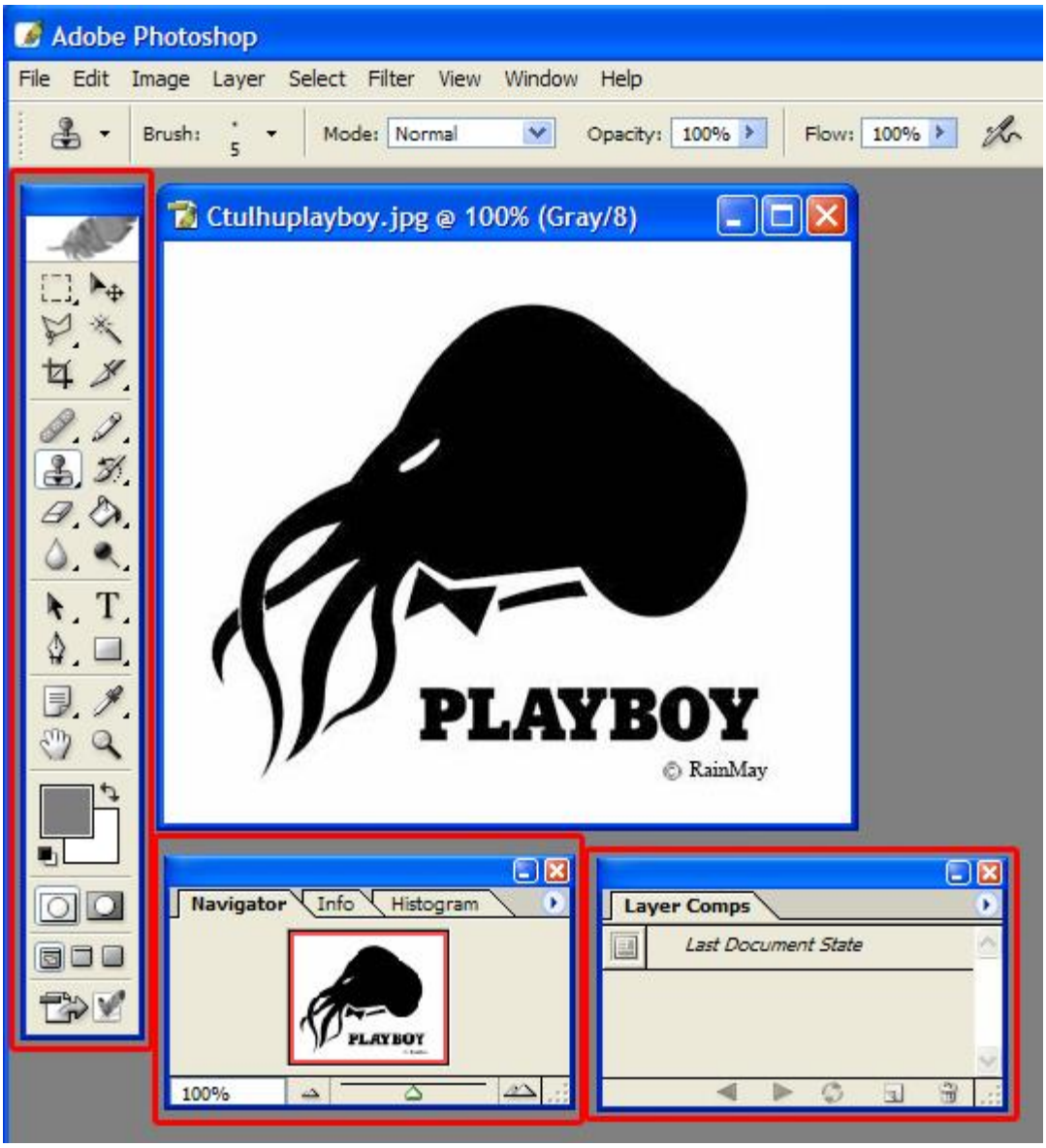
In a GUI, a **dialog box** is a special window, used in user interfaces to display information to the user, or to get a response if needed. They are so-called because they form a dialog between the computer and the user—either informing the user of something, or requesting input from the user, or both.



The dialog box in 3DS MAX 2008.

Palette window / utility window / floating palette

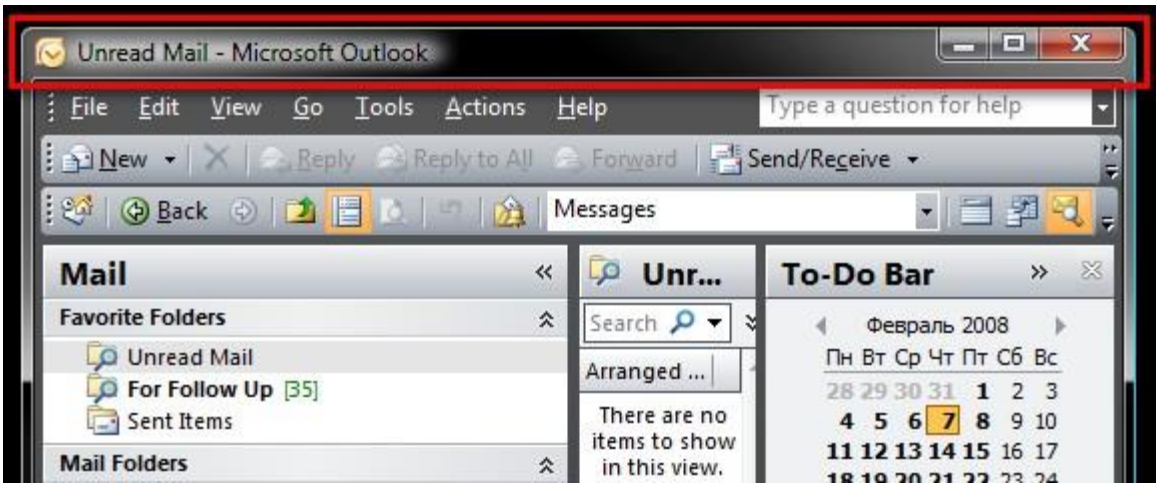
A **palette window**, also known as **utility window** or **floating palette**, is a type of computing window which floats on top of all regular windows and offers tools or information for the current application.



The palette windows in Adobe Photoshop CS.

Title Bar

In a GUI **Title Bar**, is a bar where end user can see program/process name. Sometimes Title Bar can also contain additional information (for example Outlook shows currently selected folder).



The Title Bar in Microsoft Outlook 2007.

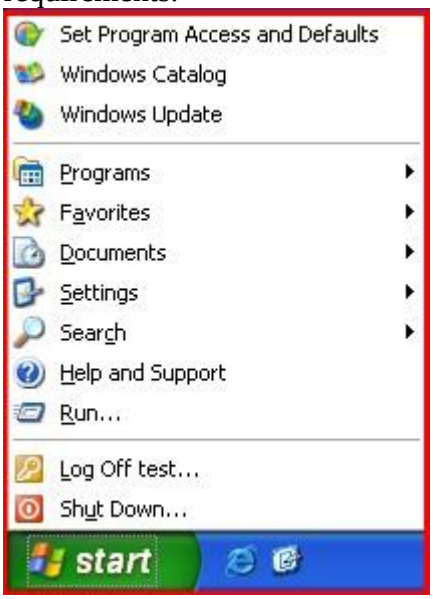
System Tray (Microsoft)

In Microsoft Windows **System Tray**, is an information area where end user can see time/date, icons for particular processes and system messages.

The System tray in Microsoft Windows XP.

Start Menu (Microsoft)

In Microsoft Windows **Start Menu**, is a menu which is always available to execute almost all installed programs and applications. Also end user can access from it such things like: system tools, favorites, printers and many more. The look and content of Start Menu depends on end user requirements.



The Start Menu (Classic) in Microsoft Windows XP.