



Honors 208W

Fall 2011

Cropping, Resizing, “Erasing” using GIMP

Why do we edit?

We've seen some editing abilities already, and will see more this week, but why do we need them?

We have mostly been looking at ways to attempt to fix an image in some way through editing.

- It is important to note that the best thing is to get the picture right when you shoot it ☺
- Unless you shoot to RAW, you are editing a lossy version of the original (more on this next week).

We will also see (later in the semester) that we can edit to create some effect that would not be possible straight out of the camera.

Editing: General

When editing an image, some things to keep in mind:

- Work from an exact duplicate of the original file.
 - You want to base your work off of the best quality version available – the original.
 - You don't want to risk accidentally overwriting the original.
- If you need to open/edit/save/close/open/edit... (ie: if you do not perform all of your editing in one session) save to a lossless format (such as **PNG**) in the interim.
- For many of the touch-ups the we see, you'll want to use a brush that feathers off rather than a hard, solid brush. This tends to make the transition from the real parts into your modified parts less noticeable.

Cropping in GIMP

A common way to crop an image is to use the selection tool to identify the part of the image to keep and then crop to that selection.

When making a selection, you might want to restrict your selection to a certain fixed aspect ratio (2:3 or 3:2 are common).

Some editing software allows you to view rule of thirds composition lines as you make your selection (more on this the week after next).

Resizing

When you resize an image, you are saying that you want the same overall content, but want it to appear within a smaller or larger rectangle of pixels. Which pixels should go? From where do you get new pixels?

Resizing: Increasing Image Size

In order to accomplish an increase of an image's size, some information must be replicated or estimated.

When taking an image and making it larger, the existing pixels are spread out, and the blank spaces are filled in using some method of interpolation.

- **Nearest Neighbor:** Simply duplicates your nearest original neighbor's color value.
- **Bi-linear:** Take the average of the color values of the 4 adjacent pixels.
 - Linear would just use 2 pixels (left/right or up/down) but it is unclear whether linear is simply used as an abbreviation for bi-linear.
- **Bi-cubic:** Takes the weighted average of the color values in a 4x4 grid around the location.
 - Cubic appears to simply be used as an abbreviation for bi-cubic.

Resizing: Decreasing Image Size

In order to accomplish a decrease of an image's size, some information must be removed.

When taking an image and making it smaller, the most direct method is to simply delete pixels evenly across the image. This is sometime referred to as “nearest neighbor” as well.

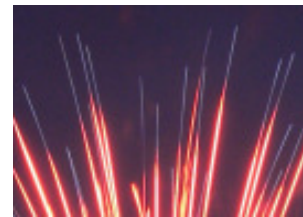
The other option is to adjust the entire image, working to incorporate the color information in the discarded pixels into those left behind.

- Techniques include anti-aliasing and Lanczos resampling.
- This is sometimes referred to as super-sampling.

Resampling Examples using GIMP



None



“Linear” or “Cubic”

Touch-ups: Clone Stamp

You can use a pattern in a different region of your image as your paintbrush.

This is often used to accomplish “erasing” as shown on this slide set’s title page.

This tends to work best if you have a generally solid pattern with something in the middle of that which you want to remove and replace with what would have been behind it.

Select the Clone Stamp, control-click on the sampling area, then paint over the area you want to erase.

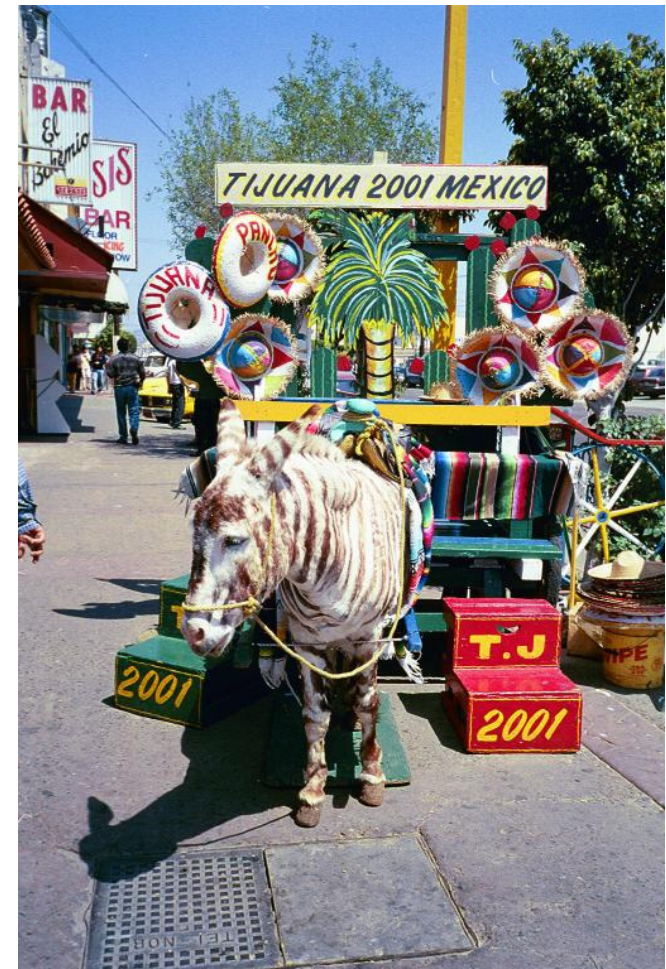
Clone Stamp Example

Consider the image at:

– <http://scottlaw.knot.org/photoblog/?p=4>

The photographer is frustrated
by the hand on the left side of
the image.

The ground to the right of that
hand could be used to “erase”
the hand.



Put it all
together now!



Crop



Levels



Erase



Some resources:

[http://en.wikipedia.org/wiki/Transformation_\(mathematics\)](http://en.wikipedia.org/wiki/Transformation_(mathematics))

http://en.wikipedia.org/wiki/Bilinear_interpolation

http://en.wikipedia.org/wiki/Bicubic_interpolation

<http://athos.rutgers.edu/~decarlo/abstract.html>