

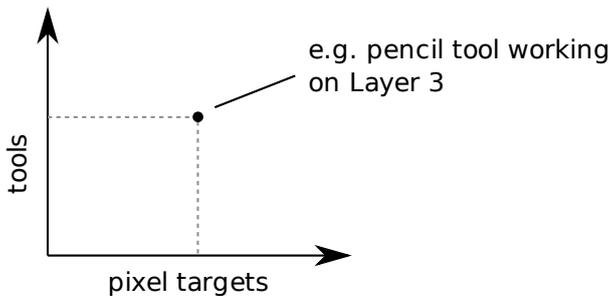
GIMP User Interface Modes

GIMP has many modes. For starters, see chapter 4: 'Getting Unstuck' in the manual. Some examples are:

- pencil mode
- eraser mode
- clone mode
- smudge mode

There are several categories of modes which are active at the same time. To visualize their relationships, modes can be sorted along axes. Modes of similar type are put on the same axis and independent modes are sorted to different axes.

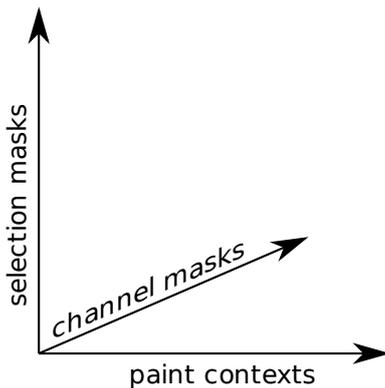
The basic image manipulation model then looks like this:



Categories	Example Values
tool	pencil, eraser, ...
pixel target	layer1, left half of layer2, ...

This is just an abstract way to express that any tool can be combined with any pixel target. The table on the right hand side displays the same information using another style.

Here's how pixel targets are specified:



Categories	Example Values
paint context	layer1, layer2...
selection mask	none, all, some pixels...
channel mask	any combination of RGBA

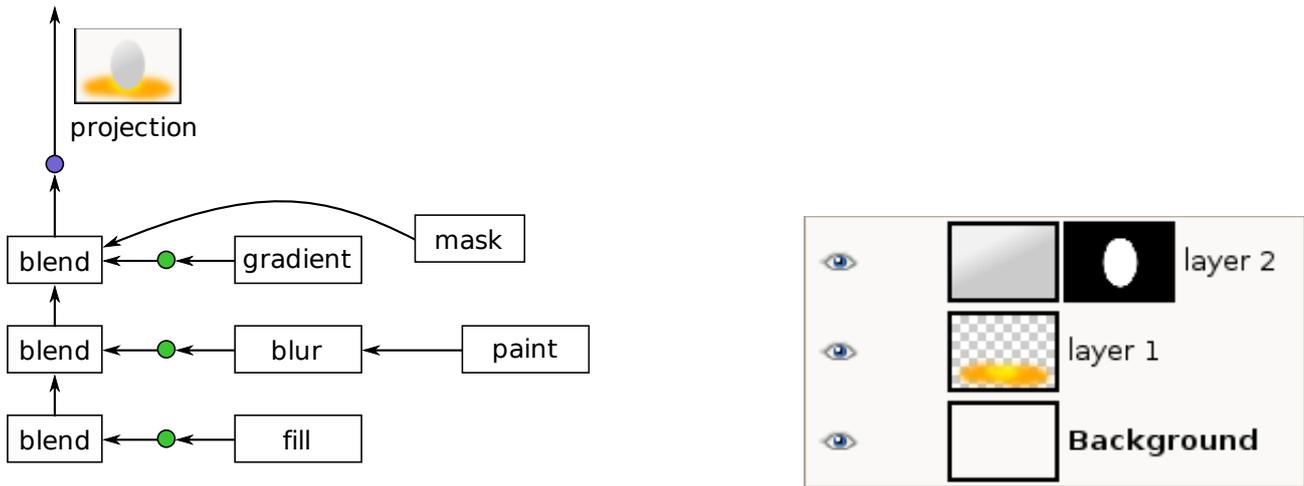
The current paint context is essentially the current layer, that is the pixel plane the current operation is targeted at. The selection mask constrains the operation to a subset of the pixels, if set. Advanced fine-tuning can be achieved via the channel mask which optionally restricts the operation to a set of the RGBA components of the paint context.

There are notable exceptions to this model:

- some tools work on the image as a whole, e.g. 'scale image'
- masks can act as paint contexts, too:
 - the selection mask: quick mask
 - layer masks

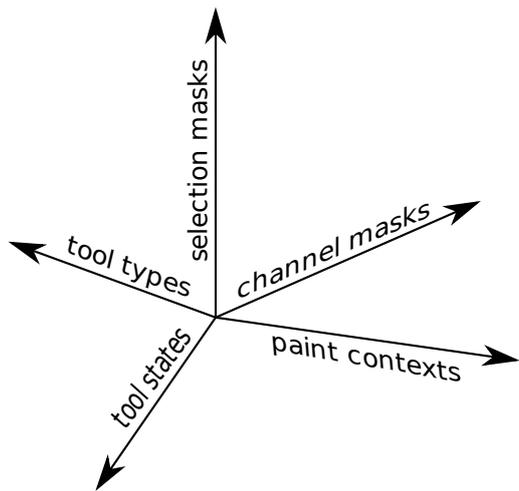
The Indexed and Gray image modes are not considered here. Their goals will most likely be attained in other, better ways in future versions of GIMP.

With GEGL, paint contexts can be extended beyond layers. A GEGL composition is internally represented as a tree of operations which looks conceptually like this:



Any node in that graph can act as a paint context. The green dots mark the default insertion points for operations which affect layers. It is also possible to apply operations on the image as whole, that is the projection build by blending all layers together. The corresponding insertion point is marked by the blue dot.

In summary, the main modes can be displayed like this:



Group		Categories	Example Values
tool		tool type	pencil, brush, ...
	tool state	color gradient brush	
access filter		selection mask channel mask	all, some pixels... any combination of R,G,B,A
		paint context	layer1, layer mask1, operation#17

Yet another interpretation is to regard a tool's operation as being filtered by masks before it gets applied to a paint context:

