

Beginning GIMP

From Novice to Professional,
Second Edition



Akkana Peck

Beginning GIMP: From Novice to Professional, Second Edition

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To Dave.

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About the Author



AKKANA PECK is a freelance software developer and writer who has been working with open source software for over 20 years, and using GIMP for nearly half that time. Starting with a high school summer job writing image processing and data visualization routines for a cell biology lab, she has worked for a diverse collection of companies, including Netscape, Silicon Graphics, Los Alamos National Lab, and City of Hope. She has written software ranging from GIMP plug-ins to HTML editing, photo viewing to email clients, as well as penning articles and how-tos on

Linux, astronomy, and other topics for various publications and websites.

About a decade ago, her longstanding hobby of photography spawned an interest in digital imaging and creating photos for the web. Frustration with the existing Windows tools, combined with a switch to Linux as her primary platform, led to fiddling with the basics of GIMP. After a long period of resistance she was finally persuaded to go beyond basic photo cropping and resizing and try “that layer thing,” and the rest is history.

Akkana is a long-time member of the GIMP community and an occasional contributor to GIMP’s source code. She enjoys hiking, mountain biking, and astronomy, giving talks about all sorts of topics (especially GIMP), and filling up her hard drive with digital images that she can never bring herself to delete, mostly of scenes from local hiking trails and from travels in the desert southwest. She lives in San Jose, California, with her husband and a motley assortment of old computers.

About the Technical Reviewer



A native of Madrid, Spain, **GUILLERMO S. ROMERO**, while always technically oriented, became interested in art through building and painting scale kits as a child, and that has shaped his life ever since. He graduated from Universidad Politécnica de Madrid, with a degree in Telemática, a specialization of Ingeniería Técnica de Telecomunicaciones. While studying, he began to explore Linux, POV-Ray, GIMP, and Blender, mixing technology and art. This knowledge led to some freelance jobs in the form of articles for magazines and reviews for book publishers.

With a career mixing telecommunications jobs with others more focused in publishing and photography fields, he discovered that drawing with a pen can be learned, step by step, with the right people around providing guidance. His other hobbies are reading, playing in a black and white photography laboratory, walking, and swimming.

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Introduction

So you want to learn image editing!

Maybe you've been shooting lots of pictures with your digital camera and want to learn how to make them look great, or prepare them for the web.

Maybe you're interested in creating drawings or cartoons. Or you're already editing photos, but you want to do more... even learn some of the theory behind imaging.

In any case, you've been hearing about GIMP—the GNU Image Manipulation Program—and you're ready to learn how to use it and get the most out of it.

This book is ideal for anyone attempting image editing for the first time, but it goes deep enough to satisfy the intermediate GIMPster who knows the basics but needs more. Plus, it contains enough tricks and reference matter to gratify even power users. Anyone with an interest in digital art and a willingness to explore should find lots of useful tips and fun projects throughout the book.

This second edition includes several new projects and tips not in the first edition, and covers some of the new features that went into 2.4 at the last minute (as well as a preview of GIMP 2.6).

Structure of the Book

The first few chapters assume no knowledge at all of GIMP or of any other image-editing program. Later chapters will assume you've picked up these basics, and will build on them.

Chapter 1 introduces GIMP's various windows, menus, and interface conventions. GIMP has a somewhat different user interface from most other programs, so it helps to get an idea of how its windows and dialog boxes work together and how the menus are structured.

Beginning with Chapter 2, you'll dive into practical image-editing tasks. Chapters 2 through 6 each cover a different category of image operations—layers, drawing, selection, touching up—and each one describes a series of different and related techniques.

Chapter 7 takes you on a whirlwind tour of the special effects available in GIMP. Then you'll dive into more advanced topics in Chapters 8 through 10, which cover subjects such as color theory, layer mode effects, shading, perspective, image stacking, and panoramas.

Chapter 11 explores scripts and plug-ins: how they work, how to install existing ones, and how to take one and tweak it to do something slightly different. I hope that even people with no programming experience will at least take a look at the scripting sections—there's a lot you can do with GIMP scripts, even if you've never written a line of code before.

For the exercises throughout most of the book, you will want to have some digital photographs handy. If you don't already have a digital camera or a collection of scanned photos, the section “Additional Resources” in Chapter 12 offers a list of websites where you'll find all sorts of terrific photos you can use in your own projects. The rest of Chapter 12 covers a few topics that don't fit anywhere else in the book, plus web resources for finding more GIMP information.

If you don't already have GIMP installed on your computer, skip straight to Appendix A for an outline of how to install GIMP on the most common platforms it supports—Windows, Mac OS X, and Linux. Appendix B gives tips on installing on older versions of those operating systems. If you ever decide you want to build GIMP from source, Appendix C has tips on how to do just that. Finally, Appendix D gives a look at the upcoming GIMP 2.6.

A Note on GIMP Versions

This book was written based on GIMP 2.4. As it goes to press, the development version, 2.5, is coming along and there's no telling when it will be released as 2.6.

Therefore, I've tried to include enough 2.5 information, where it differs from 2.4, that the book will be useful with 2.6. Appendix D gives an overview of the differences. You can also use the book with an older 2.2 or even 2.0 GIMP version, though you'll miss some of the nice new features introduced with 2.4. When possible, I mention locations of menu items that have moved.

If you're using *Beginning GIMP* with GIMP 2.6, check the book's website, <http://gimpbook.com>, for notes on any features that may have changed after the book went to press.

Downloads and Feedback

When learning image editing, it's always helpful to have lots of examples you can use. Some of the images that appear in the book are available in GIMP's native XCF format on the Apress website, along with any scripts used to create them. You'll also find source code there for the scripts and plug-ins presented in Chapter 11, a collection of the images used in the book, and any (gasp!) errata. Just point your browser to www.apress.com and search for this book.

I also maintain a website for the book at <http://gimpbook.com>, with a separate errata page, the images used in the book, and an updated version of the links from Chapter 12.

Please email any feedback or suggestions to akkana@gimpbook.com.

I hope you enjoy your introduction to GIMP!



Getting to Know GIMP

Welcome to the GNU Image Manipulation Program—more commonly known as GIMP.

GIMP is the premiere open source image-editing program. It's powerful and fun to use...but it's also easy to get lost in when you're just starting out. This chapter will introduce you to the program, and offer some tips on how to get the most out of GIMP.

You'll become familiar with GIMP's interface—its most important windows, dialogs, and menus, plus some handy tricks and shortcuts. If you've already used GIMP a bit, a lot of the chapter may be review, but you may find some helpful tips you haven't seen before.

Along the way, I'll cover

- What is GIMP?
- A tour of important GIMP windows
- Menu overview
- Some GIMP settings you can customize (and why you might want to)
- A first GIMP project

What Is GIMP?

GIMP, sometimes called *the GIMP*, is the *GNU Image Manipulation Program*.

It's a computer program for creating and editing digital images. In particular, it's designed for editing digital photographs and typical web graphics. You can also use it to make some pretty amazing drawings.

GIMP is a complex program suitable for professional artwork, but it's also just plain fun—a place to play with pretty pictures and let your imagination run wild. As you read this book, please keep that in mind. Make a point of “fooling around” and having fun with your image-editing projects.

GIMP is also free open source software. It's written and maintained by volunteers and distributed without cost. In fact, you're encouraged to make copies of it to share with friends, and you can even contribute to it yourself.

GIMP arose out of a 1995 computer science class project by Spencer Kimball and Peter Mattis. Within a year, it had grown into a popular open source image editor, with users and contributors from around the world. It's been growing and improving ever since.

Today, GIMP is used by countless people worldwide. It runs on most Windows systems, Mac OS X, Linux, and most versions of UNIX, as well as a few more obscure systems. The program is free software in both senses of the word “free”: you don’t have to pay anything to use it, and GIMP’s inner workings (“source code”) are available for anyone to examine, contribute to, distribute, or learn from. The latest is always available from <http://www.gimp.org>.

GIMP stands as a shining example of the power of free, open source software. It’s written and maintained by volunteers who keep in touch by means of internet relay chat (IRC) and mailing lists, despite time zone and language differences. GIMP users who want to get more involved can participate in the GIMP project’s mailing lists, contribute bug fixes or new features, design new brushes or patterns, or write their own plug-ins and scripts to share with the world. Or they can just enter goofy photo contests to show what cool things can be done with GIMP!

A note about terminology: you’ll often see GIMP referred to as *the* GIMP. “The GIMP” was the program’s official name until the 2.4 release, when the name was officially changed to just “GIMP.” You’ll still see lots of references to “the GIMP” in tutorials and other articles (and even, sometimes, on the [gimp.org](http://www.gimp.org) website). In the second edition of *Beginning GIMP* I’ll mostly avoid the “the” and call it just plain GIMP, but I hope you’ll bear with me if I slip from time to time.

A Tour of the Most Important GIMP Windows

One of the first things you’ll probably notice about GIMP is that it likes to use lots of windows. Instead of having one big window that contains the various images you’re using, the GIMP model lets you control your toolbox, layer controls, and each image separately. You can choose which windows are visible at any given time.

The main windows you need to know about are the Toolbox with its Tool Options, image windows (one for each image you have open), and the Layers dialog.

The Toolbox

The Toolbox window (Figure 1-1) is GIMP’s main window. It appears when you run GIMP without any images, and closing it exits the GIMP application. It has a menu bar where you can find GIMP functions that aren’t tied to any particular image (though in GIMP 2.6, the Toolbox no longer has a menu and these functions will move to the image window menus—see Appendix D for more details). It also has a collection of tool buttons and a couple of helpful controls.

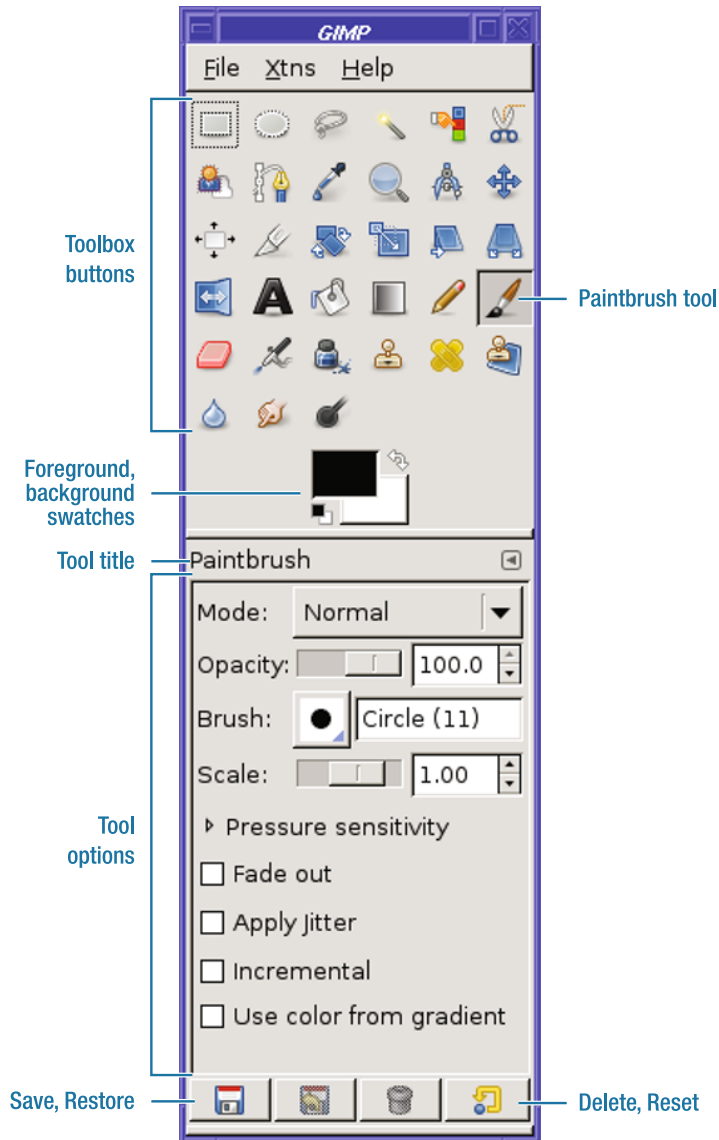


Figure 1-1. *The Toolbox window*

The tool buttons are the heart of the Toolbox window. GIMP has tools for selection (like Rectangular Select, the first tool in the Toolbox), tools for painting (like the Paintbrush, the tool that's active in Figure 1-1), and tools for changing images in a variety of ways. GIMP always has one active tool; if the active tool corresponds to one of the tool buttons, that button will appear “pressed,” as with the Paintbrush tool in Figure 1-1.

You can resize the Toolbox to taste, and the tool buttons will adjust their positions. As GIMP comes out with new versions, the tool buttons sometimes change position, so it's best not to rely on a button being in any particular place. Each tool has a tooltip to help you remember its function, which you can see by hovering your mouse over a button and pausing for a second or two.

There are a couple of other ways to activate a GIMP tool besides clicking a Toolbox button. There's the Tools dialog, accessed from the Toolbox as *File* ► *Dialogs* ► *Tools* or from any image window as *Dialogs* ► *Tools*. It lists every tool GIMP has (not all of them are in the Toolbox). You can control which tools show up as buttons in the Toolbox by clicking the “eye” icon next to each tool in the Tools dialog, and you can change their order by dragging tools to a different place within the dialog.

You can also activate tools through the *Tools* top-level menu in every image window. Finally, most tools also have a keyboard shortcut associated with them; these shortcuts are listed in the image window's *Tools* menu.

Below the tool buttons, the Toolbox shows two color “swatches,” initially black and white. These represent GIMP's current foreground and background colors, used in all sorts of operations. Clicking on either swatch brings up a color chooser. You'll use the color swatches a lot in Chapters 3 and 4.

Tip GIMP supports drag-and-drop in many places throughout the application. You can open images by dragging them from your desktop or file manager window to the GIMP Toolbox—just drop the image on top of the buttons. (Unfortunately, this doesn't currently work on Mac OS X due to limitations in Apple's X11 package.)

You can configure GIMP to show some other useful selectors next to the color swatches; see the section “A Few GIMP Settings You Can Customize,” later in this chapter, to learn which settings you can customize.

Tool Options

Below the color swatches is typically an area called *Tool Options*, which shows settings affecting the operation of the active tool. In Figure 1-1, the active tool is the Paintbrush, so the options showing are the ones for that tool. You can make Tool Options a separate dialog if you like (see the section “The Layers Dialog and Dialog Docking”), but most people prefer to leave it in its standard position, docked underneath the Toolbox. The buttons at the bottom of the dialog let you save or restore settings for the tool, or reset the options to their default values.

Image Windows

A toolbox is fine, but an image-editing program isn't any fun without images! GIMP uses a separate window for each image you open. That way, you can have big windows for big images, and small windows for small ones.

A fun and easy way to create an image window is to run one of the Logo scripts. There are lots of them (you'll see a complete list in Chapter 7), but for now, you just need one. Go to the Toolbox's *Xtns* menu (in GIMP 2.6, look under *File* ► *New*) and click *Xtns* ► *Logos* ► *Cool Metal*. In the dialog that opens, you can change the *Text* to anything you want...or you can leave it at the default, "Cool Metal." Click *OK*, and you have a new image window (Figure 1-2).

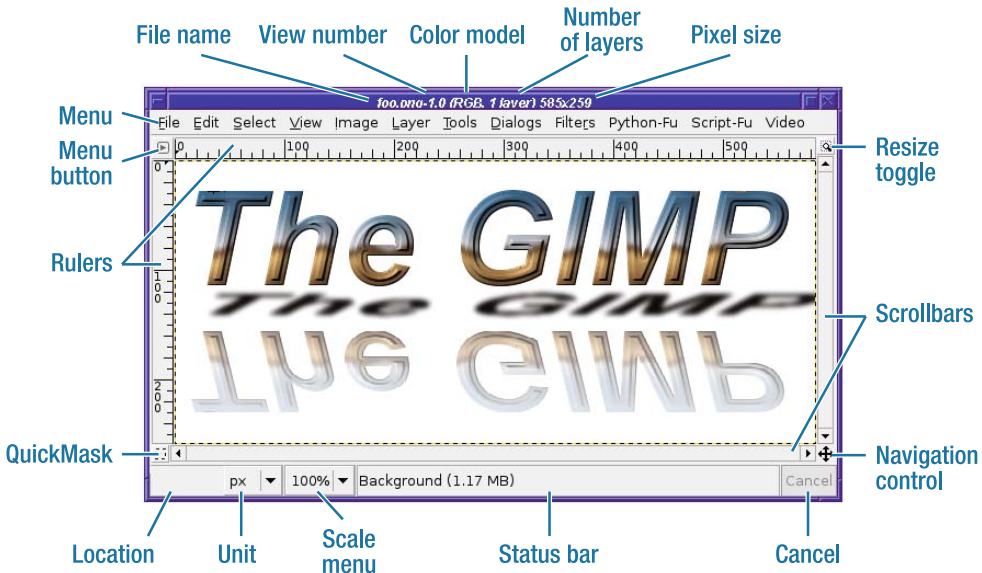


Figure 1-2. An image window

Let's start at the top. The image window's title bar gives information about the image: its file name and "view number," whether it's in full color (denoted RGB, for Red, Green, and Blue), the number of layers, and the current size of the image in pixels. You can change the information GIMP shows here; see the "GIMP Preferences" section in Chapter 12.

The window also has a menu bar, which offers a collection of operations for working on the image. You can hide the menu bar to offer more space for the image (Preferences again); in that case, use the menu button at the upper left of the window to show the menu, or right-click on the image to open the context menu.

The rulers at the top and left sides of the image window show the position of your mouse in the image. You can also use the rulers to set up "guides," gridlines on the image to help you draw exactly where you want (you'll meet guides in Chapter 4).

Moving down to the bottom-left corner, the QuickMask button helps with defining selections. See Chapter 5 for details.

The location area below the QuickMask button gives a precise readout of the current mouse position if your mouse is in the window (otherwise it's blank); the menu button next to it lets you display the mouse position in any unit you find most comfortable, such as pixels, inches, or points (most of the time, I recommend sticking with pixels).

The scale menu, or zoom control, shows whether the image is currently being displayed at actual size (100%), shrunk to a smaller size, or magnified to a larger size. There are lots of other ways to zoom, too. You can use the *View* ► *Zoom* menu, or use the + and – keys to zoom in or out. You can activate the Zoom tool (in the Toolbox, click on the tool button that looks like a magnifying glass), then click in the image to zoom in (Ctrl+click to zoom out). If you have a mouse with a scroll wheel, you can also zoom by using the Ctrl key in combination with the mouse wheel. Finally, if you click on the resize toggle in the upper-right corner of the image window, you can resize the image window and the image will automatically zoom to fit the new window size.

The status bar along the bottom of the window shows more information about the image: specifically, which layer is selected and how much memory the image is using. It also shows a progress bar when GIMP is performing a time-consuming operation, with a Cancel button right next to it.

The navigation control at the bottom right lets you “pan” around the image instead of using the scrollbars (click on it to see how it works). For images that are too big to fit on the screen, panning can be quicker than scrolling. You can also pan by dragging anywhere in the image window while holding down the middle mouse button, or by holding down the spacebar while dragging in the image with the left button. (You can configure the spacebar to call up the Move tool rather than panning; see the section “A Few GIMP Settings You Can Customize,” later in this chapter).

The Layers Dialog and Dialog Docking

GIMP has a lot of useful dialogs—you can see the whole list from *File* ► *Dialogs* in the Toolbox menu or the image window's top-level *Dialogs* menu—and it lets you configure which dialogs will be grouped together using a mechanism called *docking*.

Each separate dialog window is called a dock, and can hold quite a few dialogs inside it. Aside from the Toolbox, GIMP 2.4 initially makes one dock visible (Figure 1-3).

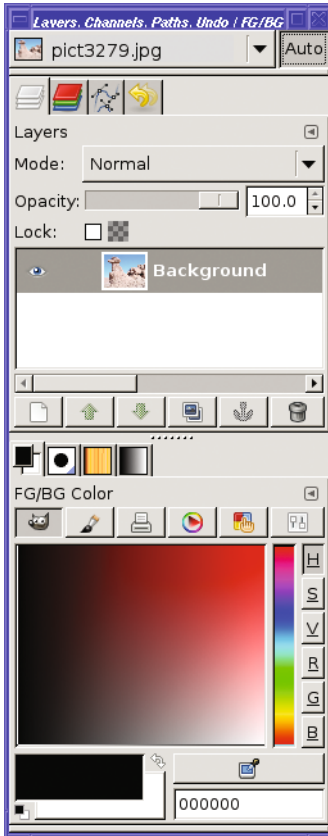


Figure 1-3. The Layers (top) and Color (bottom) dialogs docked together, along with many other dialogs also docked (see the tabs above “Layers” and above “FG/BG Color”)

Initially you can see two dialogs in this dock: the Layers dialog (the top half) and the FG/BG Color dialog (the bottom). But there are many more dialogs docked here, visible only through tabs. The Layers half of the dock also includes tabs for *Channels*, *Paths*, and *History (Undo)*, while the Color half includes tabs for the *Brush*, *Patterns*, and *Gradients* dialogs. Select any tab to make that dialog visible.

But you’re not stuck with this layout: you can group dialogs together any way you like, using *docking* (Figure 1-4). Press and hold the left mouse button in the *drag handle* area—the title area or tab, highlighted as “Drag from” in Figure 1-4—and drag to where you want the dialog to be. You can drag to the drag handle or tab area of another dock, and the dialog will be added as a new tab; or you can drag to the *docking bar* at the bottom of an existing dock to create a new dialog area below what’s already there. Take care to drop exactly where you want the dialog to end up: if you drop between two tabs of an existing dock, that’s where the dragged dialog’s tab will end up.

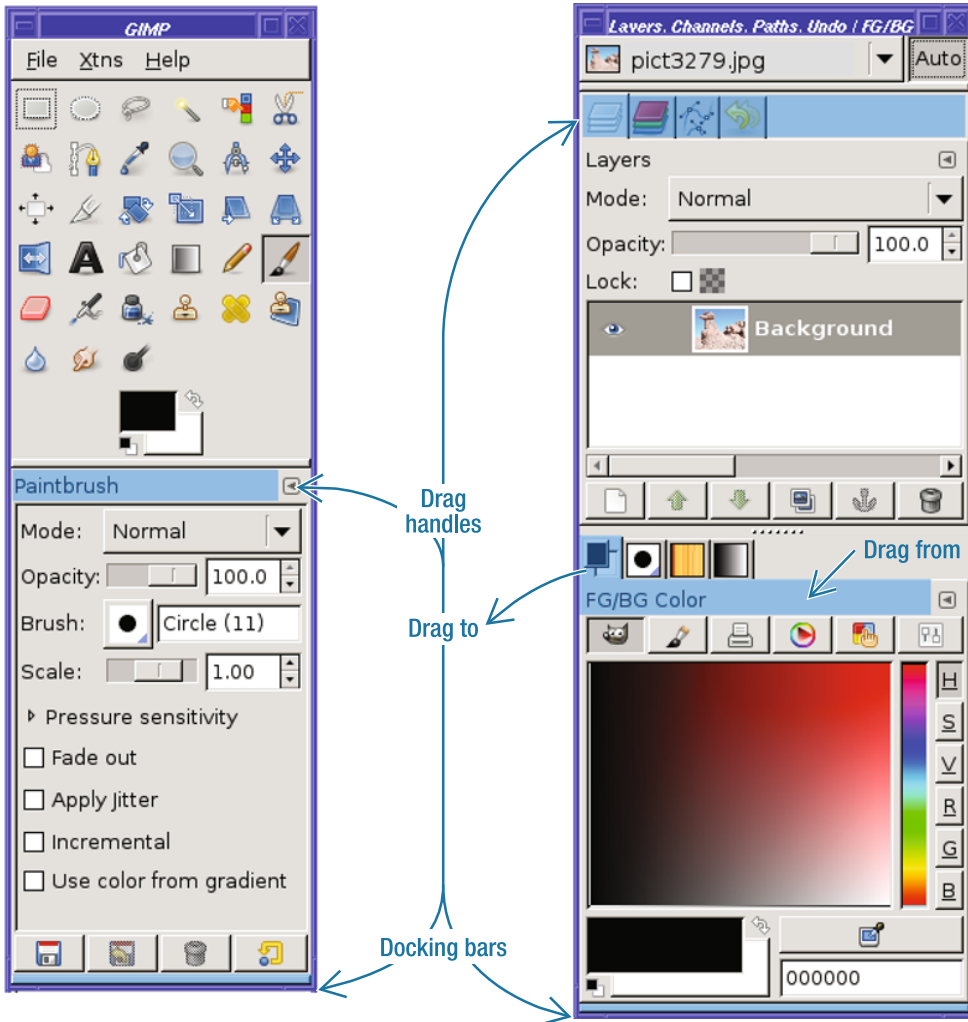


Figure 1-4. Drag handles and docking bars in the Toolbox and a dock window

You can also drag a dialog to your desktop, which gives you a new dock window containing only that dialog. Finally, from the Toolbox *File* ► *Dialogs* or the image window *Dialogs* menu, you can choose *Create a New Dock*, which offers a few popular combinations like *Layers, Channels & Paths* (which, confusingly, will also include *Undo*).

Caution When you close a dock containing several dialogs, GIMP 2.4 will forget how they were docked—even if it was just GIMP’s default initial configuration. There are two ways to get the default configuration back: you can build them up from the combinations in *File* ► *Dialogs* ► *Create a New Dock*; or you can exit GIMP, remove your GIMP profile, and start over. GIMP 2.6 will offer a solution: *Windows* ► *Recently Closed Docks*.

I’ll refer to dialogs by their individual names throughout this book. In particular, you’ll be using the Layers dialog quite a lot starting with Chapter 3, and I’ll just call it the Layers dialog—it doesn’t matter whether you keep it by itself or docked with seven other dialogs.

Menu Overview

You’ll learn all about the functions in GIMP’s menus as you explore later chapters, but here’s a quick tour of which menu does what.

The Toolbox menu bar offers operations that don’t apply to a specific image. This includes *File* operations such as *New* and *Open*, the *Dialogs* menu, a *Help* menu for online help, and a menu labeled *Xtns* (short for “Extensions”).

Of particular interest is the *Xtns* menu. This menu gives you access to a menagerie of extensions that can create new images. Included are submenus offering a collection of scripts to create various styles of text logos, buttons (for use on web pages), shapes such as a sphere, interesting patterns and brushes, and themes you can use for web pages.

The *Xtns* menu also contains GIMP’s Plug-in Browser. Many of GIMP’s functions are implemented as plug-ins, and it can sometimes be difficult to find a specific function in the menus. The Plug-in Browser lets you search for plug-ins by name, and then tells you where in the menus you can find them. See Chapter 11 for more details.

Note Don’t get too attached to the Toolbox menus. In GIMP 2.6, the Toolbox will no longer have a menu bar, and all those functions will move to image window menus. This will include a new top-level *Windows* menu you can use to access any dialog or any currently open image—it also includes a helpful *Recently Closed Docks* category—and a menu under *File* ► *New* that replaces the new image-creation operations in the *Xtns* menu.

The Toolbox menus also offer another very handy feature: *tear-offs*.

Tear-off Menus and Context Menus

GIMP has a lot of features, and exploring can get frustrating when you want to try out lots of different options that are buried in the same deep menu. Tear-offs can help: they let you grab any menu and turn it into a window of its own.

For instance, suppose you want to explore GIMP's long list of Logo scripts, available from the Toolbox's *Xtns* ► *Logos* submenu (Figure 1-5). You'd have to keep clicking on *Xtns*, then click or drag to *Logos*, then choose the item you want to try next. But click on the *Logos* tear-off, and the submenu detaches and becomes a new window on your desktop, where you can keep it as long as you like.

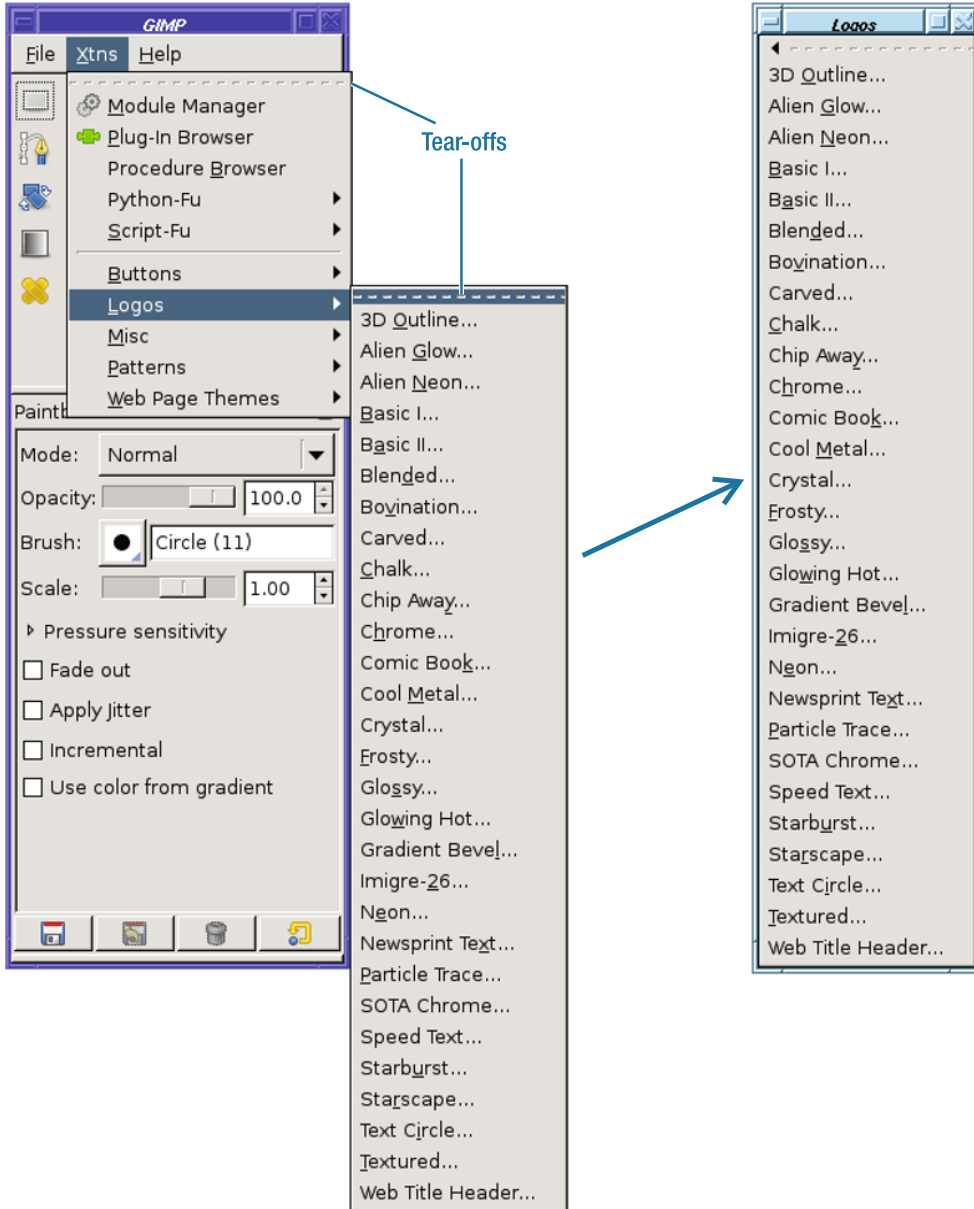


Figure 1-5. Tearing off a menu makes it appear as a new window.