BCA III YEAR

GIMP NOTES

UNIT-V

GIMP TOOLBOX

Rectangle Select tool →	← Oval select tool
Lasso too →	← Fuzzy select tool tool
Select by color →	← Scissors tool
Foreground select tool →	← Paths tool
Color picker tool →	← Zoom tool
Measure too →	← Move tool
Alignment too →	← Crop tool
Rotate tool →	← Scale tool
Shear tool →	← Rectangle Select tool
Flip tool →	← Cage transform
Text tool →	← Bucket fill tool
Blend tool →	← Pencil tool
Paintbrush tool →	← Eraser tool
Airbrush tool →	← Ink tool
Clone tool →	← Heal tool
Perspective tool →	← Blur/sharpen tool
Smudge tool →	← Dodge/Burn tool
Foreground color →	← Background color

The Tool Icons

Each graphic in the toolbox represents a specific function. The toolbox can be resized both in width and height. Overall, a distinction can be made between three or four function areas.

Selection Tools

In image processing, process either the whole image or only a specific section of it. GIMP needs to know to which area the following actions should be applied. Several selection tools help define a specific area. Once a selection has been made, it can be processed without affecting other parts of the image. Selection areas can also be

increased or decreased in size with the aid of **Shift** (additive selection) and **Ctrl** (subtractive selection). The cursor changes to show a plus or a minus sign.

Transform Tools

These functions are used to modify selections. Many functions are available, including crop, flip, and transform.

Paint Tools

The paint tools represent pencil, paintbrush, airbrush, pen, and finger (smudge) and try to emulate their real-world properties on the PC.

A fourth functional area to be classed with these three areas might include the color, fill, and brush options, which specify the paint color or the tip of the painting tool.

The Selection Tools

Rectangular select is the simplest selection tool. By keeping the left mouse button pressed and dragging the mouse at the same time, mark a rectangular area. When you release the mouse button, a frame indicates the selected area. If you press **Shift** after you begin drawing the selection, only perfect squares can be selected.

This tool works like rectangular select, except it selects a circular or elliptical area. It is used in the same way, except pressing **Shift** after you begin selecting limits the selection to perfect circles.

This is the first usable selection tool for photographs. The lasso allows a free-hand selection of an irregular shape. Press the left mouse button and follow the shape as required. When you release the mouse button, the start point and end point are joined with a straight line. An accurate selection is difficult, so working with an enlarged image is recommended.

The magic wand fuzzy selection tool selects an image area through color similarity of adjacent pixels. If the default settings are not suitable, change the threshold value in the option box or combine several selections using **Shift**. The magic wand is ideal for selecting irregular areas of similar color.

With a bit of effort, the Bezier Curves tool allows you to capture specific areas or objects of an image. With the aid of anchor points set with mouse clicks, draw clean, curved lines. One advantage of this technique is that you can change the selection with the aid of control points. Once you have marked the area required, just click inside it to select it. This tool requires some practice to master, but is invaluable for more advanced work. Selections made with this tool can also be saved and manipulated with the 'Paths' tab of the Layers, Channels, and Paths dialog.

As you click, Intelligent Scissors tries to draw a selection along color or brightness edges. Sometimes it works quite well. Modify the settings in the option box.

Transformation Tools

When Move is activated, grab and move your selection with the mouse.

The magnifier is not a true transformation tool because it only zooms the screen representation in or out. The image itself is not changed. To use the zoom out function, which reduces the image on the screen by a certain percentage, press and hold **Ctrl** while clicking with the mouse.

For a true enlargement of your image, open the context menu with a right-click in your image and select 'Image' -> 'Scale Image'. In the dialog box that opens, change the height and width of the image by percentages or by pixel values.

Use this tool to crop and resize your image. For an appealing impression for landscape photographs, for example, it is recommended to assign the sky one-third and the landscape two-thirds of the image height. Using the mouse, click and drag to open a rectangle. A click inside this rectangle crops the surrounding area. You can always undo this immediately with **Ctrl�+�Z**. You can also change the size of the rectangle. Resize the selection by grabbing and moving the top left or bottom right corners. Move the entire rectangle by grabbing and moving the bottom left or top right corners.

This icon hides a multitude of functionalities that might confuse a beginner. Process the whole image by clicking the tool icon first then the image or a portion by first making a selection then clicking the tool icon.

Four functions are available: rotate the image or the selection around an arbitrary rotation point, enlarge or reduce (Scaling), convert a rectangle into a trapezoid (Shearing),

or distort the perspective of an area. The default setting is Rotation. Other functions can be specified in the option box opened by double-clicking the tool icon.

A simple tool that flips (mirrors) the selected area horizontally or vertically.

Once you have modified your whole image or a selection with the aid of a transformation tool, reconnect this floating selection to the image. Prior to this integration, you can still modify the result of your transformations. There are several possibilities for integrating the changes into the image —use the anchor layer keyboard shortcut (**Ctrl�+�H**), click in the image somewhere outside the selection, or choose a different selection tool and apply it.

Paint Tools

The first few tools in the following list are somewhat different from the other paint tools. They are included in this section, however, because they are used to add colors or text rather than modify it. The main paint tools provided by GIMP have particular properties in the real world that are emulated by the program. Set the appropriate options to simulate various pencils or to adjust the paintbrush to your personal requirements. In the option boxes of the paint tools, find the slider 'Opacity'. This is used to set the opacity of the color employed. With the 'Mode' drop-down box, specify how painted lines or surfaces should be integrated into the image. Depending on the tool, the different modes have different effects.

The T stands for text input. In GIMP, text input is done in two ways and many options are available. Double-click the tool to open the option box. By activating or deactivating 'Use Dynamic Text', select multiline text input with alignment or single line text input. A click in the image with the T�tool activated opens the corresponding dialog box in which to enter text and select font, size, and other parameters.

GIMP provides a relatively simple text tool. Many text effects, such as shadows or gradients, must theoretically be input by hand. In practice, however, 'Script-Fu' and the 'Filters' submenu provide many automatic modification procedures, which have, in part, been specifically designed for use with text.

The color picker allows a controlled selection of a color from your image and transfers it to the color selection box. When you click a specific color in the image with the color picker tool, this color is selected. With it, quickly find, for example, a specific skin tone needed to retouch a photograph.

With the paint bucket, fill a selected area with color. Instead of a color, it can also fill with a pattern. Prior to the filling action, activate 'Pattern Fill'. Everything in the selection is then painted over with the selected settings.

The icon represents a color or grayscale gradient. GIMP has several predefined gradients to use to fill the selected area. This tool is relatively complicated and requires some practice, especially if you want to overlay an image with transparent color gradients.

With the virtual pencil, as with a real pencil, draw free-hand lines. Select the type of line and the width and shape of the pencil point with the brush dialog. To access it, double-click the brush icon in the bottom right corner of the toolbox or select 'File' -> 'Dialogs' -> 'Brushes'. Pencil points are available that do not actually exist in the real world. Make your pencil point extra-fine or extra-thick or select one of the special shapes.

The paintbrush draws with a softer, more liquid effect than the pencil. In the appropriate option box, set a fade out (the color intensity slowly diminishes while painting) or a gradient (selection via the gradient setting options). When the fade out option is activated, release the paintbrush and begin again to apply more color.

The eraser can both erase and unerase. The brush selection also sets the shape and size of the eraser.

The airbrush applies color like a real airbrush. Change the 'Pressure' and use the many different brush settings. This tool is ideal for use with a pressure-sensitive graphics tablet.

The clone tool (the icon represents a rubber stamp) is the ultimate instrument for photo retouching. It can be used to specify parts of images that are then cloned. In practice, this means that you specify very precisely which part of the image to copy where and in what form. This has relatively little to do with the 'Cut' and 'Paste' functions. It uses the paint functionality, allowing you to set the shape and opacity of your virtual rubber stamp.

Things become interesting, for example, if you have an old photograph with white stains. Activate the Clone tool and, if needed, its option box. Keep **Shift** held down and click the image area to use for the copy. Then release the mouse button and place the cursor on the damaged image area. If you now press the left mouse button and move the mouse, the image area marked in the first step of the procedure is inserted. When you move the mouse upwards, the area copied moves upwards, too. The point is marked by a crosshair. Depending on the brush settings, a small or a large radius is copied and, depending on the tool settings, copying is carried out in a translucent or opaque manner.

The Convolver tool (the icon shows a drop of water) is used for precise manual blurring or sharpening of image parts. Which of the two actions is active is set in the option box. The brush selection determines size and borders of the manipulation area. Blurring lays a kind of haze over the image or, as when using a drop of water on a water color painting, blurs the *painted* areas. Sharpening is the opposite. Here the program attempts to increase the contrast and make a neater separation of edges. Sharpening works well if you later look at your image from a distance. It also means a loss of information, however. Seen from very close up, the images look extremely pixellated.

The pen can be used for drawing and also for calligraphy. Writing well, however, can only be achieved with the aid of a graphics tablet. In the tool settings, adapt the shape of the pen to your own requirements.

The tool icon that looks like a pin is, in reality, a thin wooden stick with a glued-on opaque cardboard circle. Such an instrument is needed in a photographic laboratory for the perfect exposure of a manual paper copy. As only a small part of the negatives (or positives) is exposed perfectly, this instrument is moved over the areas that would otherwise become too dark while the paper is exposed. Thus, the exposure of specific problem areas can be adjusted individually. The opposite is a piece of cardboard with a little hole in it for postexposure. Both functions are fulfilled by this GIMP tool. Dodge (make lighter) individual image areas or burn (make darker) them. To create soft transitional borders, use a diffuse brush shape.

The finger shown in this tool icon moves over the color just applied to the paper and smudges it. This can be used to create very interesting effects.

With the calipers, measure distances and angles. In the associated option box, activate 'Use Info Window'.

Color, Brush, Pattern, and Gradient Selection

The selected colors, brush, pattern, and gradient are shown in your toolbox. The color selection functions are on the left. On the right are the currently active brush shape, the active pattern, and the active gradient. Clicking each of these opens a dialog window for individual configuration.

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.
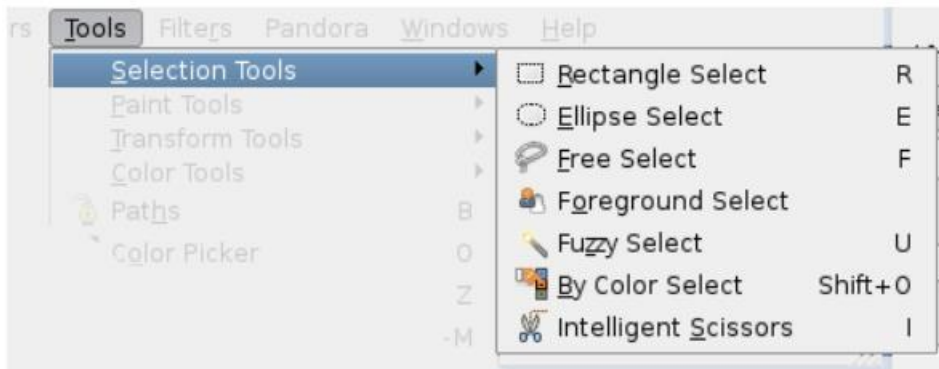
There are seven selection tools:

- 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.

In some ways the Path tool can also be thought of as a selection tool: any closed path can be converted into a selection. It also can do a great deal more, though, and does not share the same set of options with the other selection tools.

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

Ctrl

When creating a selection, holding down the **Ctrl** key can have two different actions according to the way you use it:

- Holding down the key *while drawing* the selection toggles the "Expand from center" option.

- If you hold down the **Ctrl** key *before drawing a selection*, this new selection switches to the Subtract mode. So, this new selection will be subtracted from an existing one as soon as you release the click, as far as they have common pixels.

Alt

Holding **Alt** will allow movement of the current selection (only its frame, not its content). If the whole image is moved instead of the selection only, try **Shift**+**Alt**. Note that the **Alt** key is sometimes intercepted by the windowing system (meaning that GIMP never knows that it was pressed), so this may not work for everybody.

Shift

When creating a selection, holding down the **Shift** key can have two different actions according to the way you use it:

- If you hold down the key *before clicking* to start the selection, this selection will be in *Addition* mode as long as you press the key.

- If you hold down the **Shift** key *after clicking* to start the selection, the effect will depend on the tool you are using: for example, the selection will be a square with the Rectangle Select tool.

Ctrl+**Shift**

Using **Ctrl**+**Shift** together can do a variety of things, depending on which tool is used. Common to all selection tools is that the selection mode will be switched to intersection, so that after the operation is finished, the selection will consist of the intersection of the region traced out with the pre-existing selection. It is an exercise for the reader to play with the various combinations available when performing selections while holding **Ctrl**+**Shift** and releasing either both or either prior to releasing the mouse **Left Button**.

Key modifiers to move selections

Ctrl+**Alt**+**Left-click-and-drag** and **Shift**+**Alt**+**Left-click-and-drag** are used to move selections.

Space bar

Pressing the **Space** bar while using a selection tool transforms this tool into the Navigation cross as long as you press the bar, allowing you to pan around the image instead of using the scroll-bars when your image is bigger than the canvas. This is the default option: in Preferences/Image Windows, you can toggle the Space bar to the Move tool.

1. **Rectangle Selection**

The Rectangle Selection tool is designed to select rectangular regions of the active layer: it is the most basic of the selection tools, but very commonly used.

This tool is also used for rendering a rectangle on an image. To render a filled rectangle, create a rectangular selection, and then fill it using the Bucket Fill tool. To create a rectangular outline, the simplest and most flexible approach is to create a rectangular selection and then stroke it.

You can access the Selection Tool in different ways:

- from the image menu bar Tools → Selection Tools → Rectangle Select,

- by clicking on the tool icon ⬜in the ToolBox,

- by using the keyboard shortcut **R**.

Tool Options

Mode; Antialiasing; Feather edges
Common select options.

Rounded corners
If you enable this option, a slider appears. You can use this to adjust the radius that is used to round the corners of the selection.

Expand from center
If you enable this option, the point the selection is started by pressing the mouse button is used as center of the selected area.

Fixed
This menu allows you the option of constraining the shape of the rectangle in different ways.

Aspect ratio
This option allows you to design and resize the selection while keeping the aspect ratio fixed and written within the relevant box. By default the ratio is 1:1 (so we have a square) but it can be changed. With the two little landscape and picture icons, you can invert this ratio.

Width
With this choice you can fix the width of the selection.

Height
With this choice you can fix the height of the selection.

Size
With this choice you can fix the width and height of the selection.

Position
These two text fields contain the current horizontal and vertical coordinates of the upper left corner of the selection. You can use these fields to adjust the selection position precisely.

Size
These two text fields contain the current width and height of the the selection. You can use these fields to adjust the selection size precisely.

Highlight

If you enable this option, the selected area is emphasized by a surrounding mask to make visual selection much easier.

Guides

With this menu you can select the type of guides that is shown within the selection to make the creation of a selection easier, respecting *Photo composition rules*.

Six options are available:

- No Guides

- Center lines

- Rule of thirds

- Rule of fifths

- Golden sections

- Diagonal lines

2. **Ellipse Selection**

The Ellipse Selection tool is designed to select circular and elliptical regions from an image, with high-quality anti-aliasing if you want it.

This tool is also used for rendering a circle or ellipse on an image. To render a filled ellipse, create an elliptical selection, and then fill it using the Bucket Fill tool. To create an elliptical outline, the simplest and most flexible approach is to create an elliptical selection and then stroke it.

You can access the Ellipse Selection Tool in different ways:

- From the image menu bar Tools → Selection Tools → Ellipse Select;

- By clicking on the tool icon in the ToolBox,

- By using the keyboard shortcut E .

3. **Free Selection (Lasso)**

The Free Selection tool, or Lasso, lets you create a selection by drawing it with the pointer.

you can use it in two ways. First create the *starting point* clicking on your image. Then,

- Maintaining the mouse button pressed (i.e click-and-drag), drag to draw a free hand selection. When end point comes superimposed on the starting point, release the mouse button to close the selection.

  If you click on the end point, it turns accompanied by a moving cross. Then, dragging enlarges the shape.

- Or release the mouse button and drag to draw a polygonal selection. When end point comes superimposed on the starting point, click to close the selection.

You can access the Lasso Tool in different ways:

- From the image menu bar Tools → Selection Tools → Free Select,

- by clicking on the tool icon 🪢 in the ToolBox,

- by using the keyboard shortcut F .

4. **Fuzzy selection (Magic wand)**

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

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 Wand is a good tool for selecting objects with sharp edges.

You can access the Magic Wand Tool in different ways:

- From the image menu bar Tools → Selection Tools → Fuzzy Select,

- by clicking on the tool icon ✎ in the ToolBox,

- by using the keyboard shortcut U.

5. **Select By Color**

The Select by Color tool is designed to select areas of an image based on color similarity. It works a lot like the Fuzzy Select tool ("Magic Wand"). The main difference between them is that the Magic Wand selects *contiguous* regions, with all parts connected to the starting point by paths containing no large gaps; while the Select by Color tool selects all pixels that are sufficiently similar in color to the pixel you click on, regardless of where they are located.

You can access the Select by Color Tool in different ways:

- From the image menu bar Tools → Selection Tools → By Color Select,

- by clicking on the tool icon in the ToolBox,

- by using the keyboard shortcut Shift + O.

The "Image" Menu
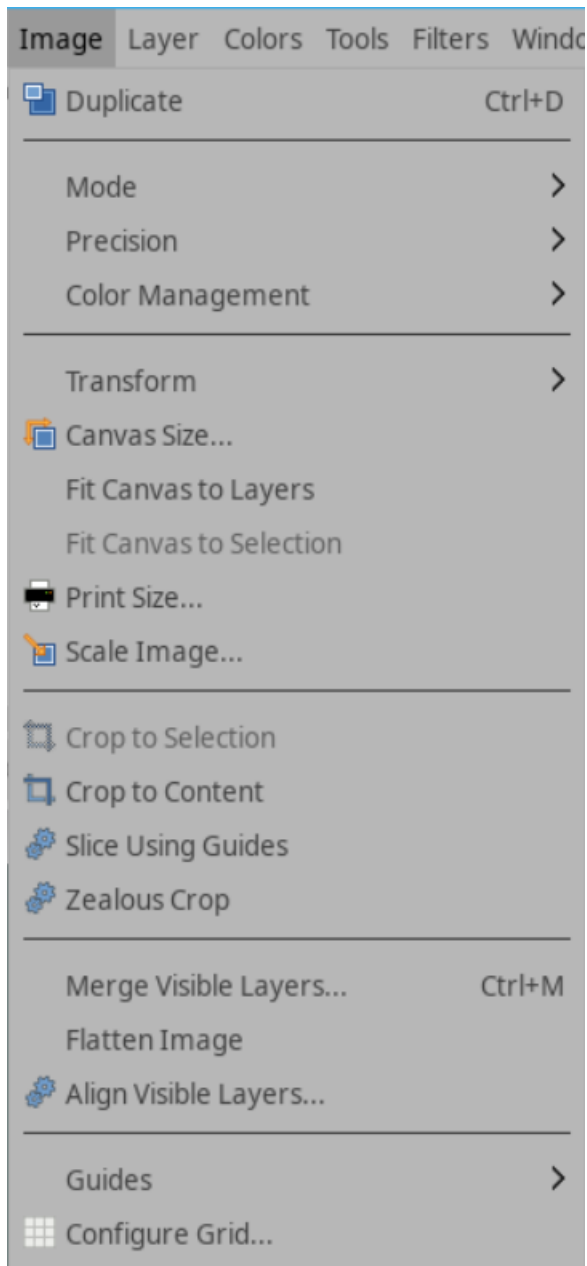
The Image menu contains commands which use or affect the entire image in some way, not just the active layer or some other specific part of the image.

1.Duplicate
The Duplicate command creates a new image which is an exact copy of the current one, with all of its layers, channels and paths. The GIMP Clipboard and the History are not affected.

- You can access this command from the image menubar through Image → Duplicate,

- or by using the keyboard shortcut **Ctrl**+**D**.

2.Mode

The Mode submenu contains commands which let you change the color mode of the image. There are three modes.

You can access this submenu from the image menubar through Image → Mode.

The RGB command converts your image to RGB mode.

It is possible to convert an RGB image to Grayscale or Indexed mode, but be careful: once you have saved the image, you can no longer retrieve the RGB colors, so you should work on a copy of your image.

You can access this command from the image menu bar through Image → Mode → RGB.

You can use the Grayscale command to convert your image to grayscale. The resulting grayscale image will have a single channel composed of various shades of gray ranging from black to white.

You can access this command from the image menubar through Image → Mode → Grayscale.

The Indexed command converts your image to indexed mode.

You can access this command from the image menubar through Image → Mode → Indexed.

The Indexed command opens the Convert Image to Indexed Colors dialog.
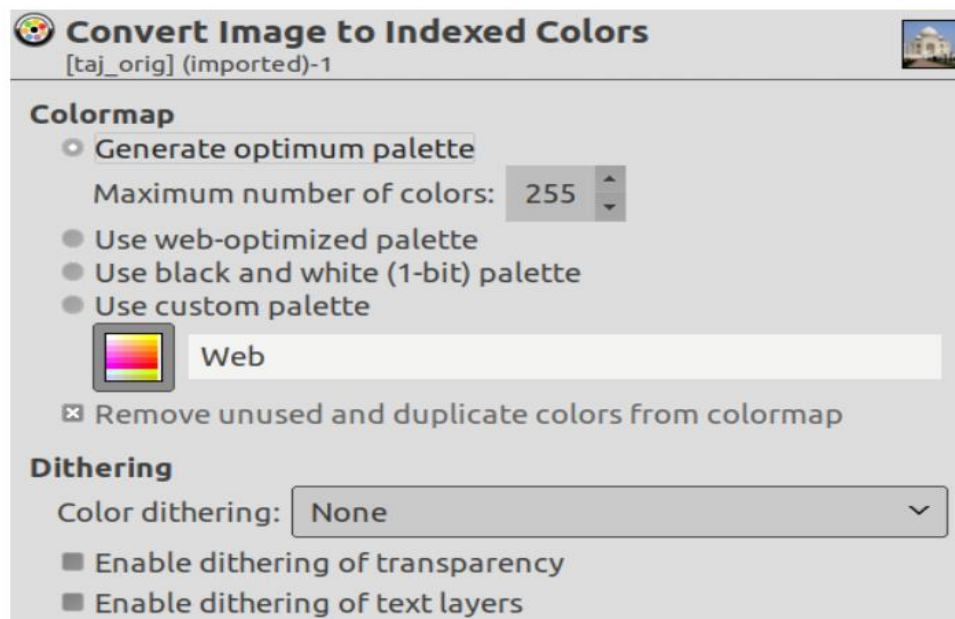
3.Transform
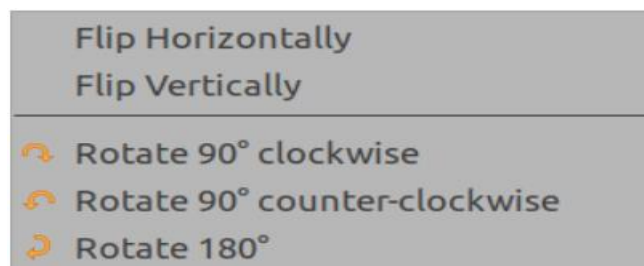
The items on the Transform submenu transform the image by flipping it, rotating it or cropping it.

You can access this submenu from the image menubar through Image → Transform.

The Transform submenu has the following commands:

1. Flip Horizontally; Flip Vertically
   You can flip the image, or turn it over like a card, by using the Flip Horizontally or Flip Vertically commands. These commands work on the whole image. To flip a selection, use the Flip Tool. To flip a layer, use the functions of the Layer → Transform menu or the Flip Tool.

   - You can access the horizontal flip command from the image menubar through Image → Transform → Flip Horizontally.

   - You can access the vertical flip command from the image menubar through Image → Transform → Flip Vertically.

2. Rotation

   You can rotate the image 90° clockwise or counter-clockwise, or rotate it 180°, by using the rotation commands on the Transform submenu of the Image menu. These commands can be used to change between Portrait and Landscape orientation. They work on the whole image. If you want to rotate the image at a different angle, rotate a selection or rotate a layer, use the Rotate Tool. You can also rotate a layer by using the Layer Transform menu.

You can access these three commands from the image menubar through

- Image → Transform → Rotate 90 degrees CW,

- Image → Transform → Rotate 90 degrees CCW and

- Image → Transform → Rotate 180°.

4. Print Size

This command opens the "Set Image Print Resolution" dialog that allows you to change the *dimensions of a printed image* and its *resolution*. This command does not change the number of pixels in the image and it does not resample the image.

You can access this dialog from the image menubar through Image → Print Size

The output resolution determines the number of pixels used per unit length for the printed image. Do not confuse the output resolution with the printer's resolution, which is a printer feature and expressed in dpi (dots per inch); several dots are used to print a pixel.

When the dialog is displayed, the resolution shown in the boxes is the resolution of the original image. If you increase the output resolution, the printed page will be smaller, since more pixels are used per unit of length. Conversely, and for the same reason, resizing the image modifies the resolution.

Increasing the resolution results in increasing the sharpness of the printed page. This is quite different from simply reducing the image size by scaling it, since no pixels (and no image information) are removed.

Width; Height

You can set the printing Width and Height by using the text boxes. You can also choose the units for these values from the dropdown list.

As soon as you change the Width or the Height, the X and/or Y resolution values automatically change accordingly. If the two resolution values remain linked, the relationship of the width to the height of the image is also automatically maintained. If you would like to set these values independently of each other, simply click on the chain symbol to break the link.

X resolution; Y resolution

You can set the resolution used to calculate the printed width and height from the physical size of the image, that is, the number of pixels in it.

Use the text boxes to change these resolution values. They can be linked to keep their relationship constant. The closed chain symbol between the two boxes indicates that the values are linked together. If you break the link by clicking on the chain symbol, you will be able to set the values independently of each other.

5. Scale Image

The Scale Image command enlarges or reduces the physical size of the image by changing the number of pixels it contains. It changes the size of the contents of the image and resizes the canvas accordingly.

It operates on the entire image. If your image has layers of different sizes, making the image smaller could shrink some of them down to nothing, since a layer cannot be less than one pixel wide or high. If this happens, you will be warned before the operation is performed.

If you only want to scale a particular layer, use the Scale Layer command.

You can access this command from the image menubar through Image → Scale Image
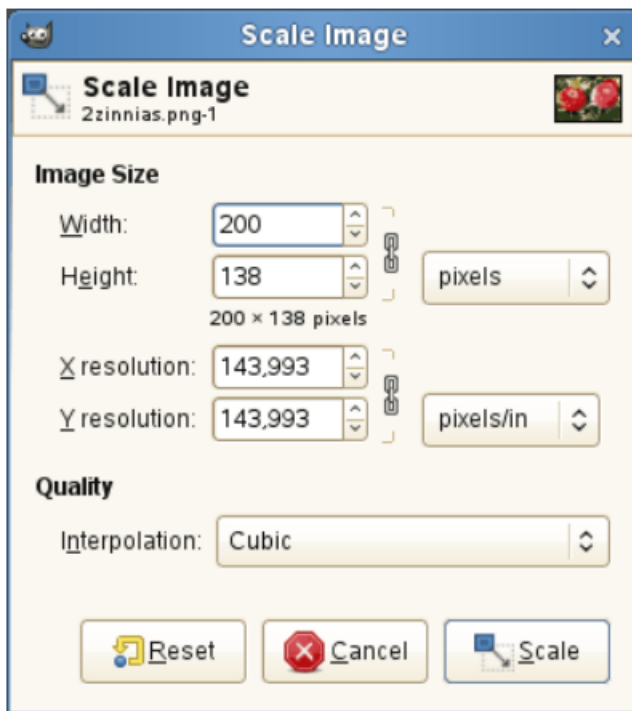
Width; Height

When you click on the Scale command, the dialog displays the dimensions of the original image in pixels. You can set the Width and the Height you want to give to your image by adding or removing pixels. If the chain icon next to the Width and Height boxes is unbroken, the Width and Height will stay in the same proportion to each other. If you break the chain by clicking on it, you can set them independently, but this will distort the image.

However, you do not have to set the dimensions in pixels. You can choose different units from the drop-down menu. If you choose percent as the units, you can set the image size relative to its original size. You can also use physical units, such as inches or millimeters. If you do that, you should set the X resolution and Y resolution fields to appropriate values, because they are used to convert between physical units and image dimensions in pixels.

X resolution; Y resolution

You can set the printing resolution for the image in the X resolution and Y resolution fields. You can also change the units of measurement by using the drop-down menu.

Quality

To change the image size, either some pixels have to be removed or new pixels must be added. The process you use determines the quality of the result. The Interpolation drop down list provides a selection of available methods of interpolating the color of pixels in a scaled image.

6. Flatten Image

The Flatten Image command merges all of the layers of the image into a single layer with no alpha channel. After the image is flattened, it has the same appearance it had before. The difference is that all of the image contents are in a single layer without transparency. If there are any areas which are transparent through all of the layers of the original image, the background color is visible.

This operation makes significant changes to the structure of the image. It is normally only necessary when you would like to save an image in a format which does not support levels or transparency (an alpha channel).

You can access this command from the image menubar through Image → Flatten Image.

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.

1. Crop
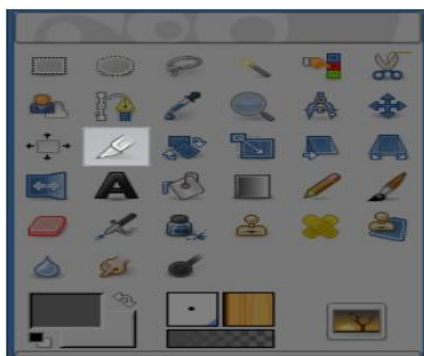
The Crop Tool is used to crop or clip an image. It works on all the layers of the image, visible and invisible.

You can activate this tool in different ways:

- From the image menu bar Tools → Transform tools → Crop,

- by clicking the tool icon: ✎ in the ToolBox,

- by using the keyboard shortcut **Shift** + **C**.
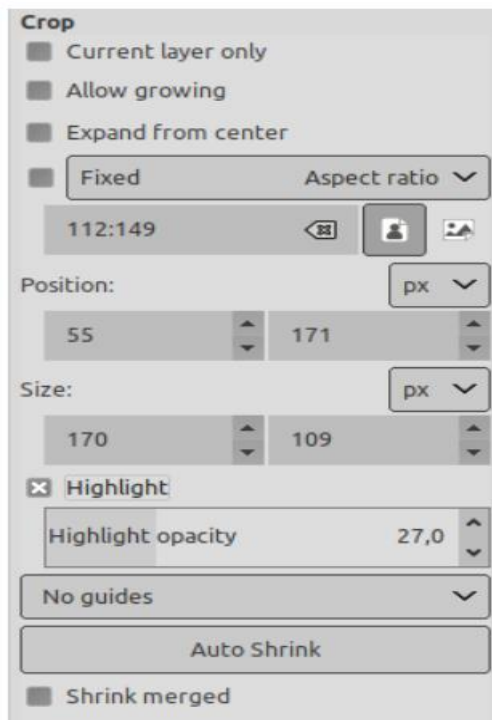
Normally, tool options are displayed in a window attached under the Toolbox as soon as you activate a tool. If they are not, you can access them from the image menu bar through Windows → Dockable Windows → Tool Options which opens the option window of the selected tool.

2. Flip
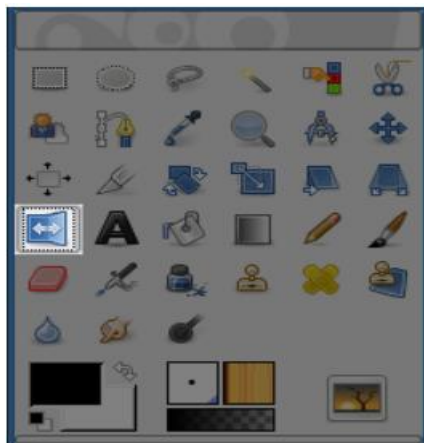
The Flip tool provides the ability to flip layers or selections either horizontally or vertically. When a selection is flipped, a new layer with a Floating Selection is created. You can use this tool to create reflections.

You can access the Flip Tool in different ways:

- From the image menu bar Tools/ Transform Tools Flip,

- By clicking the tool icon: in Toolbox,

- by using the $\boxed{\textbf{Shift}}$ + $\boxed{\textbf{F}}$ key combination.

  $\boxed{\textbf{Ctrl}}$ lets you change the modes between horizontal and vertical flipping.
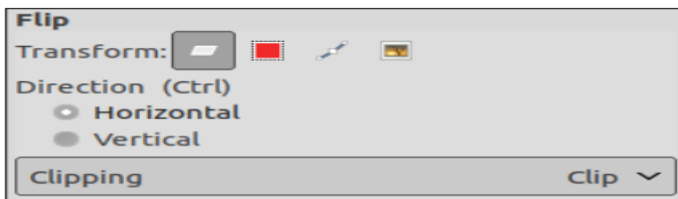
3. Move
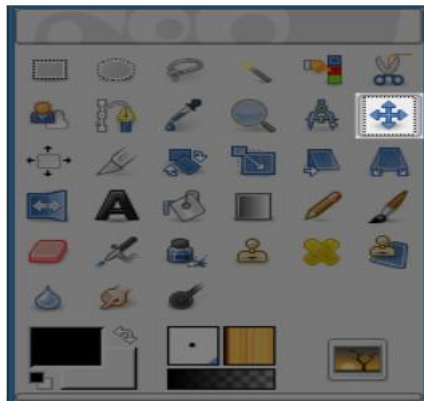
The Move Tool is used to move layers, selections, paths or guides. It works also on texts.

You can access the Move Tool in different ways:

- From the image menu bar Tools → Transform Tools → Move,

- By clicking the tool icon: ⊕.

- By using the keyboard shortcut $\boxed{\textbf{M}}$.

- The Move tool is automatically activated when you create a guide.
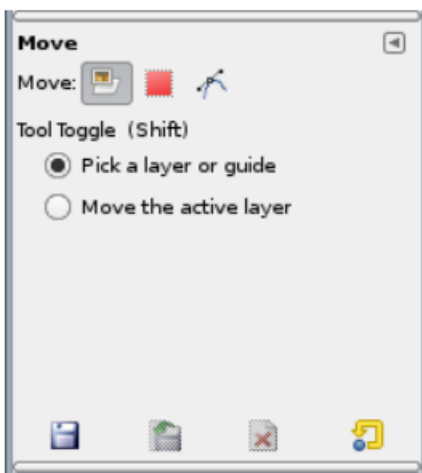
4. Perspective
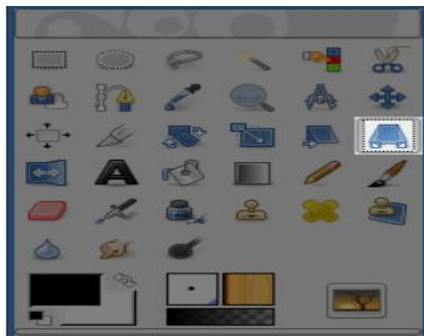
The Perspective Tool is used to change the "perspective" of the active layer content, of a selection content or of a path. When you click on the image, according to the Preview type you have selected, a rectangular frame or a grid pops up around the selection (or around the whole layer if there is no selection), with a handle on each of the four corners. By moving these handles by click-and-drag, you can modify the perspective. At the same time, a "Transformation information" pops up, which lets you valid the transformation. At the center of the element, a circle lets you move the element by click-and-drag.

You can access the Perspective tool in different ways:

- From the image menu bar Tools/ Transform Tools Perspective,

- By clicking the tool icon: in Toolbox,

- By using the **Shift** + **P** key combination.
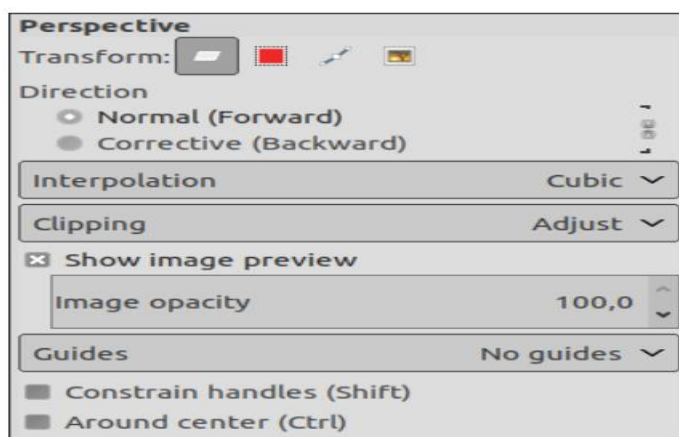
## 5. Rotate
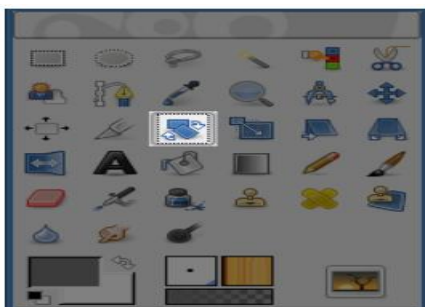
This tool is used to rotate the active layer, a selection or a path. When you click on the image or the selection with this tool a *Rotation adjustment* dialog is opened. There, you can set the rotation axis, marked with a point, and the rotation angle. You can do the same by dragging the mouse pointer on the image or the rotation point.

You can access the Rotate Tool in different ways:

- from the image menu bar Tools → Transform Tools → Rotate,

- by clicking the tool icon: in the Toolbox,

- by using the Shift + R key combination.
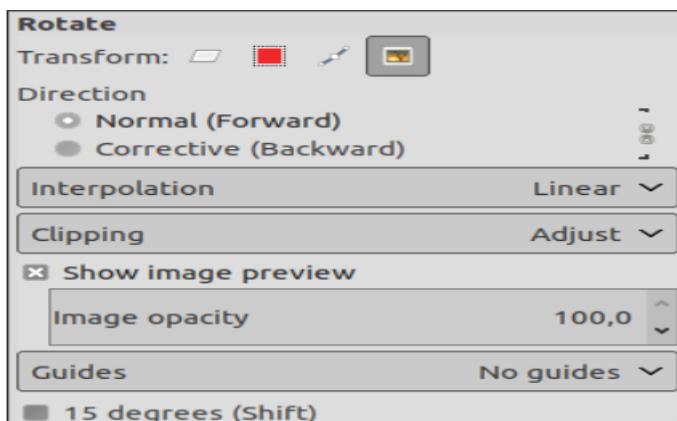
6. Scale

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 to change separately Width and Height. 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. At center, a square with a cross inside, to move the preview (mouse pointer is a moving cross then).

You can access the Scale Tool in different ways:

- from the image menu bar Tools → Transform Tools → Scale,

- by clicking the tool icon: in the Toolbox,

- by using the **Shift**+**S** key combination.
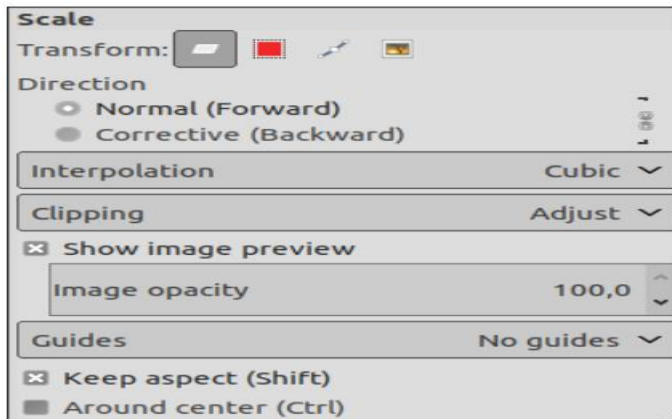

6. Shear
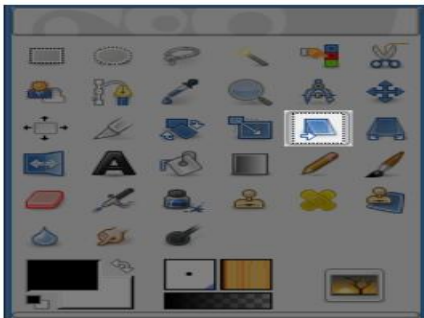
Shear tool is used to shift one part of an image, a layer, a selection or a path to a direction and the other part to the opposite direction. For instance, a horizontal shearing will shift the upper part to the right and the lower part to the left. A rectangle becomes a diamond. This is not a rotation: the image is distorted. To use this tool after selecting, click on the image or the selection: a grid is possibly superimposed and the Shearing Information dialog is opened. By dragging the mouse pointer on the image you distort the image, horizontally or vertically according to the direction given to the pointer. When you are satisfied, click on the Shear button in the info dialog to validate.

You can access the Shear Tool in different ways:

- from the image menu bar Tools → Transform Tools → Shear,

- by clicking on the tool icon: in Toolbox,

- by using the **Shift**+**S** key combination.
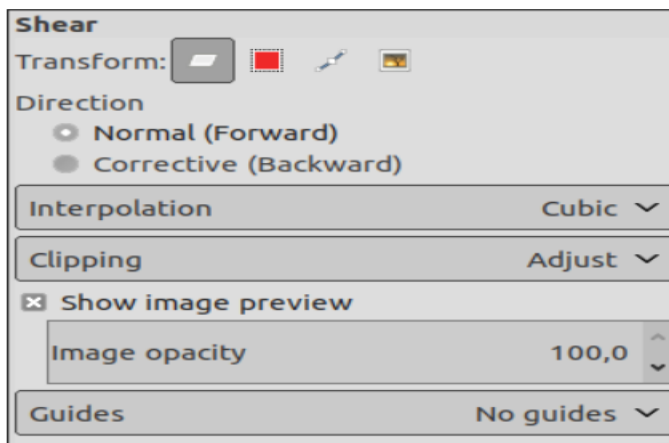
Working with Layers
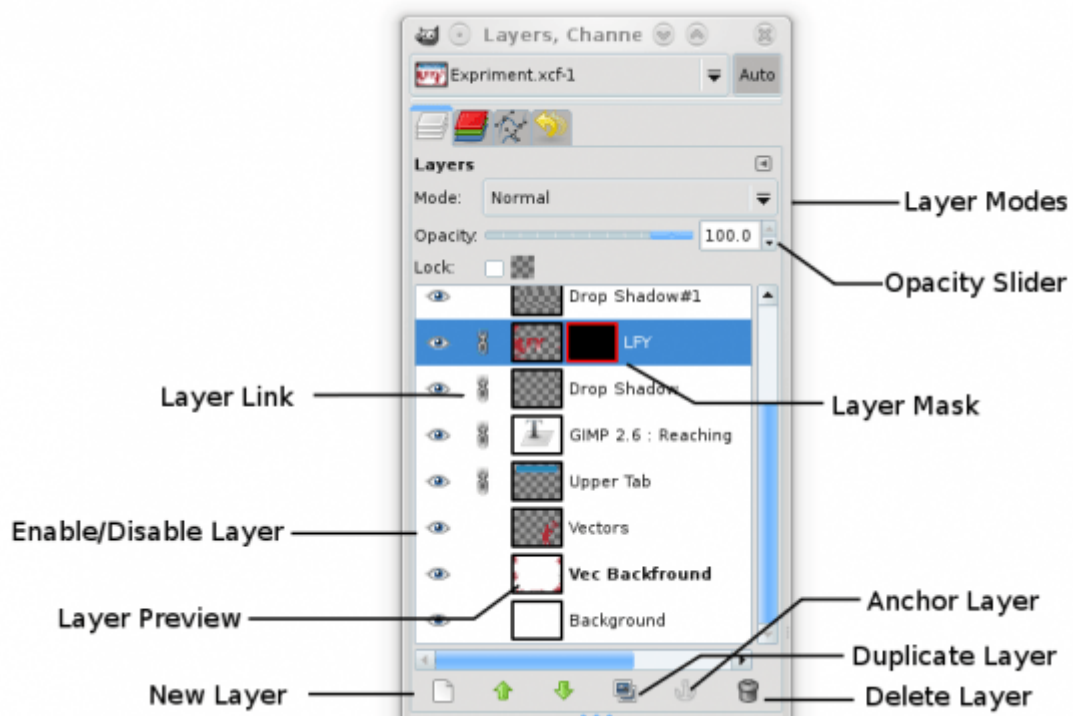
1. Creating a New Blank Layer

To add a new layer, right-click on the layer panel and select New layer from the menu. Alternatively, click on the new layer button at the bottom of the layer panel. Similarly, you can add multiple layers.

*Use the shortcut Shift + Ctrl + N to create a new layer on Windows.*
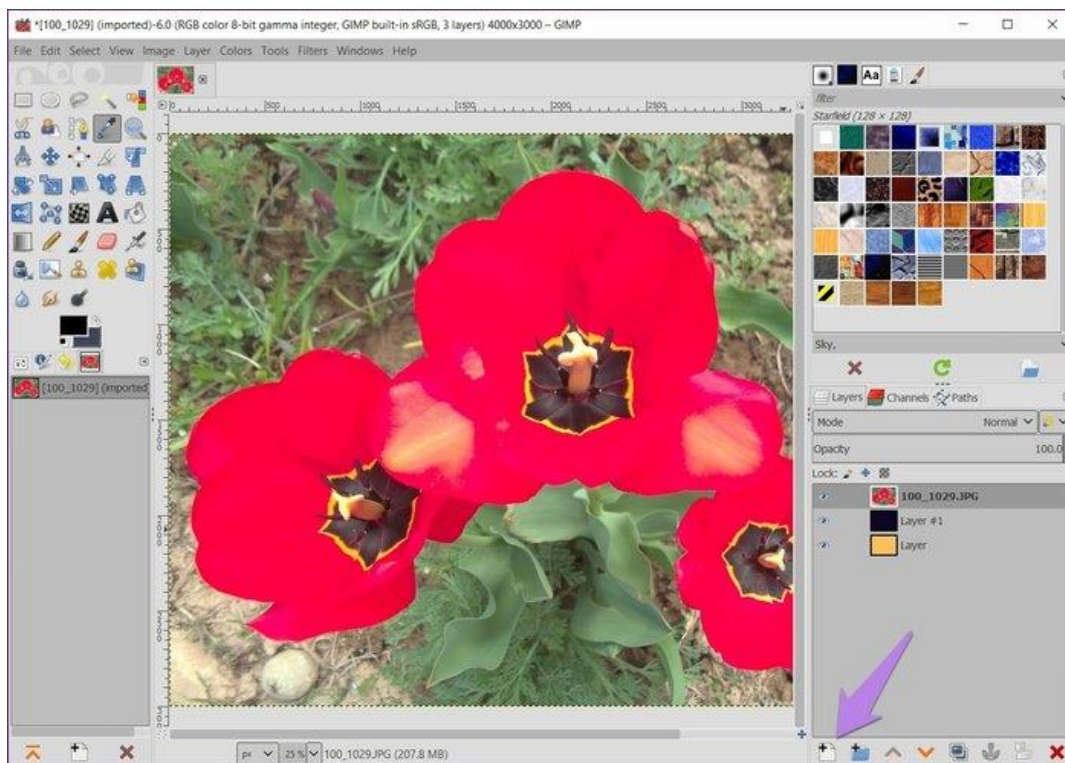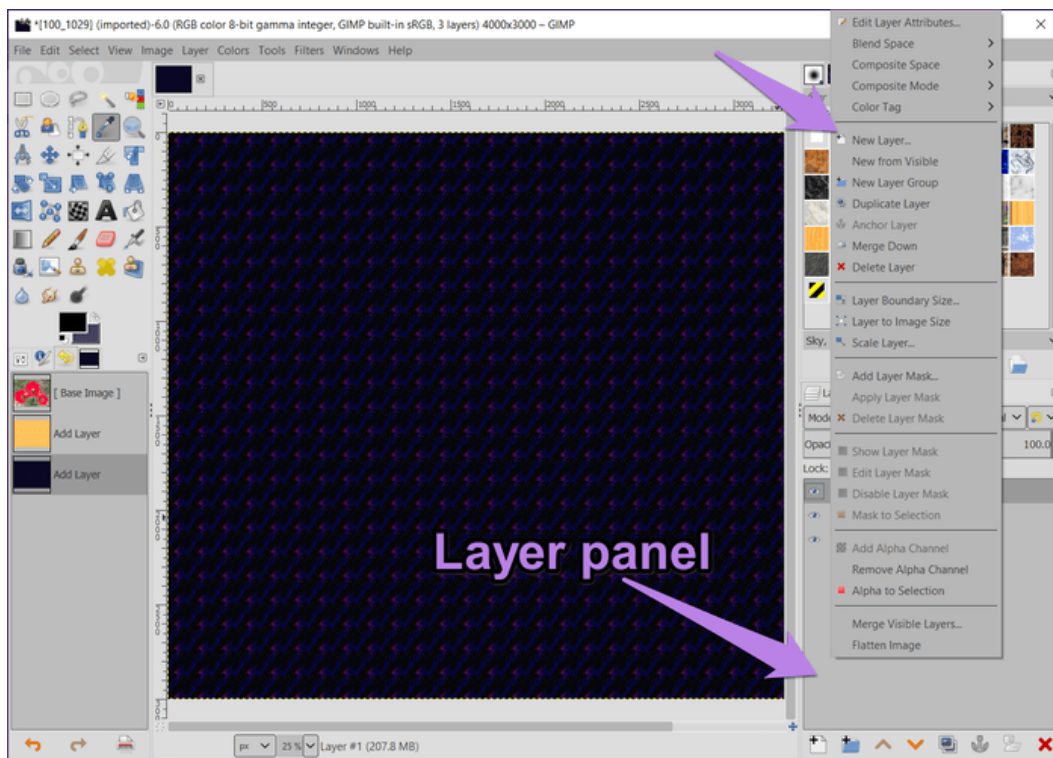
When adding a layer to an existing image, the layer size will be the same as that of the image. However, if you are creating a new image, you will have to set the size. The layer size can be changed in both the cases under Height and Width setting.
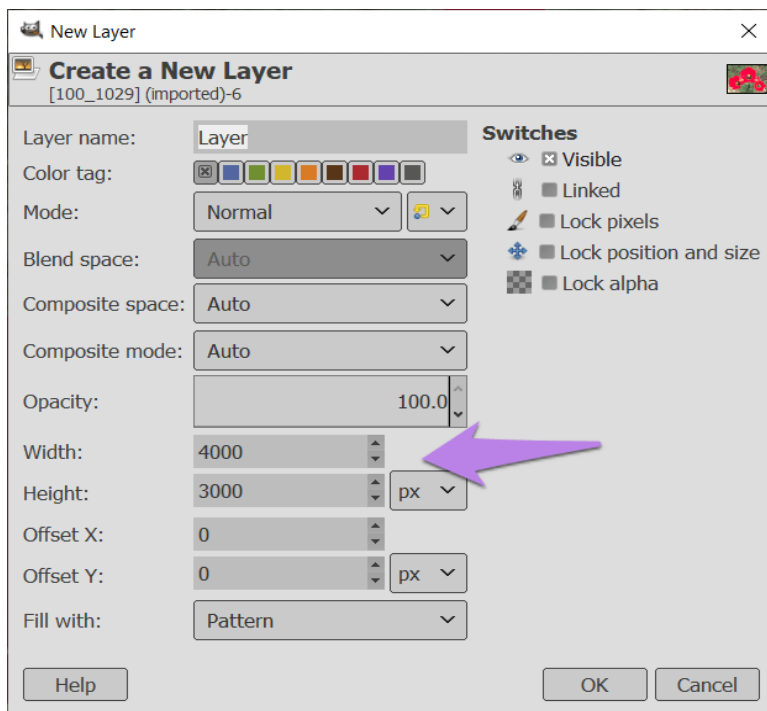
Fill Layer With

One of the essential properties of a layer is the 'Fill With' option. When you are adding a new layer, you will be asked to choose the color you want to fill in the layer. You get five options: foreground, background, white, transparency, and pattern.
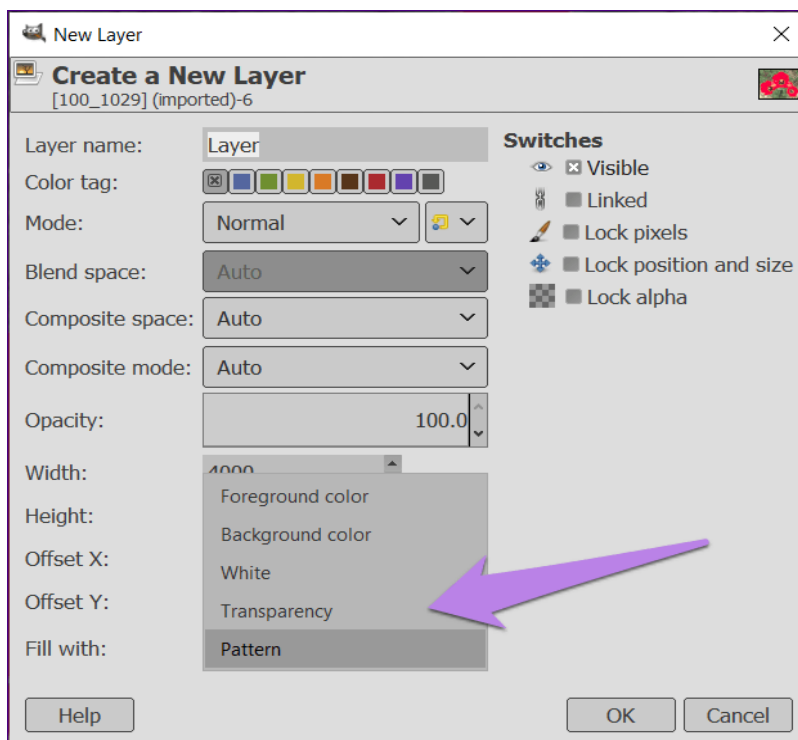
Choosing the foreground and background will add the respective colors present in the color dialog. White, as is obvious, will fill it with white color and pattern adds the selected pattern.

RENAME LAYERS

Layers are named as layer 1, layer 2, and so on by default. If you are working with multiple layers, giving them a proper name comes handy. There are some ways you can rename them. First, you can do it in the New Layer window itself while creating a layer.
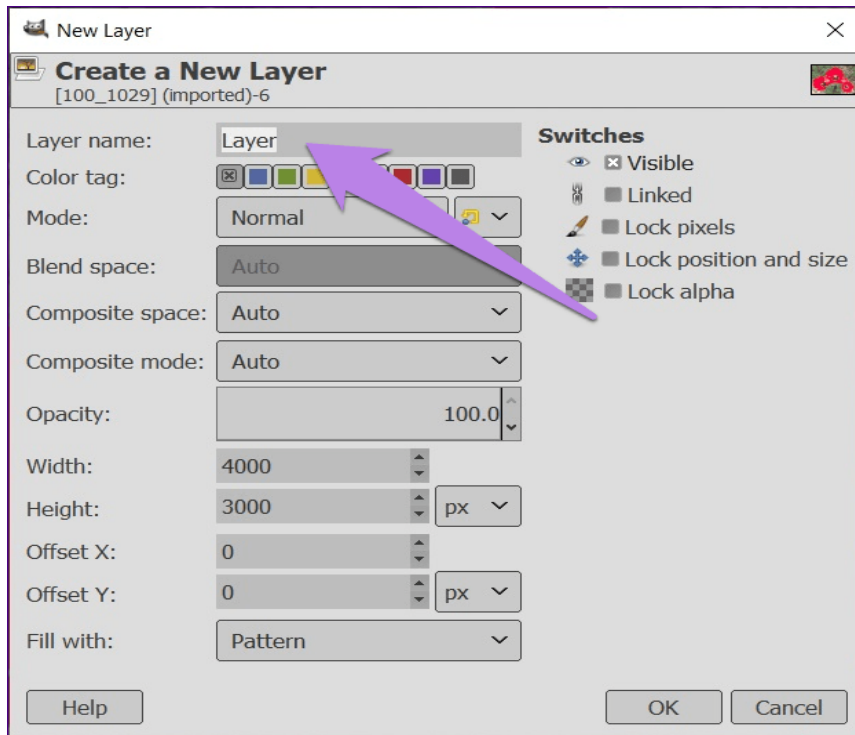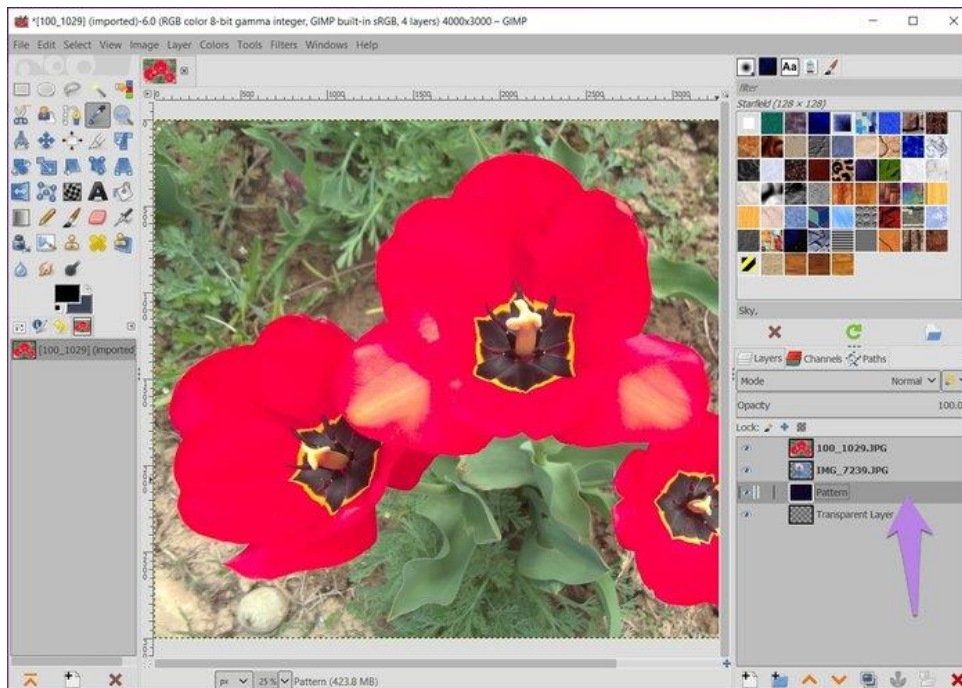

Secondly, once the layer is created, double-click on the layer name. The text will become editable. Now you can add a new name.
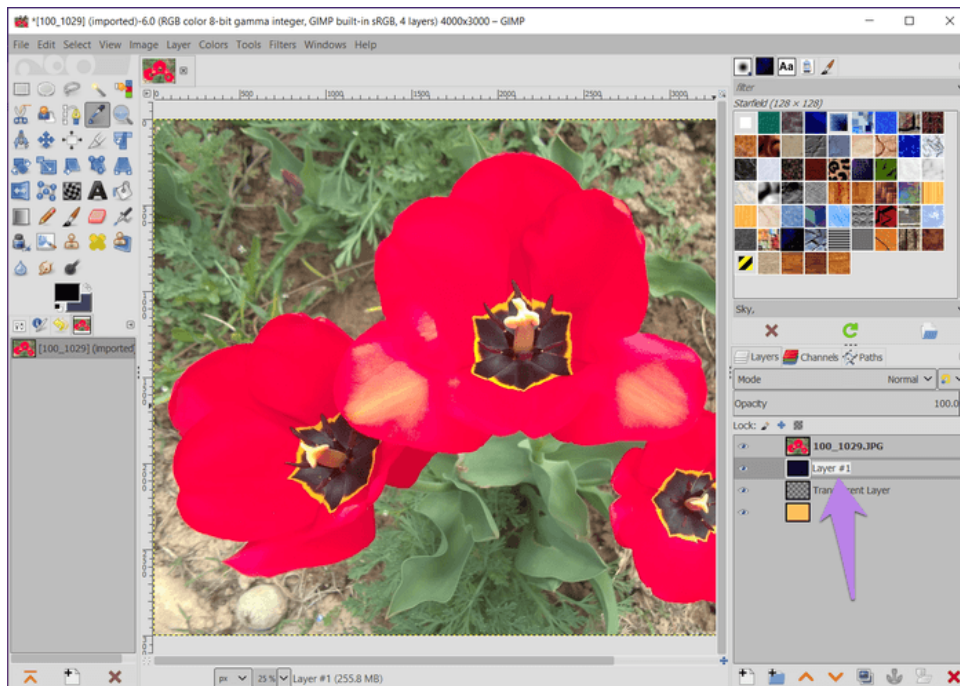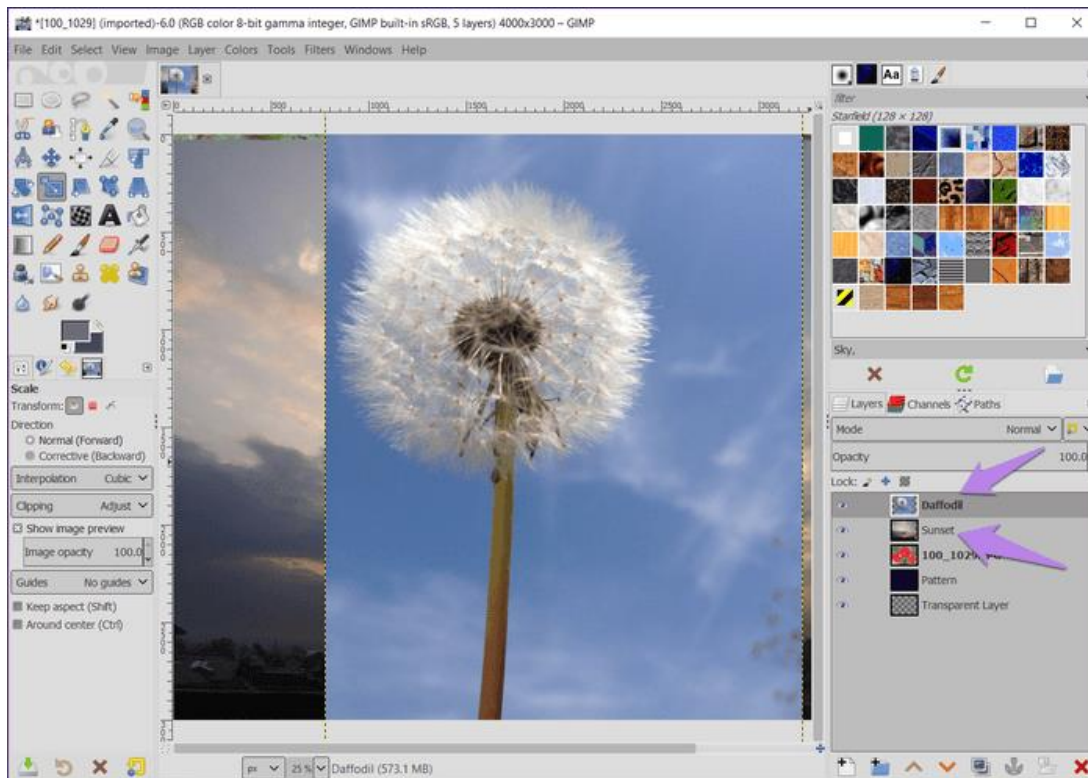
SELECT A LAYER

To start working on a particular layer, simply click on it once in the layer panel. The selected or the active layer will have a grey box around it.


CHANGE ORDER OF LAYERS

The layering of orders is crucial while working on them. So the basic rule is that the top layer will be visible. Meaning, the layers or the portion of the layer below a layer will not show. You have to adjust them in a way that each part of a layer is visible.

For instance, in the below image, the top layer has dandelion, and only certain portions of the sunset layer are visible. If I move the dandelion layer below sunset, then the entire sunset layer will become visible as shown in the second image.

To reorder layers, click and drag the layer to its new position in the layer panel. Alternatively, use the up and down arrows present in the layer panel to change the position of the selected layer.
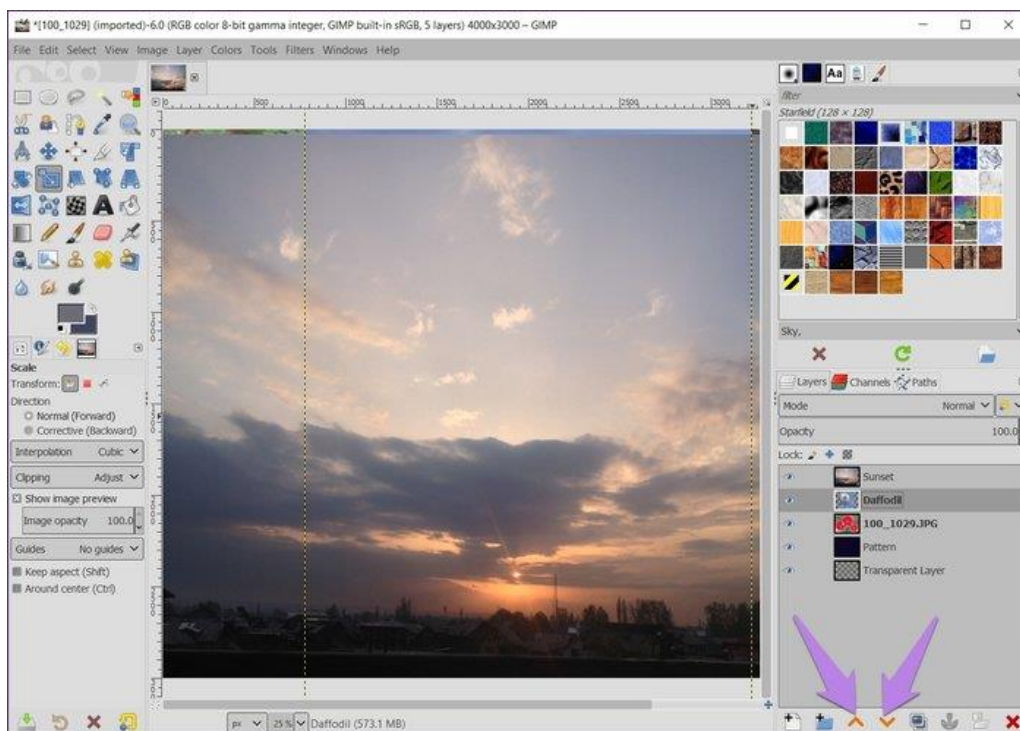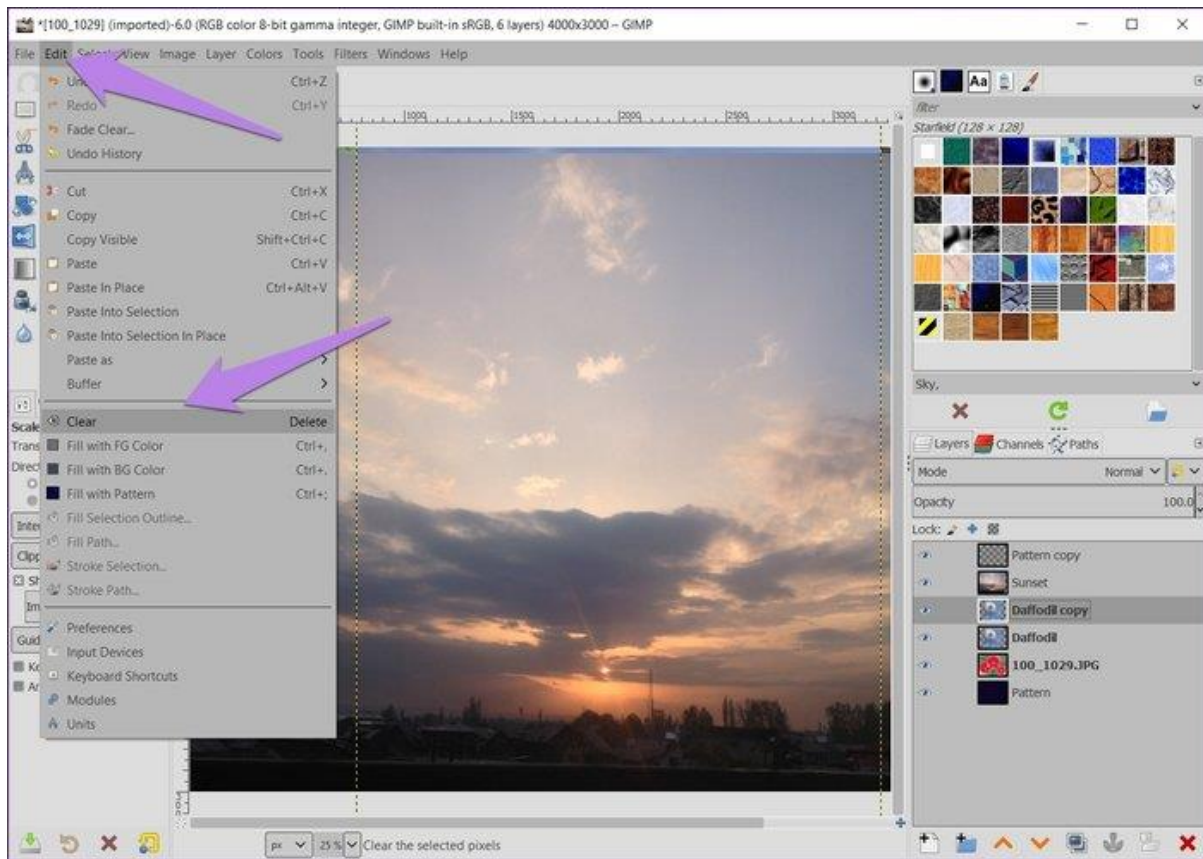

DELETE LAYER

To delete a layer, right-click on it and select Delete Layer from the menu. Alternatively, select the layer and click on the delete icon in the layer panel. You can even drag the layer to the delete icon to remove it.
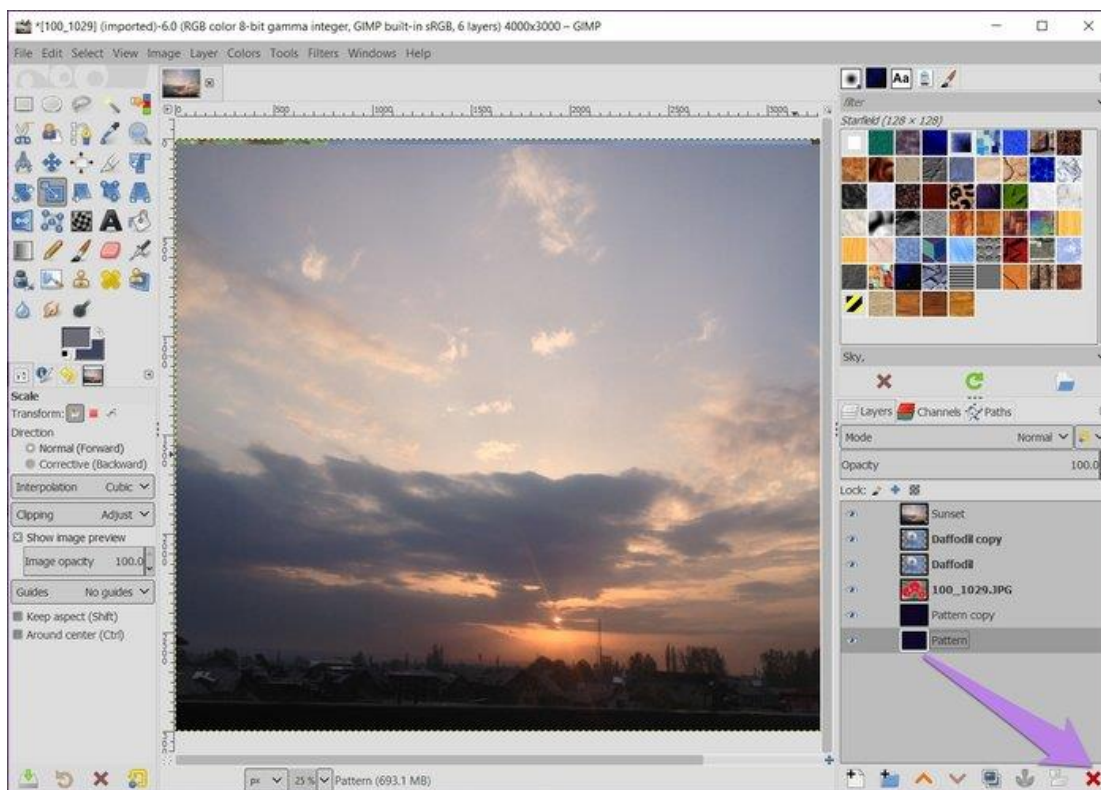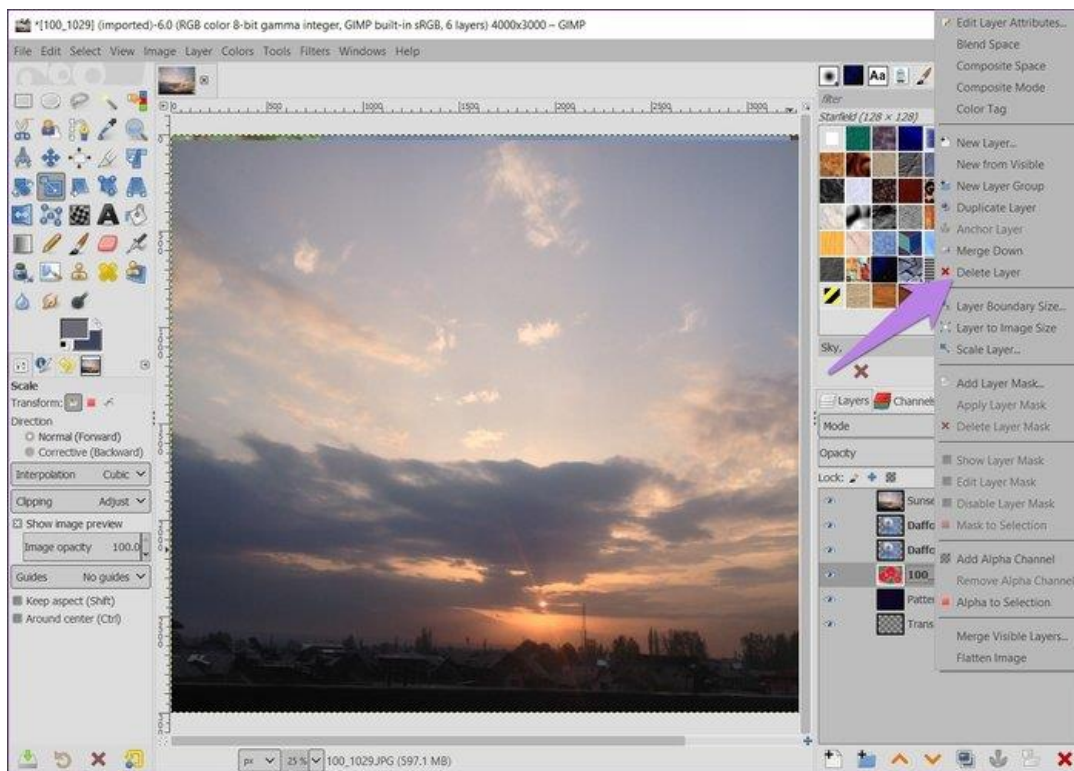
CLEAR LAYER

Sometimes, deleting an entire layer isn't required for you can retain the transparency of the layer and clear other content present in it. To do so, select the layer, go to Edit in the top bar, and choose Clear.

Press the Delete key on your keyboard to clear the layer.

SHOW OR HIDE LAYERS

When you have multiple layers in GIMP, deleting or clearing a layer seems a harsh step as it removes the main content of the layer. To avoid that, you can simply hide a layer if you don't need it.

To do so, click on the eye icon present on the left side of the layer name in the layer panel. To make it visible, click on the blank area where the eye icon is supposed to be.
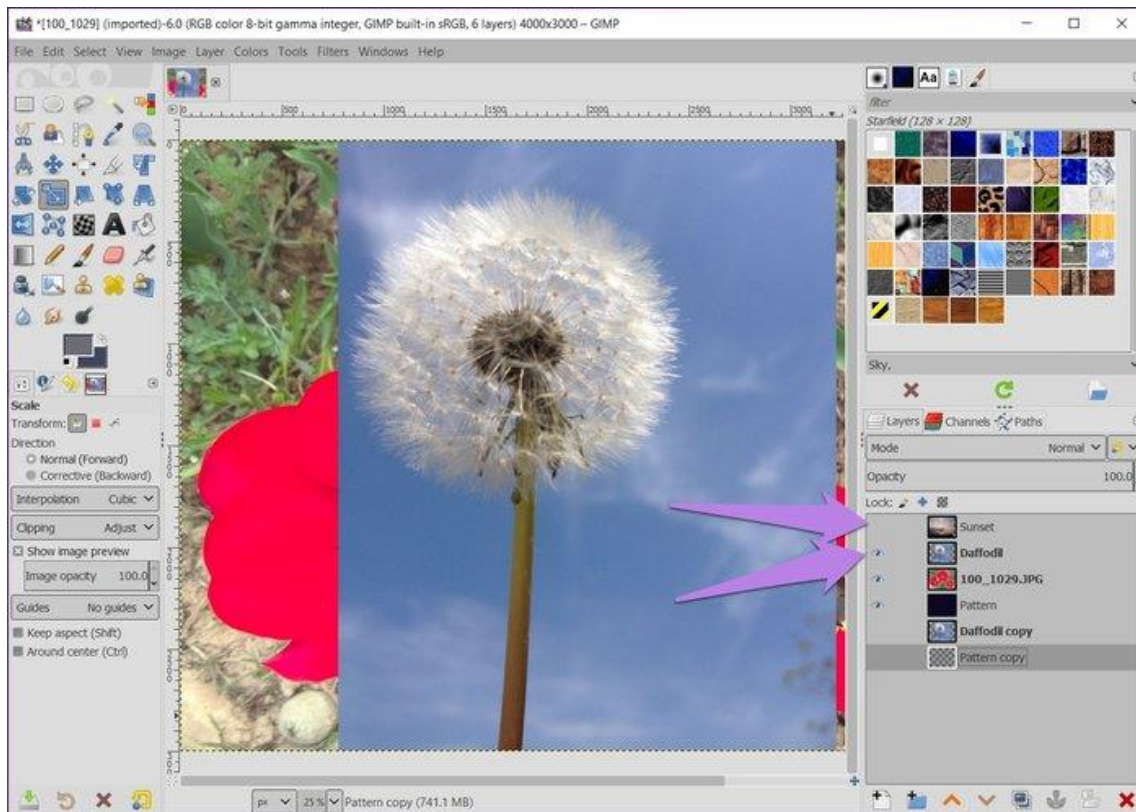
As you can see in the image above, even though the top layer is the sunset layer, we can see dandelion and the layer below that. That's because I hid the sunset layer (no eye icon before that).

ADD AN IMAGE TO CURRENT FILE

Many times, we want to add an image from our computer onto the current image. If you use the Open image option in GIMP, the image will open as a new file. To superimpose an image or to import an image to a layer, you need to open it as a layer.

For that, go to File and click on Open as Layers.

Use the shortcut Ctrl + Alt + O (on Windows).
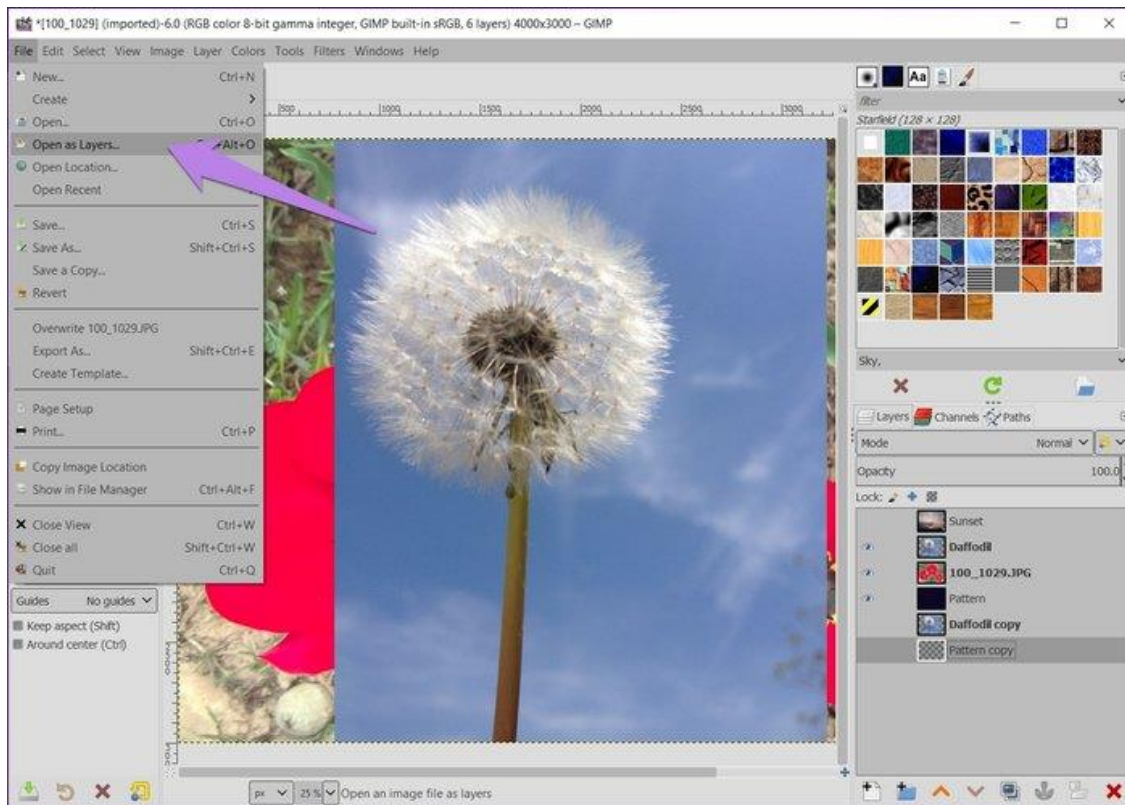
LINK LAYERS

Many times, while working in GIMP, you would want to move or rotate multiple layers. Typically, you would do it one by one. However, you don't need to do that as GIMP allows you to link them so that you can work on them as a single image. You can move, rotate, flip, and resize layers using the link feature.

To link layers, hit the space present before the name of the layers that you want to link. A chain icon will appear indicating that the layers are linked. Perform a transformation action after they have been linked. To unlink them, click on the chain icon.
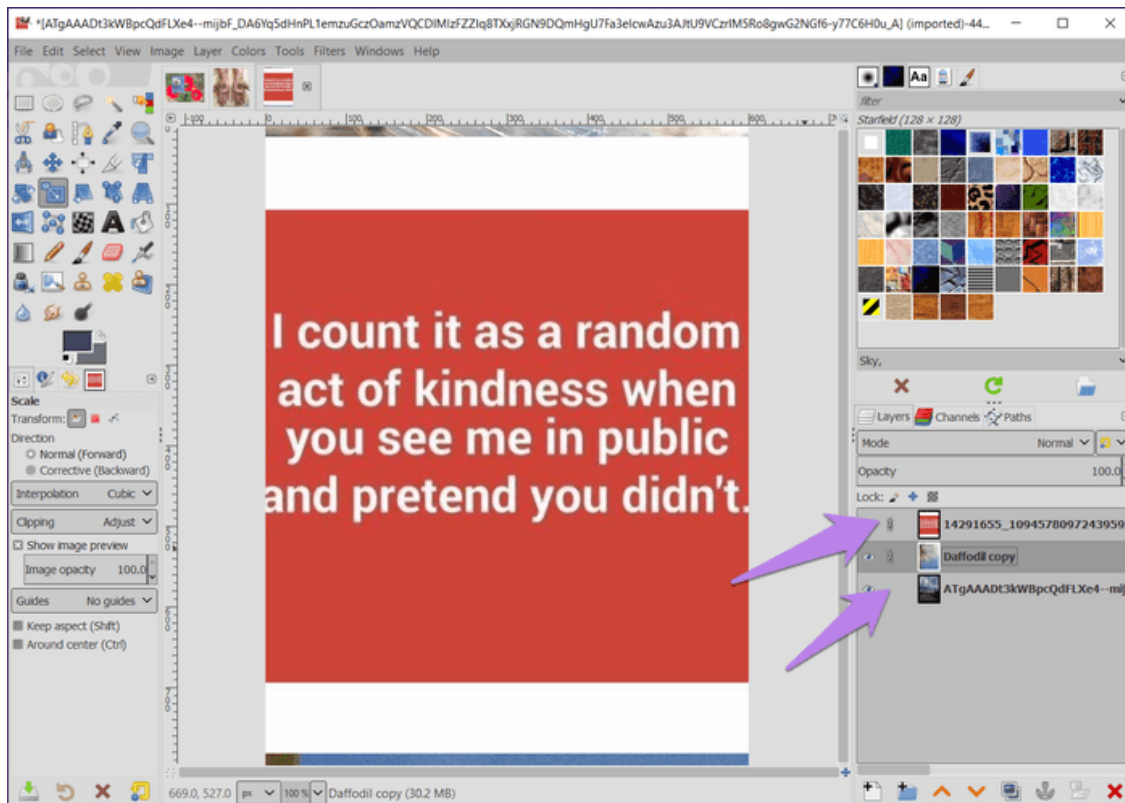
GROUP LAYERS

Grouping various layers lets you link them in an organized manner. That is, you can use it to organize layers and perform actions such as rotate, move, etc. on all the layers present in a group.

To create a layer group, right-click on any layer and select Create Layer Group from the menu. You can also use the create layer group icon in the layer panel. Once you do so, a layer with a folder icon will be created.
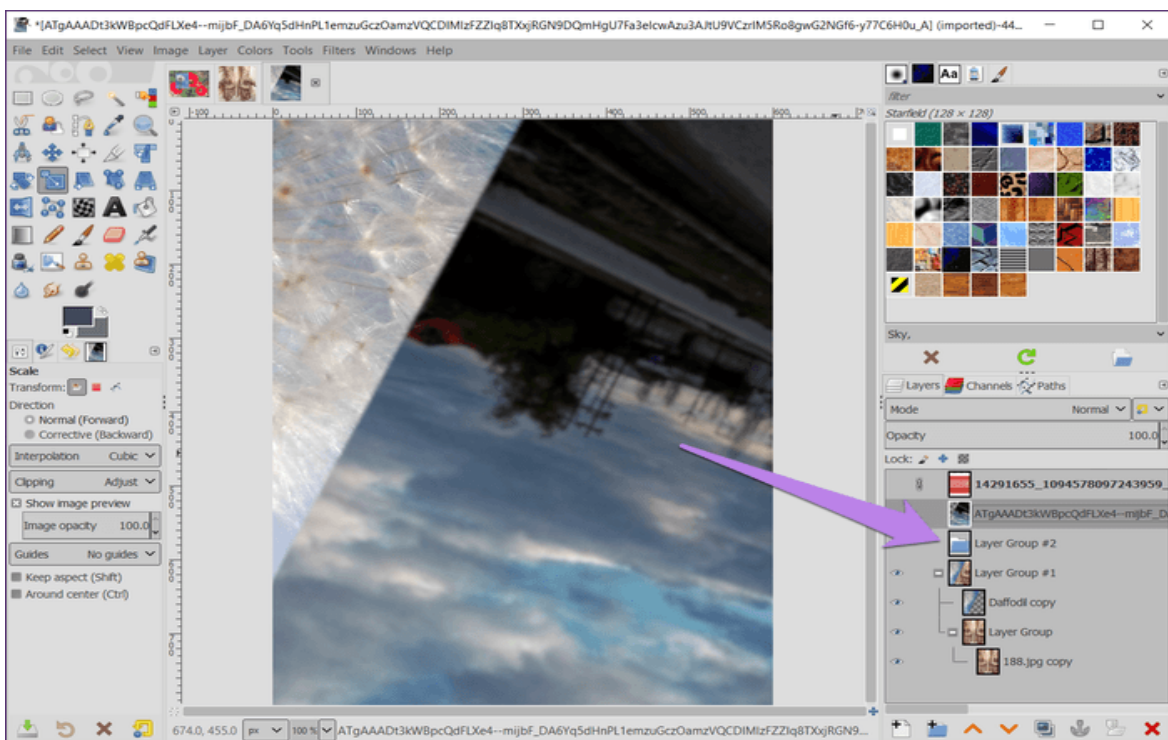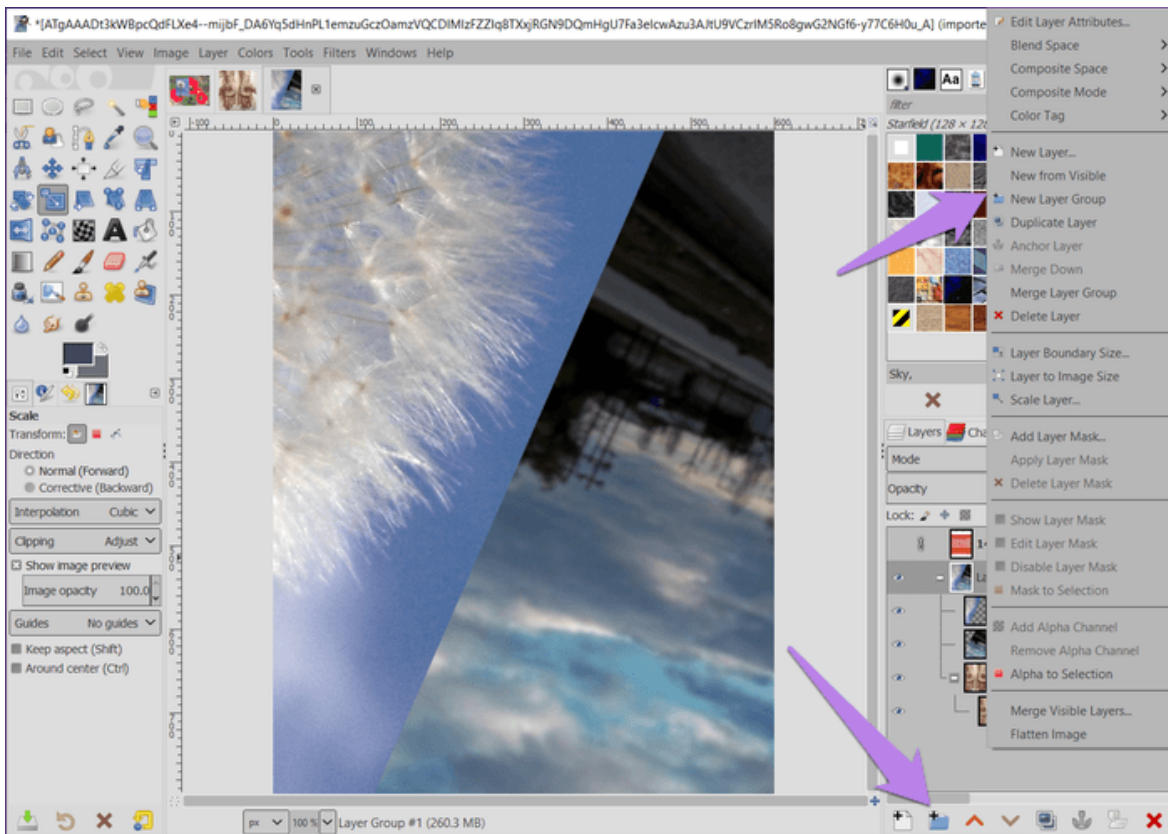
To add layers to it, just drag the layers into it. To remove a layer from a group, drag it outside of the group. You can have a layer group inside another layer group. The dotted line indicates the hierarchy of the layers. Click on the minus sign to close the group. You can hide or show all layers at once by using the eye icon next to the layer group.

Merge Visible Layers

The Merge Visible Layers command merges the layers which are visible into a single layer. Visible layers are those which are indicated on the Layers dialog with an "eye" icon.

- You can access this command from the image menubar through Image → Merge Visible Layers…,

- or by using the keyboard shortcut Ctrl + M .
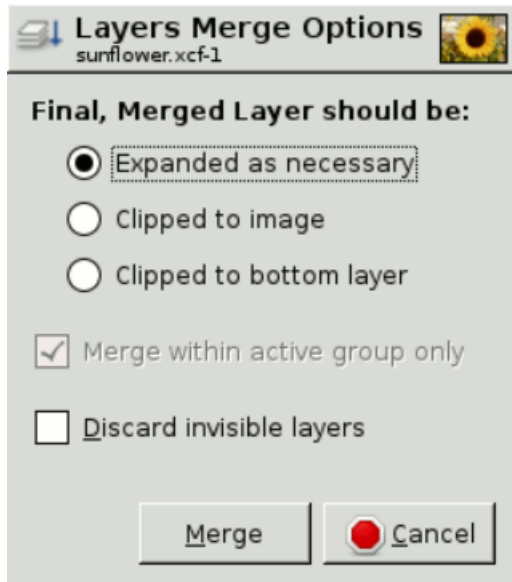
Final, Merged Layer should be:
Visible layers are the layers which are marked with an "eye" icon in the Layers dialog.

- *Expanded as necessary*: The final layer is large enough to contain all of the merged layers. Please note that a layer in GIMP can be larger than the image.

- *Clipped to image*: The final layer is the same size as the image. Remember that layers in GIMP can be larger than the image itself. Any layers in the image that are larger than the image are clipped by this option.

- *Clipped to bottom layer*: The final layer is the same size as the bottom layer. If the bottom layer is smaller than some of the visible layers, the final layer is clipped and trimmed to the size and position of the bottom layer.

Merge within active group only
This self-explanatory option is enabled when a layer group exists.

Discard invisible layers
When this option is checked, non visible layers are removed from the layer stack.

Paint Tools

Tools	Filters	Windows	Help				
Selection Tools			›				
Paint Tools			›	Bucket Fill			Shift+B
Transform Tools			›	Gradient			G
Paths			B	Pencil			N
Text			T	Paintbrush			P
GEGL Operation...				Eraser			Shift+E
				Airbrush			A
Color Picker			O	Ink			K
Measure			Shift+M	MyPaint Brush			Y
Zoom			Z	Clone			C
				Heal			H
Toolbox			Ctrl+B	Perspective Clone			
Default Colors			D	Blur / Sharpen			Shift+U
Swap Colors			X	Smudge			S
				Dodge / Burn			Shift+D

The GIMP Toolbox includes thirteen "paint tools", all grouped together at the bottom (in the default arrangement).
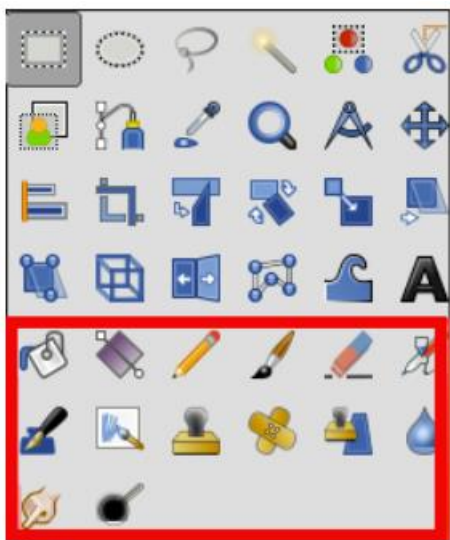
The feature they all have in common is that all of them are used by moving the pointer across the image display, creating brush-strokes. Four of them

- The Pencil,

- The Paintbrush,

- The Airbrush and

- The Ink tool

and MyPaint brushes, a new feature in Gimp-2.10.6,

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.

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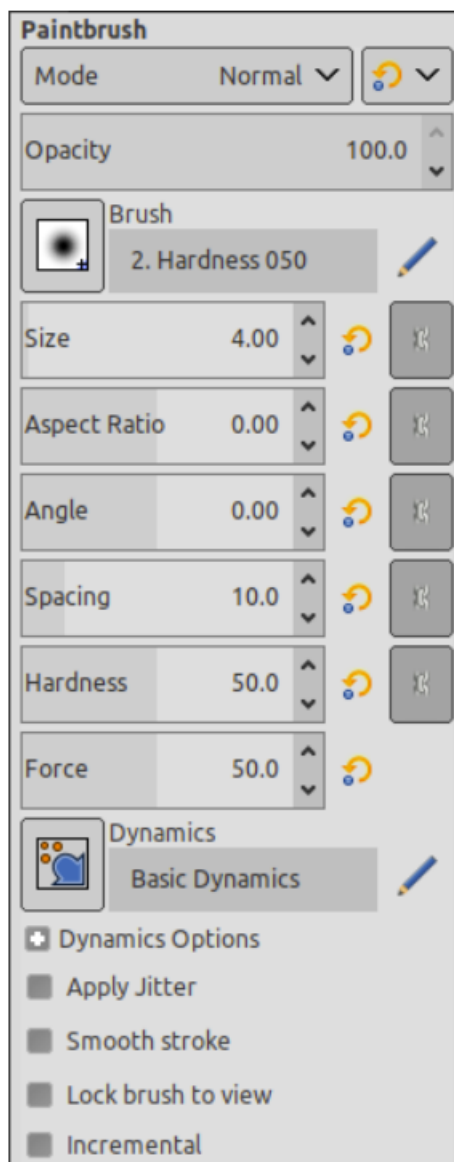
Many tool options are shared by several paint tools: these are described here. Options that apply only to one specific tool, or to a small number of tools, are described in the sections devoted to those tools.

Mode

The Mode drop-down list provides a selection of paint application modes. As with the opacity, 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. For the other paint tools, the option appears for the sake of consistency but is always grayed out.

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. In the case of the Eraser, this can come across as a bit confusing: it works out that the higher the "opacity" is, the more transparency you get.

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. The same brush choices are available for all paint tools except the Ink tool, which uses a unique type of procedurally generated brush. The colors of a brush only come into play for tools where they are meaningful: the Pencil, Paintbrush, and Airbrush tools. For the other paint tools, only the intensity distribution of a brush is relevant.

Size

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 ±1.00. You can obtain the same result if you have correctly set your mouse-wheel in the Preferences.

Aspect Ratio

This determines the ratio between the height and the width of the brush. The slider is scaled from -20.00 to 20.00 with the default value set to 0.00. A negative value from 0.00 to -20 will narrow the height of the brush while a positive value between 0.00 and 20.00 indicates the narrowing rate of the width of the brush.

Angle

This option makes the brush turn round its center. This is visible if the brush is not circular or made from a rotated figure.
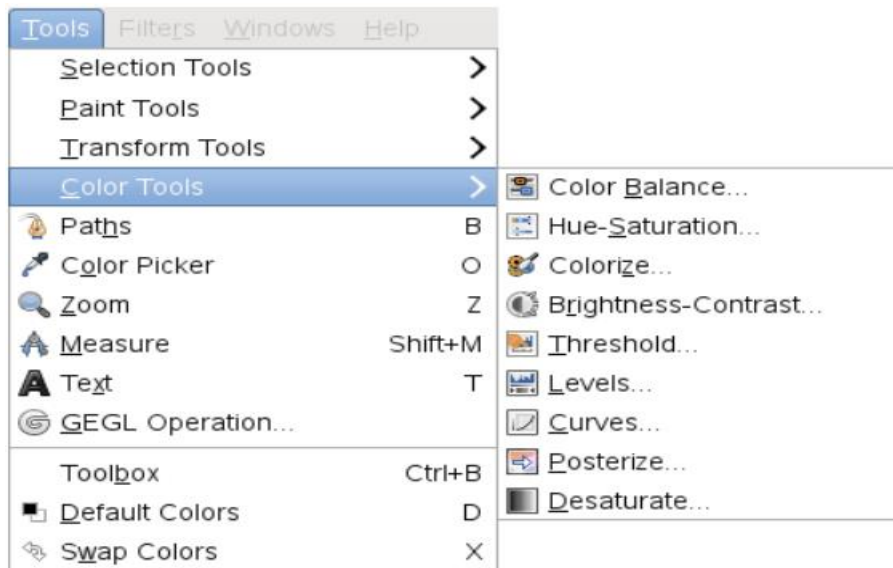
Spacing

This option sets the distance between the brush marks in a stroke.

Hardness

Modifies the size of the brush hard center.

Color Tools

With the Color tools you can manipulate image colors in several ways:

- Modify the color balance

- Adjust hue, saturation and lightness levels

- Render into a greyscale image seen through a colored glass

- Adjust brightness and contrast levels

- Transform into a black and white image depending on pixel value

- Change the intensity range in a channel

- Change color, brightness, contrast or transparency in a sophisticated way

You can get to the Color balance through: Colors → Color Balance
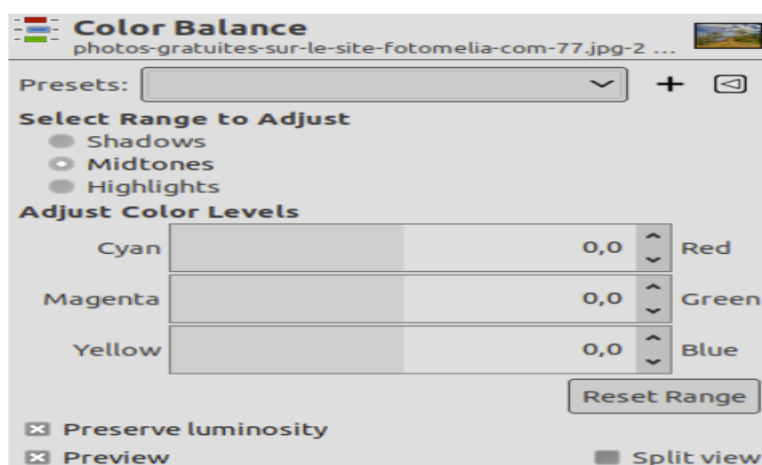
The Hue-Saturation command is used to adjust hue, saturation and lightness levels on a range of color weights for the selected area or active layer.
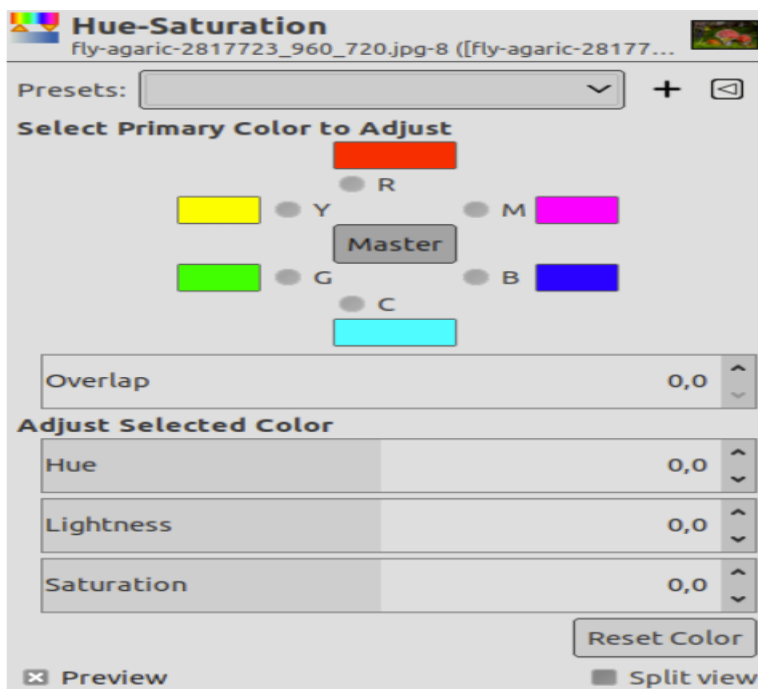
The Brightness-Contrast tool adjusts the brightness and contrast levels for the active layer or selection.

You can get to this tool in two ways:

- In the image menu through Colors → Brightness-Contrast….

- By clicking on the tool icon ⛰ in the toolbox if this tool has been installed there.