

Teens and Technology 2012

Using READ™ Design Studio to create dynamic programming and marketing materials



Idaho
Commission
for Libraries

Tutorial #3

Introduction to the GIMP Interface

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The GIMP Interface

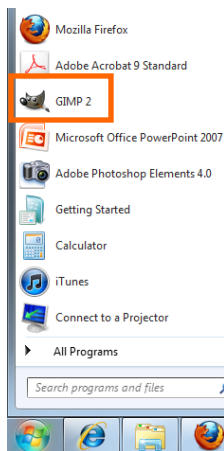
Opening GIMP

GIMP should now be installed on your computer with the interface customized.

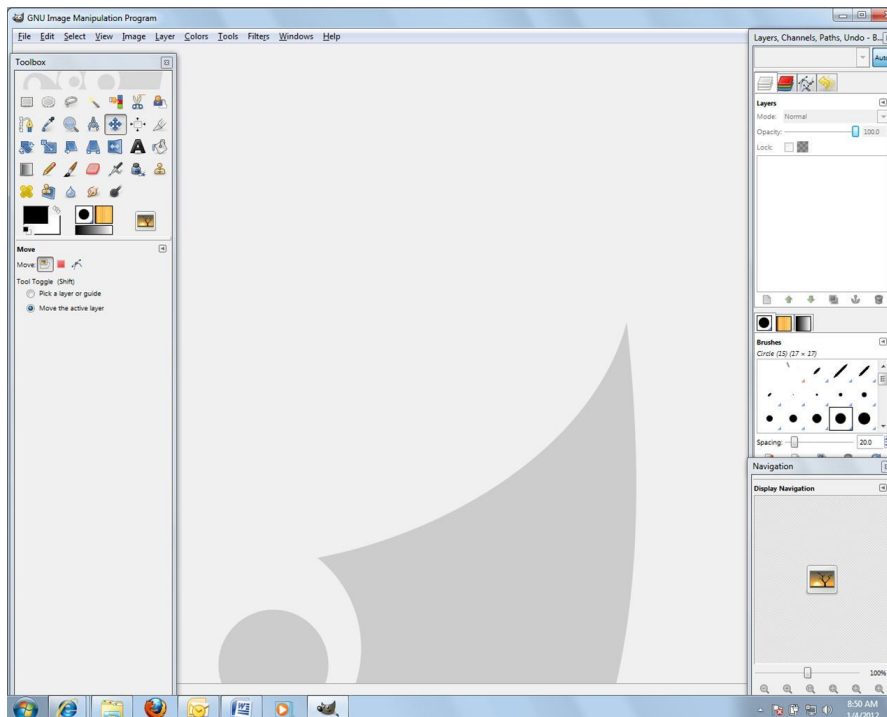
Step 1: Double click on the GIMP 2 icon on your desktop to open GIMP.



Tip: If you do not have a shortcut to GIMP 2 on your desktop, click the start button and find the GIMP program icon in the list and double click to open the program.



GIMP will open and the interface should look something like this:



The GIMP Interface

Common Terminology

Let's look at the GIMP Interface and learn about the main sections you will be working with and learn some common terminology. Much of this is taken from the online User Manual and more complete information can be found there if you want further information. (<http://docs.gimp.org/2.6/en/>)

Images

Images are the basic entities used by GIMP. Roughly speaking, an “image” corresponds to a single file, such as a TIFF or JPEG file. In GIMP, it is possible to have many images open at the same time.

Layers

If a simple image can be compared to a single sheet of paper, an image with layers is likened to a sheaf of transparent papers stacked one on top of the other. You can draw on each paper, but still see the content of the other sheets through the transparent areas. You can also move one sheet in relation to the others. Sophisticated GIMP users often deal with images containing many layers, even dozens of them. Layers need not be opaque, and they need not cover the entire extent of an image, so when you look at an image's display, you may see more than just the top layer: you may see elements of many layers.

Selections

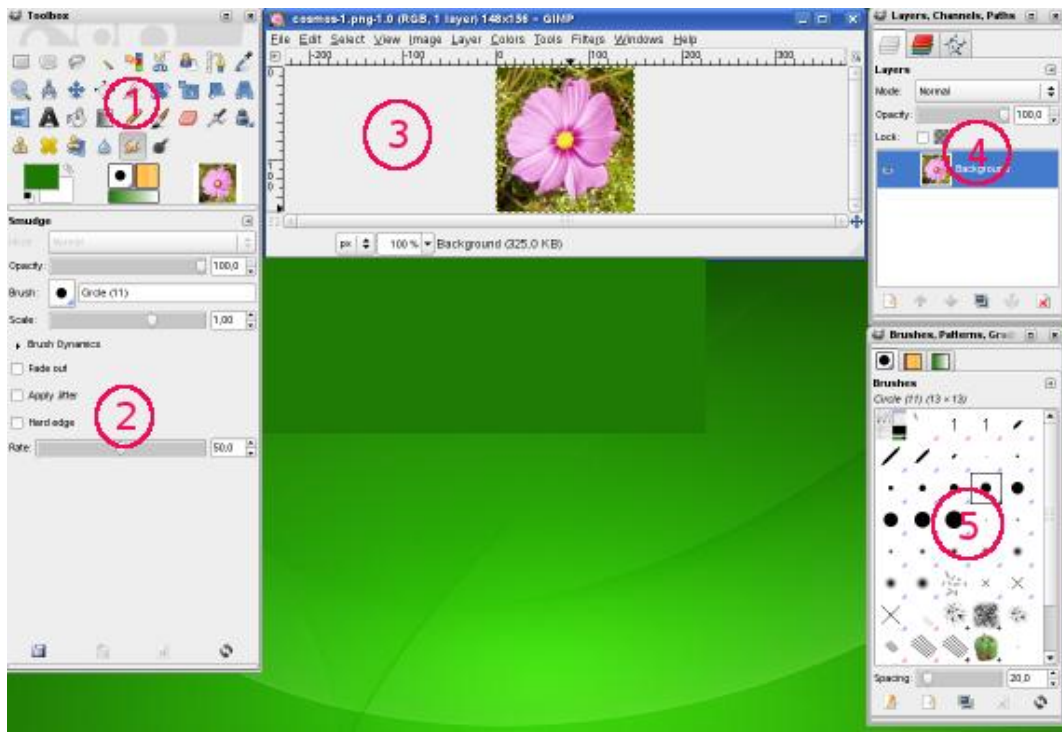
Often when modifying an image, you only want a part of the image to be affected. The “selection” mechanism makes this possible. Each image has its own selection, which you normally see as a moving dashed line separating the selected parts from the unselected parts. A large component of learning how to use GIMP effectively is acquiring the art of making good selections—selections that contain exactly what you need and nothing more. Because selection-handling is so centrally important, GIMP provides many tools for doing it.

Undoing

When you make mistakes, you can undo them. Nearly everything you can do to an image is undoable. In fact, you can usually undo a substantial number of the most recent things you did, if you decide that they were misguided. GIMP makes this possible by keeping a history of your actions.

The GIMP Interface

Overview of the GIMP Interface



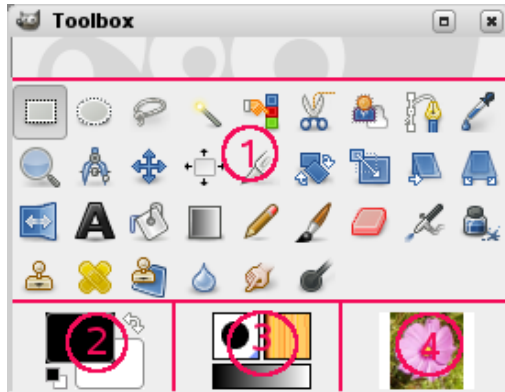
The screenshot above shows the most basic arrangement of GIMP windows that can be used effectively.

1. *The Main Toolbox:* Contains a set of icon buttons used to select tools. May also contain the foreground and background colors; brush, pattern, and Gradient; and an icon of the active image. Use Edit → Preferences → Toolbox to enable, or disable the extra items.
2. *Tool options:* Docked below the main Toolbox is a Tool Options dialog, showing options for the currently selected tool (in this case, the Smudge tool).
3. *An image window:* Each image open in GIMP is displayed in a separate window. Many images can be open at the same time, limited by only the system resources. Before you can do anything useful in GIMP, you need to have at least one image window open. The image window holds the Menu of the main commands of GIMP (File, Edit, Select...), which you can also get by right-clicking on the window.
4. The *Layers, Channels, Paths* dock with the Layers Dialog open; note that the “dialogs” in the “dock” are tabs. This dialog window shows the layer structure of the currently active image, and allows it to be manipulated in a variety of ways. It is possible to do a few very basic things without using the Layers dialog, but even moderately sophisticated GIMP users find it indispensable to have the Layers dialog available at all times.
5. *Brushes/Patterns/Gradients:* The docked dialog below the layer dialog shows the dialogs (tabs) for managing brushes, patterns and gradients.

The GIMP Interface

Toolbox

The **Toolbox** will be used extensively. Here is a quick tour of what you will find there.



1. *Tool icons:* These icons are buttons which activate tools for a wide variety of purposes: selecting parts of images, painting an image, transforming an image, etc. [Section 1 of the User Manual, “The Toolbox”](#) gives an overview of how to work with tools, and each tool is described systematically in the [Tools](#) chapter.
2. *Foreground/Background colors:* The color areas here show you GIMP's current foreground and background colors, which come into play in many operations. Clicking on either one of them brings up a color selector dialog that allows you to change to a different color. Clicking on the double-headed arrow swaps the two colors, and clicking on the small symbol in the lower left corner resets them to black and white.
3. *Brush/Pattern/Gradient:* The symbols here show you GIMP's current selections for: the Paintbrush, used by all tools that allow you to paint on the image (“painting” includes operations like erasing and smudging, by the way); for the Pattern, which is used in filling selected areas of an image; and for the Gradient, which comes into play whenever an operation requires a smoothly varying range of colors. Clicking on any of these symbols brings up a dialog window that allows you to change it. (NOTE: you can also access the brush/pattern/gradient tools in the dialog box on the right hand side of the screen by selecting the appropriate tab.)
4. *Active Image:* In GIMP, you can work with many images at once, but at any given moment, only one image is the “active image”. Here you find a small iconic representation of the active image. Click the icon to display a dialog with a list of the currently open images, click an image in the dialog to make it active. You can also click an image window to make it the active image.



Tip: The Main Toolbox is the heart of GIMP. If you close it, you quit GIMP.

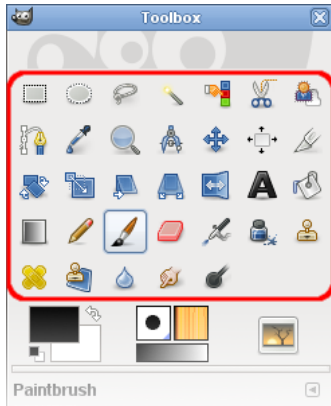


Tip: Moving the mouse over something and letting it rest a moment will reveal a “tooltip” that describes the tool.

The GIMP Interface

Tool Icons

GIMP has a diverse assortment of tools that let you perform a large variety of tasks. The tools can be thought of as falling into five categories:



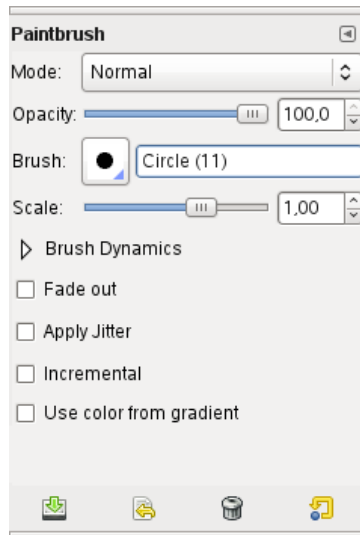
- *Selection tools*, which specify or modify the portion of the image that will be affected by subsequent actions;
- *Paint tools*, which alter the colors in some part of the image;
- *Transform tools*, which alter the geometry of the image;
- *Color tools*, which alter the distribution of colors across the entire image;
- *Other tools*, which don't fall into the other four categories.

Most tools can be activated by clicking on an icon in the Toolbox. By default, some tools are accessible only via the menus (namely the Color tools are accessible only either as Colors or as Tools → Colors). Every tool, in fact, can be activated from the *Tools* menu; also, every tool can be activated from the keyboard using an accelerator key.

Tool Option Dialog box

If you have things set up like most people do, activating a tool causes its Tool Options dialog to appear below the Toolbox. If you don't have things set up this way, you probably should: it is very difficult to use tools effectively without being able to manipulate their options.

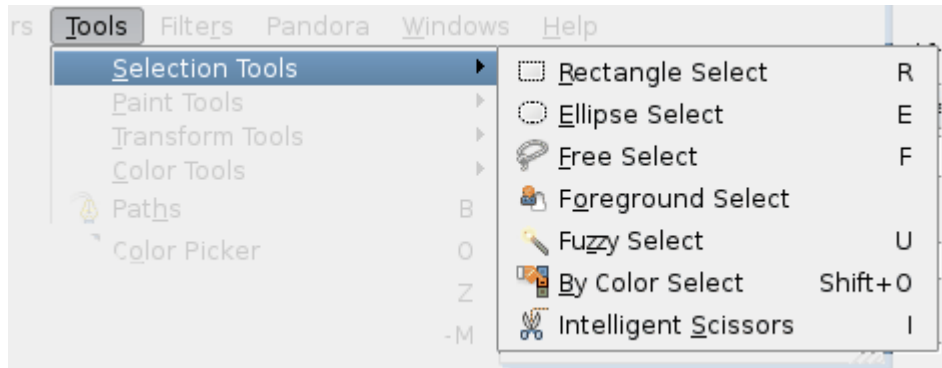
Each tool has its own specific set of options. The choices you make for them are kept throughout the session, until you change them. In fact, the tool options are maintained from session to session. The persistence of tool options across sessions can sometimes be an annoying nuisance: a tool behaves very strangely, and you can't figure out why until you remember that you were using some unusual option the last time you worked with it, two weeks ago.



Tip: The Tool Options appear beneath the Toolbox in the default setup. If you lose it somehow, you can get it back by creating a new Tool Options dialog using **Windows → Dockable Dialogs → Tool Options** and then docking it below the Toolbox. See the online section on [Dialogs and Docking](#) if you need help.

The GIMP Interface

Selection Tools



Selection tools are designed to select regions from the active layer so you can work on them without affecting the unselected areas. Each tool has its own individual properties, but the selection tools also share a number of options and features in common. These common features are described here; the variations are explained in the following sections for each tool specifically. If you need help with what a “selection” is in GIMP, and how it works, see [Selection](#).

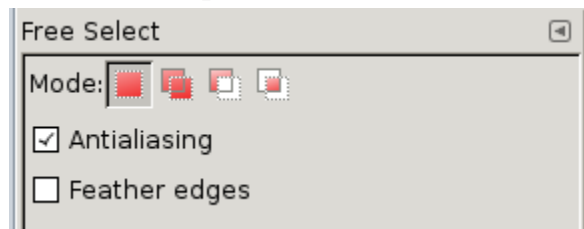
There are seven selection tools:

- the [Rectangle Select](#);
- the [Ellipse Select](#);
- the [Free Select \(the Lasso\)](#);
- the [Select Contiguous Regions \(the Magic Wand\)](#);
- the [Select by Color](#);
- the [Select Shapes from Image \(Intelligent Scissors\)](#) and
- the [Foreground Select](#).



Tip: The behavior of selection tools is modified if you hold down the **Ctrl**, **Shift**, and/or **Alt** keys while you use them.

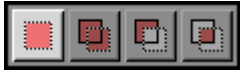
Selection Tool Options



Mode

This determines the way that the selection you create is combined with any pre-existing selection. Note that the functions performed by these buttons can be duplicated using modifier keys, as described above. For the most part, advanced users use the modifier keys; novice users find the mode buttons easier.

The GIMP Interface



Replace mode will cause any existing selection to be destroyed or replaced when the new selection is created.



Add mode will cause the new selection to be added to any existing selection regions.



Subtract mode will remove the new selection area from any existing selection regions.



Intersection mode will make a new selection from the area where the existing selection region and the new selection region overlap.

Antialiasing

This option only affects a few of the selection tools: it causes the boundary of the selection to be drawn more smoothly.

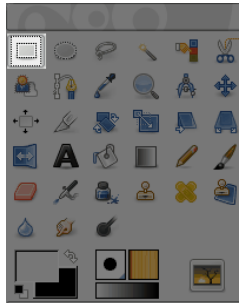
Feather Edges

This option allows the boundary of the selection to be blurred, so that points near the boundary are only partially selected. For further information regarding feathering, see the glossary entry [Feathering](#).

Let's look at what the various selection tools do:

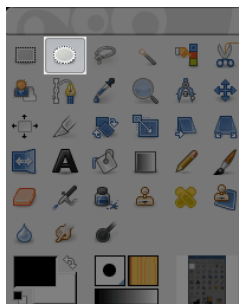
Rectangular Selection

Example of rectangular selection:



Ellipse Selection

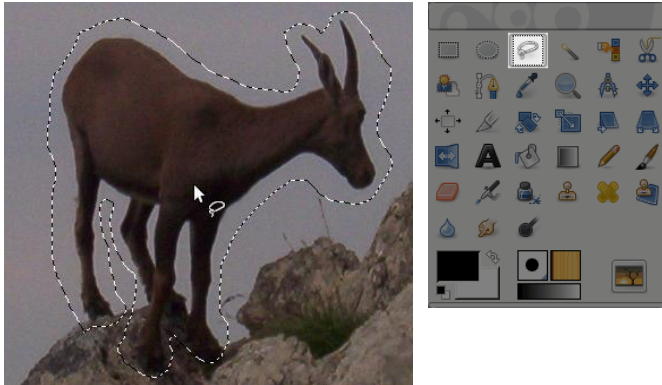
Example of ellipse selection:



The GIMP Interface

Free Selection (Lasso)

Example of a rough selection with Free Selection tool:



The Free Selection tool, or Lasso, lets you create a selection by drawing it free-hand with the pointer, while holding down the left mouse button (or, for a stylus, pressing it against the tablet). When you release the mouse button, the selection is closed by connecting the current pointer location to the start location with a straight line. You can go outside the edge of the image display and come back in if you want to. The Lasso is often a good tool to use for “roughing in” a selection; it is not so good for precise definition.

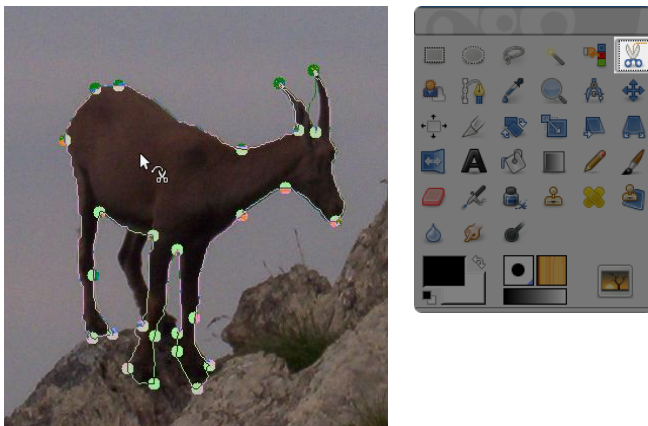


Tip: The Free Selection tool is much easier to use with a tablet than with a mouse.

Intelligent Scissors

The Intelligent Scissors tool is an interesting piece of equipment; it has some features in common with the Lasso, some features in common with the Path tool, and some features that are all its own. It is useful when you are trying to select a region defined by strong color-changes at the edges. To use the Scissors, you click to create a set of “control nodes”, also referred to as anchors or control points, at the edges of the region you are trying to select. The tool produces a continuous curve passing through these control nodes, following any high-contrast edges it can find. If you are lucky, the path that the tool finds will correspond to the contour you are trying to select.

Example of a selection using Intelligent Scissors:



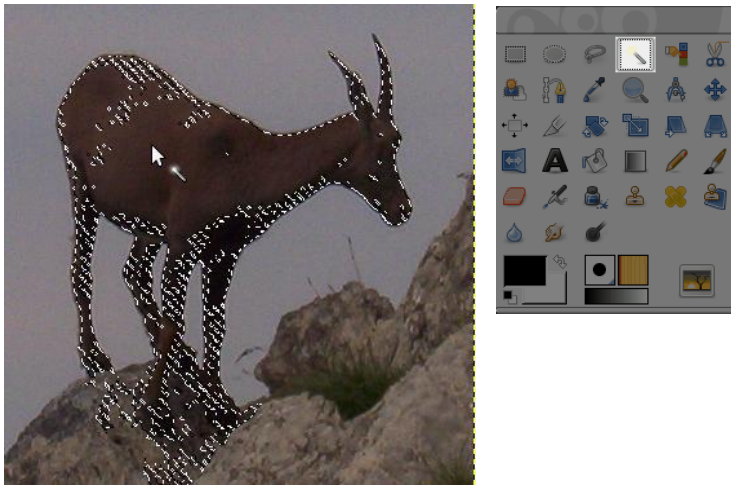
The GIMP Interface

Fuzzy Select (Magic Wand)

The Fuzzy Select (Magic Wand) tool is designed to select areas of the current layer or image based on color similarity.

The Wand is a good tool for selecting objects with sharp edges. It is fun to use, so beginners often start out using it a lot. You will probably find, however, that the more you use it, the more frustrated you become with the difficulty of selecting exactly what you want, no more, no less. More experienced users find that the [Path](#) and [Color Select](#) tools are often more efficient, and use the Wand less. Still, it is useful for selecting an area within a contour, or touching up imperfect selections. It often works very well for selecting a solid-colored (or nearly solid-colored) background area.

Example of a Fuzzy Selection:

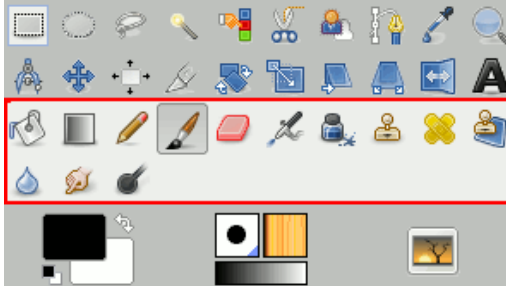


Tip: When using this tool, it is very important to pick the right starting point. If you select the wrong spot, you might get something very different from what you want, or even the opposite.

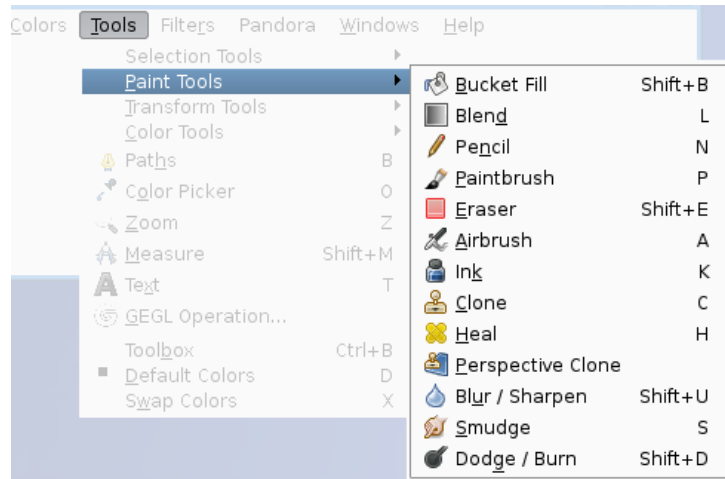
The GIMP Interface

The Paint Tools

The GIMP Toolbox includes thirteen “paint tools”, all grouped together at the bottom (in the default arrangement).



These tools can also be accessed through the **Tools Menu** at the top of the page.



The feature they all have in common is that all of them are used by moving the pointer across the image display, creating brush-strokes. Four of them

- the [Pencil](#),
- the [Paintbrush](#),
- the [Airbrush](#) and
- the [Ink tool](#)

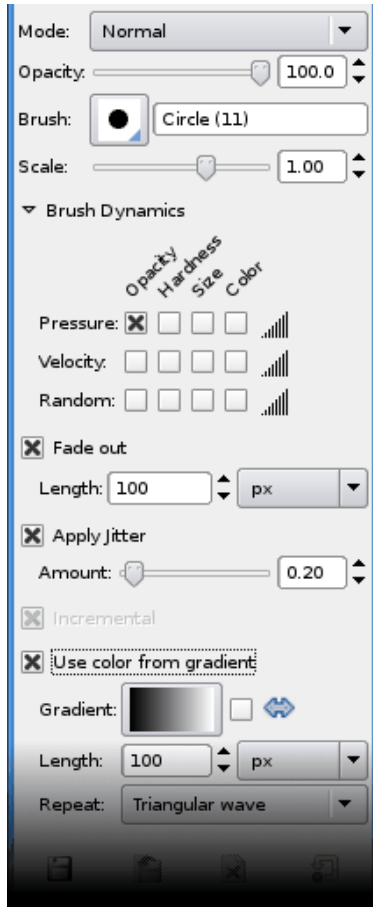
behave like the intuitive notion of “painting” with a brush. Pencil, Paintbrush, and Airbrush are called “basic painting tools” or [brush tools](#).

The other tools use a brush to modify an image in some way rather than paint on it:

- the [Bucket Fill](#) fills with color or pattern;
- the [Gradient](#) fills with gradients;
- the [Eraser](#) erases;
- the [Clone tool](#) copies from a pattern, or image;
- the [Perspective Clone](#) tool copies into a changed perspective;
- the [Heal tool](#) corrects small defects;
- the [Convolve tool](#) blurs or sharpens;
- the [Smudge tool](#) smears;
- and the [Dodge/Burn tool](#) lightens or darkens.

The GIMP Interface

Tool Options Shared by Paint Tools



Many tool options are shared by several paint tools: these are described here. Options that apply only to one specific tool, or to a small number of tools, are described in the sections devoted to those tools.

Mode

The Mode drop-down list provides a selection of paint application modes. The easiest way to understand what the Mode setting does is to imagine that the paint is actually applied to a layer above the layer you are working on, with the layer combination mode in the Layers dialog set to the selected mode. You can obtain a great variety of special effects in this way. The Mode option is only usable for tools that can be thought of as adding color to the image: the Pencil, Paintbrush, Airbrush, Ink, and Clone tools.

Opacity

The Opacity slider sets the transparency level for the brush operation. To understand how it works, imagine that instead of altering the active layer, the tool creates a transparent layer above the active layer and acts on that layer. Changing Opacity in the Tool Options has the same effect that changing opacity in the Layers dialog would have in the latter situation. It controls the “strength” of all paint tools, not just those that paint on the active layer.

Brush

The brush determines how much of the image is affected by the tool, and how it is affected, when you trace out a brushstroke with the pointer. GIMP allows you to use several different types of brushes, which are described in the [Brushes](#) section.

Scale

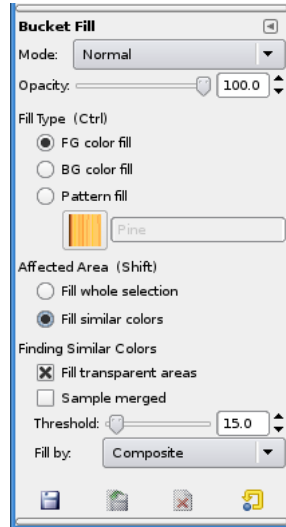
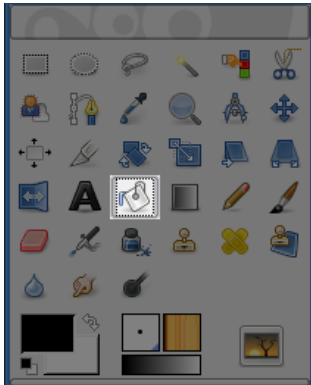
This option lets you to modify precisely the size of the brush. You can use the arrow keys to vary by ± 0.01 or the Page-Up and Page-Down keys to vary by ± 0.05 . You can obtain the same result if you have correctly set your mouse-wheel in the Preferences. See [How to vary the size of a brush](#).

The GIMP Interface

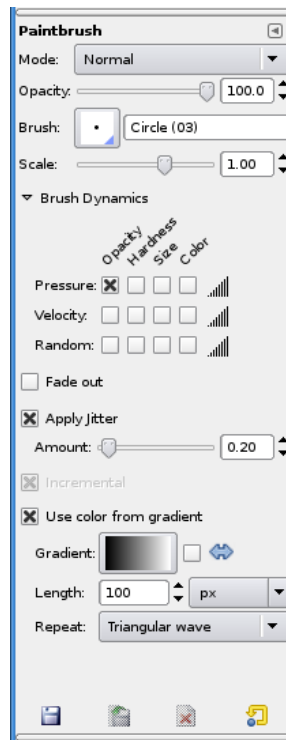
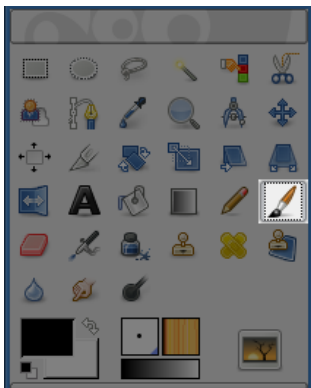
Other Paint Tools

Bucket Fill

This tool fills a selection with the current foreground color. If you Ctrl+click and use the Bucket tool, it will use the background color instead. Depending on how the tool options are set, the Bucket Fill tool will either fill the entire selection, or only parts whose colors are similar to the point you click on. The tool options also affect the way transparency is handled.



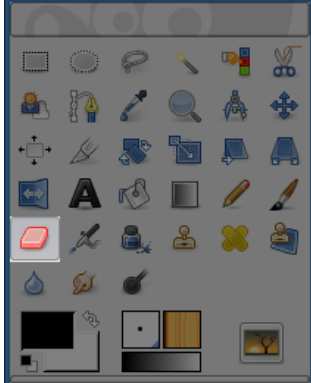
Paintbrush Tool



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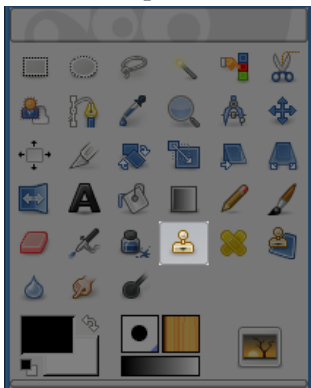
Eraser Tool

The Eraser is used to remove areas of color from the current layer or from a selection of this layer. If the Eraser is used on something that does not support transparency (a selection mask channel, a layer mask, or the Background layer if it lacks an alpha channel), then erasing will show the background color, as displayed in the Color Area of the Toolbox (in case of a mask, the selection will be modified). Otherwise, erasing will produce either partial or full transparency, depending on the settings for the tool options.



Clone Tool

The Clone tool uses the current brush to copy from an image or pattern. It has many uses: one of the most important is to repair problem areas in digital photos, by “painting over” them with pixel data from other areas. This technique takes a while to learn, but in the hands of a skilled user it is very powerful.



Heal Tool

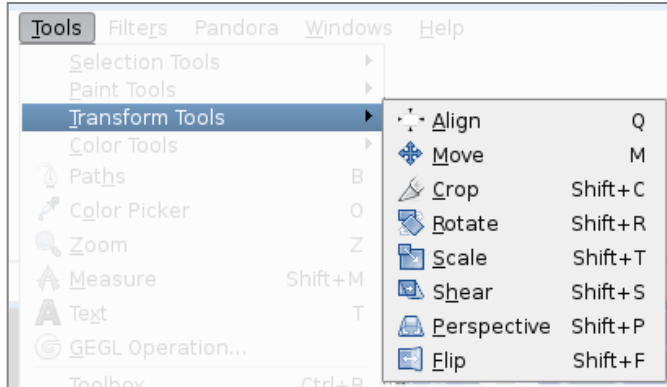
This tool was once described as a smart clone tool on steroids. And indeed the Healing Tool is a close relative to the Clone Tool, but it is smarter and allows you to remove small failures in images. A typical usage is the removal of wrinkles in photographs. To do so, pixels are not simply copied from source to destination, but the area around the destination is taken into account before cloning is applied.



The GIMP Interface

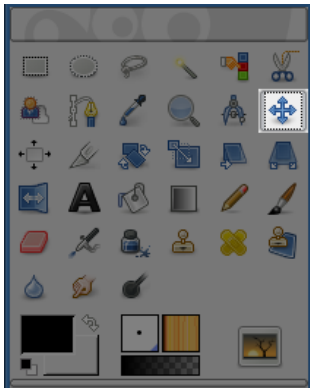
Transform Tools

Inside the Transformation tool dialog, you will find eight tools to modify the presentation of the image or the presentation of an element of the image, selection, layer or path. Each transform tool has an Option dialog and an Information dialog to set parameters.

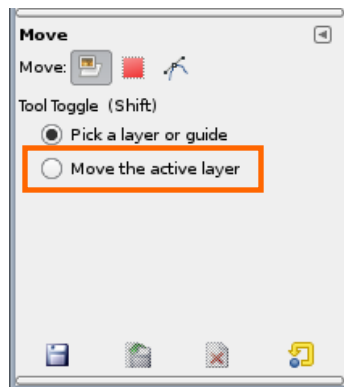


The Move Tool

The Move Tool is used to move layers and selections. It works also on texts.



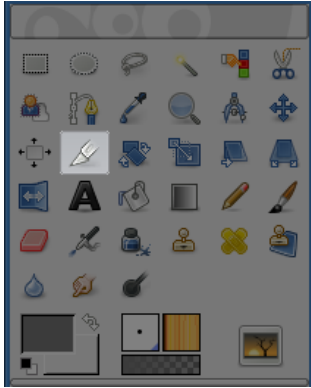
Tip: Choose **Move the Active Layer** in the options box. Only the current layer will be moved. This may be useful if you want to move a layer with transparent areas, where you can easily pick the wrong layer. You may have already completed this step during the customization of your interface.



The GIMP Interface

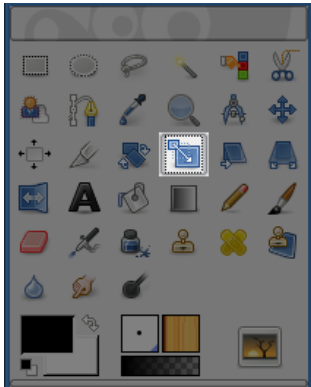
Crop Tool

The Crop Tool is used to crop or clip an image. It works on all the layers of the image, visible and invisible. This tool is often used to remove borders, or to eliminate unwanted areas to provide you with a more focused working area. It is also useful if you need a specific image size that does not match the original dimensions of your image.



Scale Tool

The Scale Tool is used to scale layers, selections or paths (the Object). When you click on image with the tool the Scaling Information dialog box is opened, allowing you to change Width and Height separately. At the same time a Preview (possibly with a grid or an outline) is superimposed on the object and handles appear on corners and borders that you can click and drag to change dimensions.

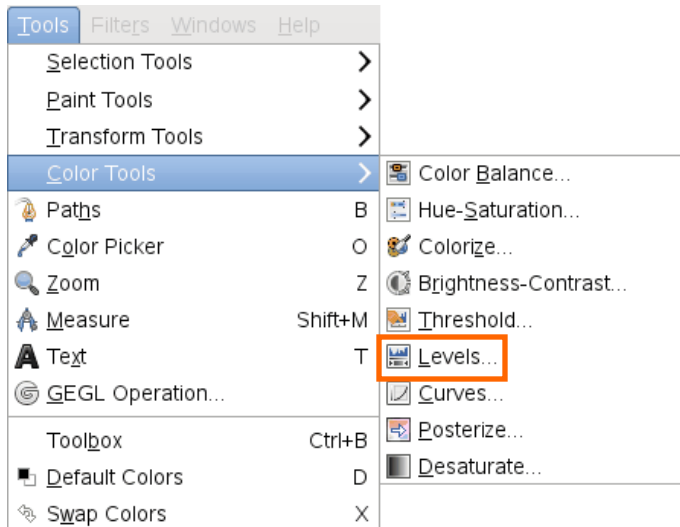


Tip: Hold down the **CTRL KEY** while you change the size of your image. If you do not, the image will not be scaled proportionately.

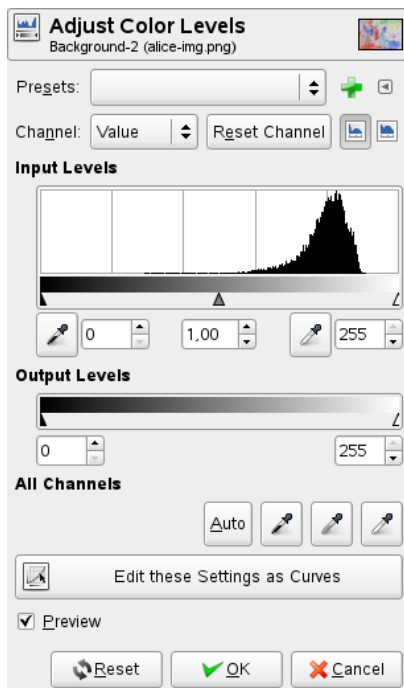
The GIMP Interface

Color Tools

There are several color tools, but we are only going to talk about one for now and that is **Levels**.



Levels will be used later when you want to create shadows with images. The dialog box looks like this:



You will only need to manipulate the **Input Levels** to create shadows so we will not go into the other components of the dialog box at this time.

The GIMP Interface

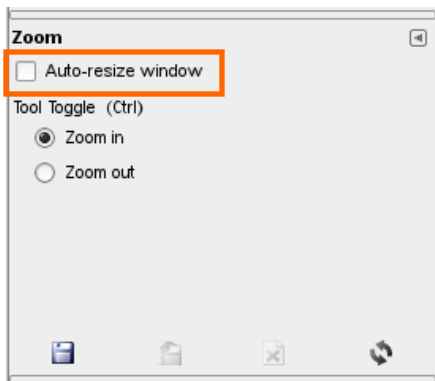
Zooming in GIMP

The Zoom Tool is used to change the zoom level of your working image. If you only click on the image, the zoom is applied to the whole image.



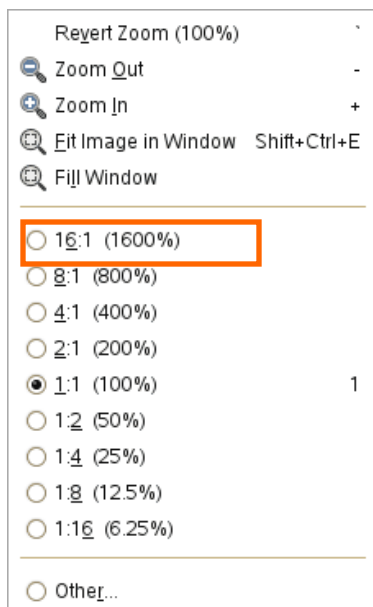
Auto-resize window

This option will allow the canvas to be resized if the zoom level dictates it.



Zoom submenu

The Zoom submenu contains various commands which affect the magnification of the image in the image window (zooming). Enlarging an image (zooming in) is useful if you need to work with high precision, making pixel-level image modifications or precise selections. On the other hand, reducing an image (zooming out) is handy for getting an overall impression of the image and seeing the results of changes which affect the entire image. Please note that zooming is not undoable, since it does not affect the image data, only the way it is displayed.



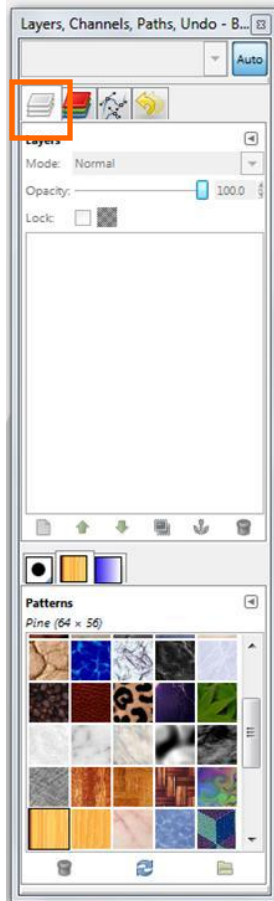
Tip: Remember that you have the Navigation dialog box that also allows you to zoom in and out of your active image. It also allows you to pan around the image without changing tools.

The GIMP Interface

Layers

A good way to visualize a GIMP image is as a stack of transparencies: in GIMP terminology, each individual transparency is called a *layer*. There is no limit, in principle, to the number of layers an image can have: only the amount of memory available on the system.

The organization of layers in an image is shown by the Layers dialog, which is the second most important type of dialog window in GIMP, after the Main Toolbox.



Each open image has at any time a single *active drawable*. A “drawable” is a GIMP concept that includes layers, but also several other types of things, such as channels, layer masks, and the selection mask. (Basically, a “drawable” is anything that can be drawn on with painting tools).

If a layer is currently active, it is shown highlighted in the Layers dialog, and its name is shown in the status area of the image window. If not, you can activate it by clicking on it. If none of the layers are highlighted, it means the active drawable is something other than a layer.



Tip: There are other tabs on this dialog, but we are only going to discuss the Layers tab circled above for this introduction.

The GIMP Interface

Layer Properties

Name

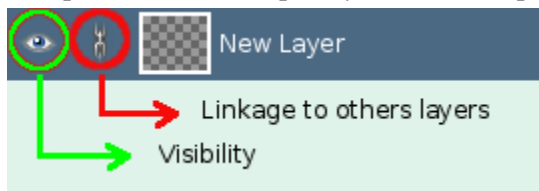
Every layer has a name. This is assigned automatically when the layer is created, but you can change it. You can change the name of a layer either by double-clicking on it in the Layers dialog or by right clicking on the layer.

Visibility

It is possible to temporarily remove a layer from an image, without destroying it, by clicking on the symbol in the Layers dialog. This is called “toggling the visibility” of the layer. Most operations on an image treat toggled-off layers as if they did not exist. When you work with images containing many layers, with varying opacity, you often can get a better picture of the contents of the layer you want to work on by hiding some of the other layers.

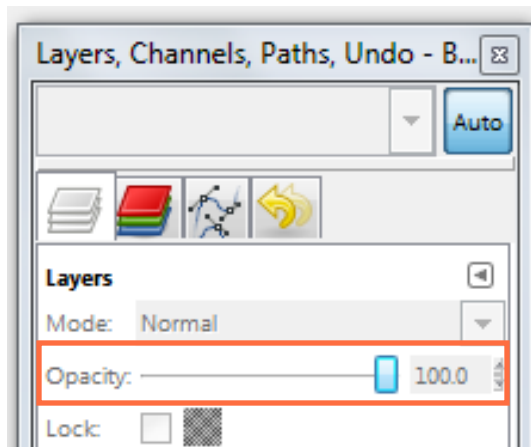
Linkage to other layers

If you click between the eye icon and the layer thumbnail, you get a chain icon, which enables you to group layers for operations on multiple layers (for example with the Move tool or a transform tool).



Opacity

The opacity of a layer determines the extent to which it lets colors from layers beneath it in the stack show through. Opacity ranges from 0 to 100, with 0 meaning complete transparency, and 100 meaning complete opacity.



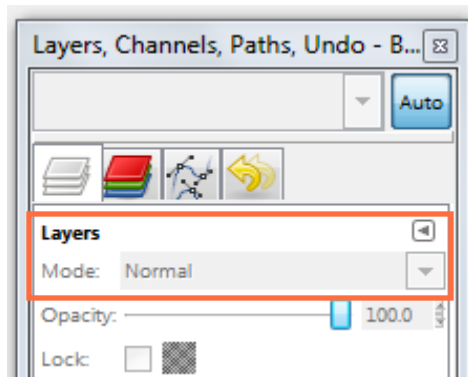
The GIMP Interface

Layer Modes

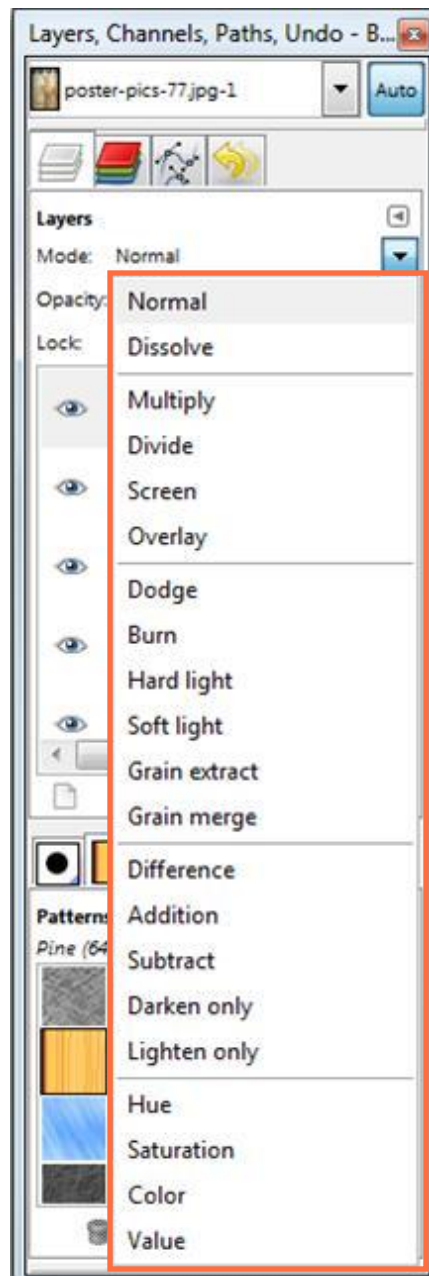
GIMP has twenty-one layer modes. Layer modes are also sometimes called “blending modes”. Selecting a layer mode changes the appearance of the layer or image, based on the layer or layers beneath it. If there is only one layer, the layer mode has no effect. There must therefore be at least two layers in the image to be able to use layer modes.

Layer modes permit complex color changes in the image. They are often used with a new layer which acts as a kind of mask. For example, if you put a solid white layer over an image and set the layer mode of the new layer to “Saturation”, the underlying visible layers will appear in shades of gray.

Where to find Mode:

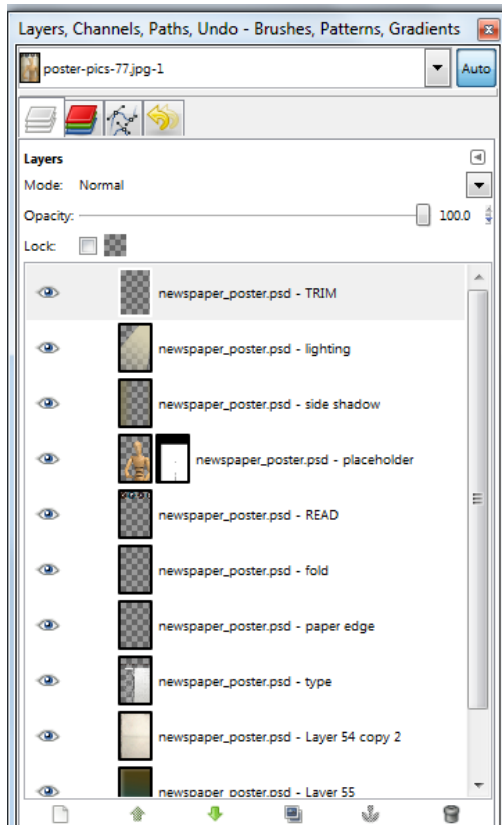


What the Drop Down Menu looks like:



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What the Layer Dialog looks like when an image has several layers:



Now you have been introduced to the basic elements of the GIMP Interface. It's time to start working with GIMP to create a READ poster!