COIN 82: Images for the Web Lecture Week 03

This lecture will cover Image Acquisition and Image Improvement. These are two very big areas. We will start with Image Acquisition. I will give general information on these.

IMAGE ACQUISITION FOR WEB USE

The first thing you will have to consider is where your images are coming from and how you will digitize them. There are four main methods of acquiring images: Digital Cameras, Scanning, Photo CD, Stock Photography. Scanning and Photo CD are used for photographs, artwork, etc., anything that is print or film (this is called analog). Digital Cameras and Stock Photography provide images that are already digitized.

•DIGITAL CAMERAS

Still Digital Cameras

- acquires images using a two-dimensional CCD array (matrix)
- types: point and shoot, field, professional studio cameras and backs
- download images to computer via a memory card or directly, images are viewed in proprietary software or in Photoshop

Digital Video Cameras

- matrix CCD array - frame grabbing system records consecutive frames creating large files

When buying a digital camera there are two main things to look for, the megapixel size and compression method. The more pixels the more information to work with, even for web images. That means when you are trying to manipulate, color correct, or enhance an image, it will look better if the original has more pixels to start out with. That is why we always compress images as the last step. Most digital camera images are however already compressed. Most are jpg compression format method. You may need to change the size of the image, crop it, or even color correct it. That means it will eventually need to be compressed again. Some higher end cameras will also include a RAW file format which will not compress your image but will also take up a lot of space on your storage disc. RAW caputres should be opened in Photoshop using Camera RAW. Today most digital cameras work quite well for web work. And RAW documents will be a lot more important for print work.

•SCANNERS - to convert photographs and slides into a digital format

Flatbed Scanners

- converts analog images into digital form using a CCD array (linear vs. matrix)
- reflective and transparent originals
- software for tonal value adjustments
- some adjust for moire patterns that can exist when scanning halftone images (these are images from books and magazines)

Drum Scanners

- converts analog images into digital form using PMT sensors (photomultiplier tube)
- can capture 8,000 dpi and beyond

Slide Scanners

- 35mm, 4x5, 6x6, 6x9 film input
- CCD array
- 2.5 dynamic range - max optical density achieved and bits captured

When buying a Scanner don't get the cheapest one out there. When it comes to flatbed scanners it is true that you get what you pay for! And even if they profess to have 1600dpi or the sorts, the capturing methods are just not up to par.

•**PHOTO CD** - lab processed to CD and image adjusted for color and density

REMEMBER THIS IS NOT PRIMARILY FOR WEB WORK AND SHOULD BE USED IF YOU WILL NEED LARGE PRINTS ONLY. This is for photographers and artists that do work larger than 4x6 and need print and web files. It should not be confused with Picture CD which is an older Kodak system of putting your pictures from film onto CD for low res use.

There are two types of Photo CD, Master and Pro. Pro is more expensive because it is used for larger format film and artwork. In other words they can scan in large format prints, both photos and fine art, posters, etc. including large format film, anything over 35mm. Therefore the Pro CD holds bigger files.

Photo CD Master

- dynamic range 2.8
- images scanned at 18 MB and compressed to 4.5 MB using Kodak's Photo YCC image format, 35 yr. life
- 35mm input
- 100 high resolution images, five different file sizes are burnt for each image into a single file called an Image Pac as follows:

Base/16 - 128 x 192 pixels 72K
Base/4 - 256 x 384 pixels 288K
Base - 512 x 768 pixels 1.13MB
Base*4 - 1024 x 1536 pixels 4.5MB
Base*16 - 2048 x 3072 pixels 18MB

- you can add images to the CD at any time. A CD holds 100 images. You can get one roll of 36 images processed to Photo CD. They give you the CD with the images and the processed film along with prints all for one price. And then later you can add another roll of 36 images or individual negatives or slides up to 100 images. If you have a lot of slides you want to get digitized Photo CD is your answer. It is more expensive to have individual images put onto CD than taking in an entire roll of film but perhaps worth it so you can archive just the images you like.

When purchasing Photo CD make sure you ask if there is a cost for the CD itself and the index card that shows you what is on the CD. Some places charge for these separately from the processing. Some places even charge for the jewel case. I recommend Alpha Imaging in Menlo Park for Photo CD. They are reasonable and do a great job. You can also get these services online, check out www. shutterfly.com and www.kodak.com

some other website services to check out: www.snapfish.com, www.photoworks.com, www.myfamily. com, www.ofoto.com, www.shutterfly.com, and www.kodak.com

Pro Photo CD

- 35mm input plus larger format as well
- sixth resolution: Base *64 - 4096 x 6144 pixels 72MB
- dynamic range of 3.2

The extra higher resolution is because it scans larger images which need it. Pro is only used for larger work but you still get smaller scan, 6 in all!

•STOCK PHOTOGRAPHY (ROYALTY-FREE)

There are many places online to acquire images. Check how they are distributed. Some images are paid for by a single use, that is you can only use the image once. Others can be purchased for unlimited usage. Free images are usually low quality and little flexibility to change them. If you want to have original images you should try to change the clip art images that you download. You can change colors, add color, combine images, make them a duotone (2 colors), redraw them and many other manipulations to make these images your own and not just use them straight out of stock.

- accessible through Internet and CD-Rom
- provides images at a cost for unlimited use
- make sure you know what size & resolution of an image you are purchasing

Some sources for stock images:
www.istock.com good source for free images
www.photodisc.com
www.comstock.com/
www.creatas.com
www.digitalvision.com
www.jupiterimages.com/en/
www.zefaimages.com/
www.thinkstock.com/

The following are the commercial sites, mostly for advertising, standard fare, though corbis has some more editorial type of photos:
creative.gettyimages.com/
pro.corbis.com/
www.eyewire.com/
www.stockart.com
www.ditto.com/
www.picturequest.com/

The following are illustration sites--no photos. I especially like the folioplanet site because tho it displays the work of individual artists, it has a good search engine so you don't have to browse thru the whole place if you're looking for a particular concept:
folioplanet.com/
www.theispot.com/
www.medillsb.com/ (medical illustration)

These are photo sites that have for me a more interesting selection, or are set up for editorial rather than advertising:
www.photovault.com/
www.ibidphoto.com/ www.panos.co.uk/

www.socialphotos.com/ 3rd world--mostly Latin America & Brazil

www.loc.gov/rr/print/catalog.html (Library of Congress prints & photos "reading room")

There are many others. Please let me know what your favorites are and why you like them!

PREPARING PHOTOS FOR A WEBSITE LAYOUT

After acquiring images for use on your web pages, there are several steps to follow in improving them. Here is a basic summary of those steps:

1. Evaluate Images
2. Color Correction
3. Sharpening
4. Retouching
5. Sizing

EVALUATION OF PHOTO FOR PROBLEMS

The first step after acquiring your image is to evaluate it for any problems. Here is a list of what to check for:

Dust and Scratches
Contrast - lack of contrast (when an image is dull or flat with no blacks or whites)
Color Casts caused by processing or lighting (fluorescent light will make your image have a green cast)
Cropping for wasted space
Alignment problems
Red Eye from camera flash
Out of focus or blurred
Noise (often fround on digital camera jpgs)

COLOR CORRECTION

After you have evaluated your image you can then correct accordingly. Here are some techniques to improve your images. This course cannot cover all of these techniques in-depth. You will need to take some Photoshop classes if you would like to explore these concepts further.

Contrast and Color Cast Adjustment:

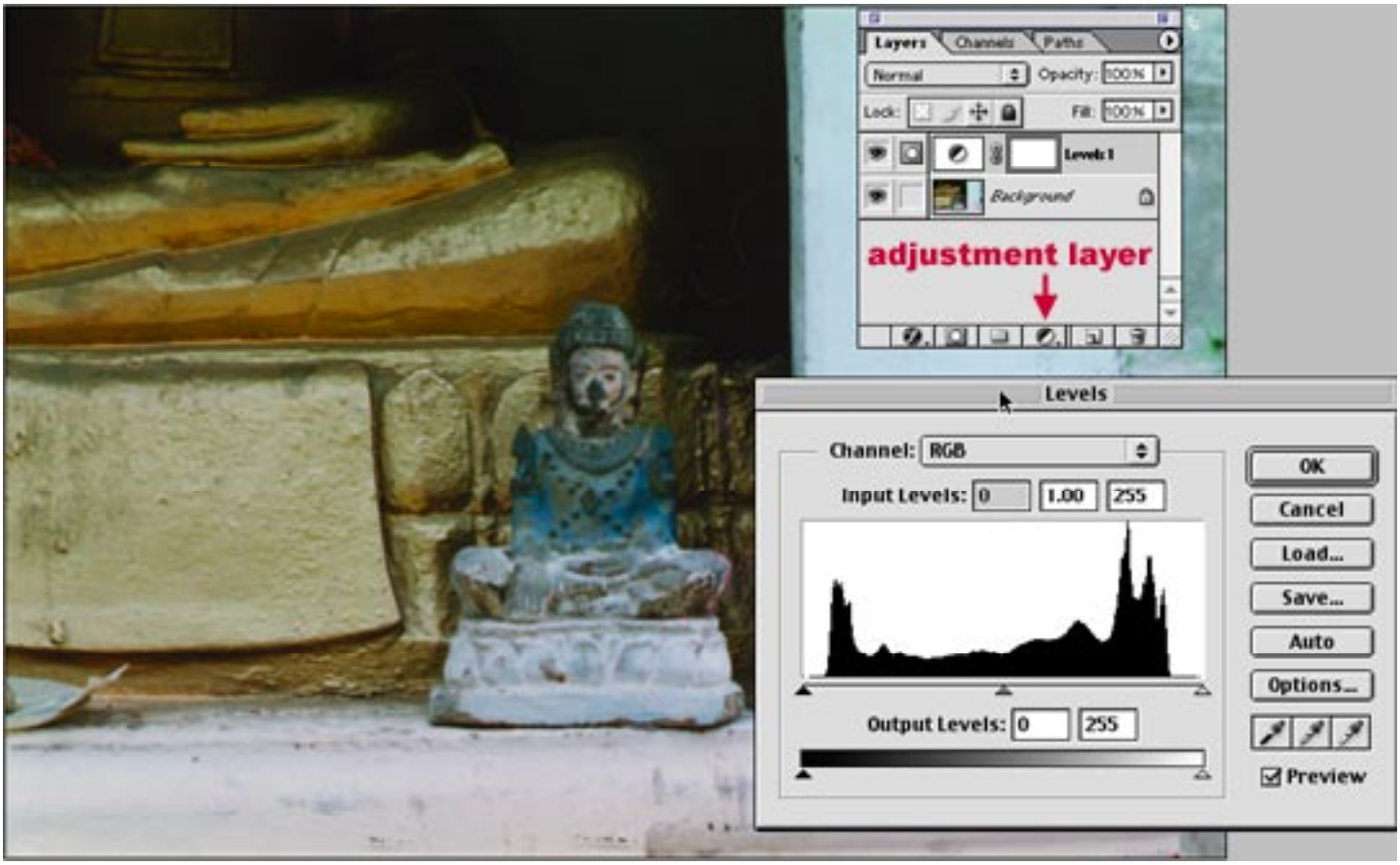
Adjusting your images for contrast and color will be the most important concepts you learn and the hardest! It takes much practice and looking to get these adjustments down. Before any image adjustments, make sure you have setup your Color Settings and Proof Setup and Proof Colors as discussed in Lecture 1.

Here are the general steps to image adjustment. They are not always done it this order. Removing spots and scratches is often done before color corrections and sharpening may be done at various steps.

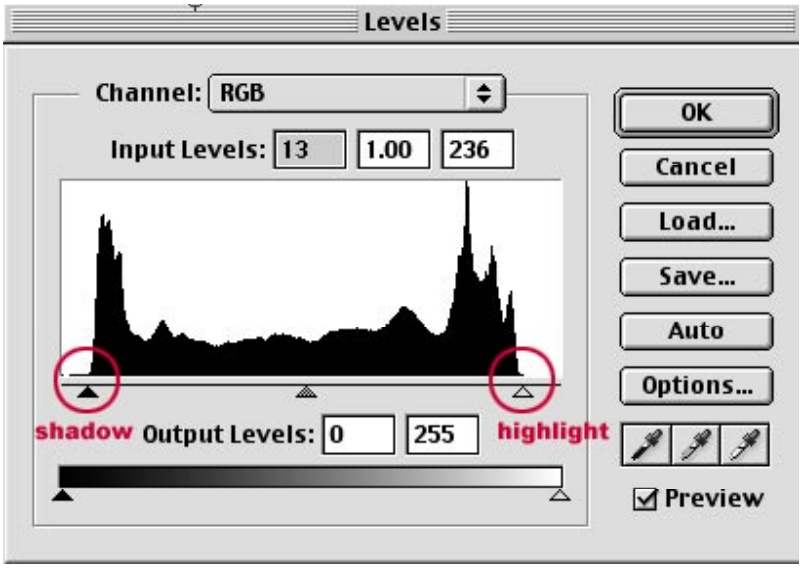
1. Use Levels to adjust the highlights, shadows, and midtones or overall brightness.
2. Use Levels to adjust for color casts in the Red, Green and Blue channels.
3. Use Hue and Saturation to increase or decrease overall saturation and to adjustment to specific colors.
4. Remove spots and scratches and any other retouching.
5. Resample copy of image to proper size.
6. Sharpen image.

OK, let's do it! If you want to do it along with me open the Buddha.psd in Photoshop.

Before you begin any kind of color correction make sure that there is not a border on your image. A border is a solid color usually white or black around the outside of the image. This will effect the entire outcome. Crop it off and replace it later. We will use adjustment layers to make the Levels and Hue and Saturation changes. Open up the Layers palette from the Windows menu. At the bottom of the Layers palette click on the half moon shape (this is the adjustment layer icon) down to Levels... This will open the Levels dialogue box. Notice also that it has created a new layer in the Layers palette.

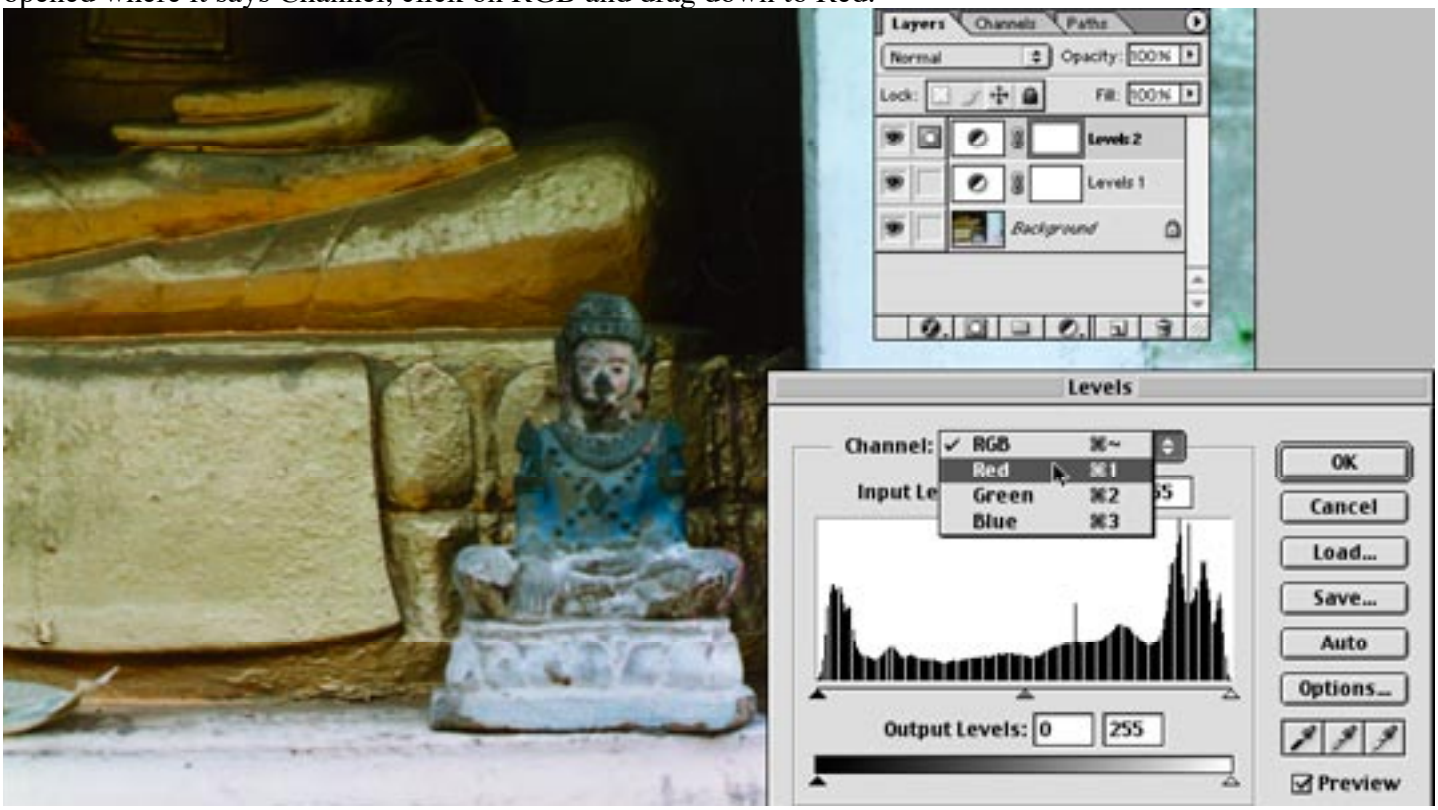


STEP 1 adjust for Highlights, Shadows and Midtones. Notice in the Levels dialogue box there are three triangular sliders at the bottom of the Input Levels under the curve. The black curve is called a histogram and represents all the pixels in the image. Where there is a lot of black, it is indicating there are a lot of pixels of that value. The white slider represent highlights with a value of 255 as white. The black slider represents shadows with a value of 0 as black. The middle slider is midtones or gamma representing the contrast of the image and having a value of 216 when it is exactly in the middle. You should always start your tonal correction with the highlights. Move the highlight (white) slider until it is aligned with information from the curve, as pictured below. Then adjust the shadow (black) slider until it is aligned with information from the curve. On bad scans, the highlight and shadow information may start at the 255 and 0 points already. This makes it impossible to correct the image. Photoshop is not a miracle maker. It is the garbage in, garbage out theory. If you do not capture the subtleties of the image while shooting it or in the scan, then you will never be able to regain that information. Low contrast images are better for scanning and can be easily corrected as opposed to contrasty images - ones that have black shadows with no detail or bright highlights with no detail. No detail means that the area is purely white or purely black. For certain images you may not need to change highlights or shadows depending on the inherent information. For instance, a snow scene may have a lot of white and the highlight slider will remain at the 255 value.



Lastly, we will correct for the midtones. This is done by moving the gamma (middle) slider. When it is moved to the right the image will become darker, moved to the left it will become lighter. Adjust this by eye. Make sure that the shadows and highlights are not getting lost as you do this. There should remain detail in these areas. These adjustments do not have to be huge, baby steps go along way! Click OK to these changes. In the Layers Palette turn the eye next to the Levels Adjustment layer on and off to see the changes you made. You can always double click on an adjustment layer to change it further. Adjustment layers do not change the image directly but rather hold the changes mathematically as algorithms.

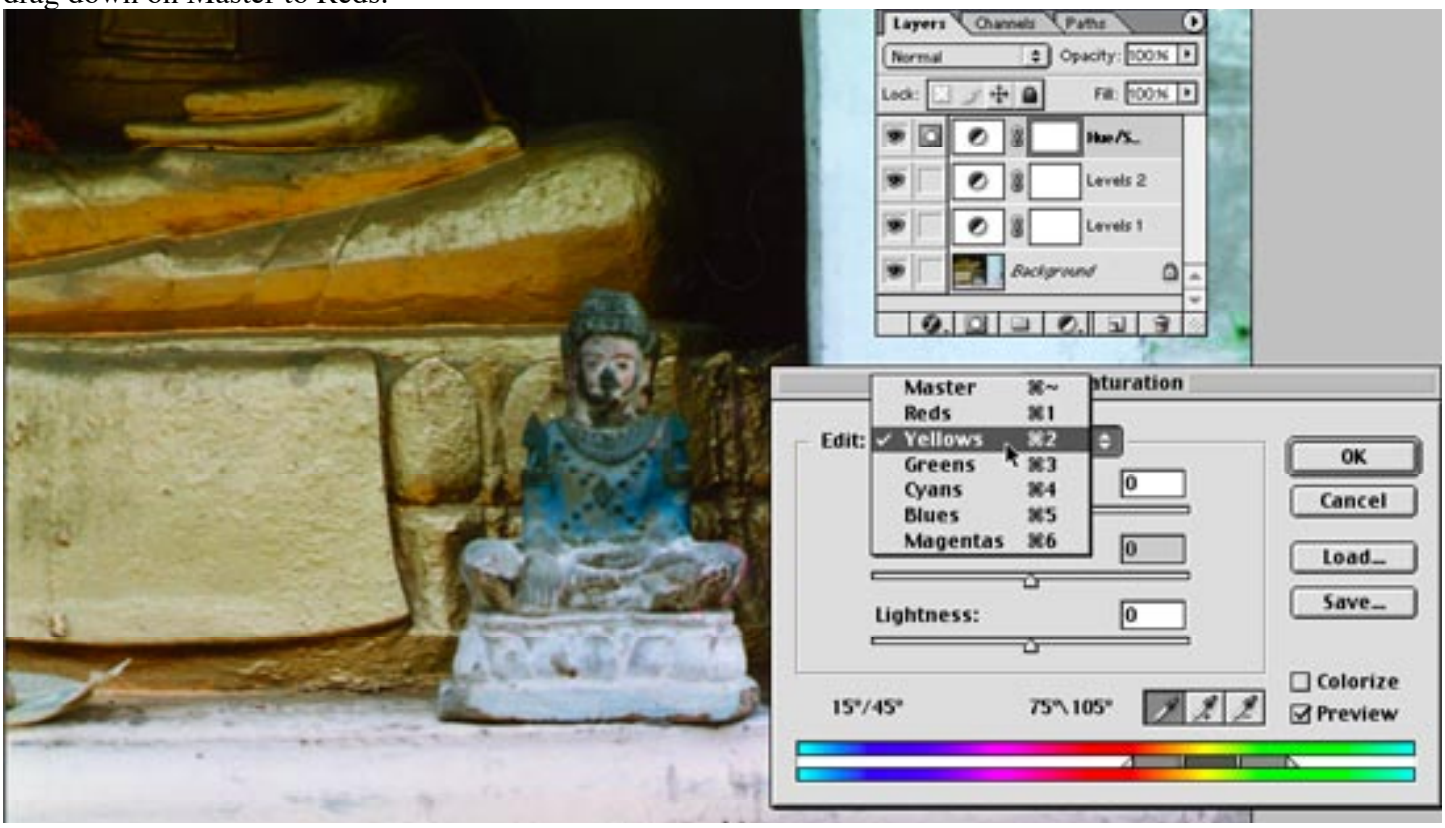
STEP 2 is an adjustment of color casts. This can be very difficult to see. It takes a trained eye to develop the proper correction. Experiment with these adjustments. We will do it as an adjustment layer again. Go to the Layer Palette and click on the half moon shape down to Levels... again. Notice in the Layers Palette there is another Levels adjustment layer. This one we will be adjusting for color casts. In the Levels Dialogue box that opened where it says Channel, click on RGB and drag down to Red.



You are now in the Red Channel and can make changes that range from Red to Cyan. Move the middle slider back and forth to see these color changes. Notice that the entire image changes. You only want to move the slider slightly to correct for any color cast that may exist in the image. A color cast can develop when you take a picture from the type of light it is shot under, the film that is used (Kodak tends towards reds whereas Fuji tends towards greens), or the developing process. If the overall image looks to have too much of one color this is the place to fix it. Next we go back to Channel and pull down to Green where changes range from green to magenta. Again move the middle slider to see how this works. Finally, go to Channel and pull down to Blue. This will adjust for blue to yellow colors for the overall image. Click OK when you are done. Remember you are just adjusting for color casts and not individual colors in the image. To see the changes you made turn the eye on and off next to the top adjustment layer (Levels 2) in the Layers Palette.

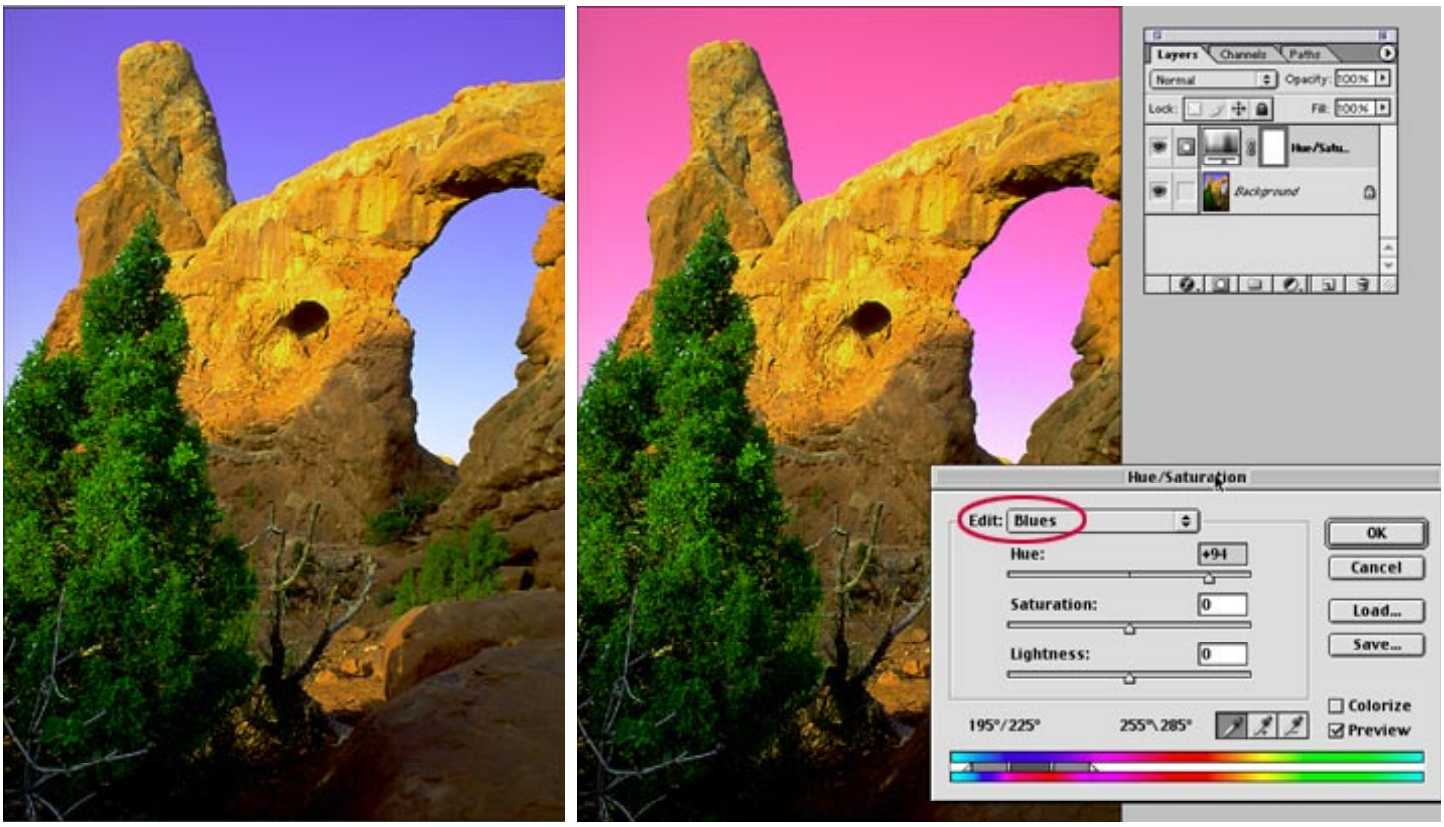
STEP 3 is adjustment of individual colors and overall saturation of the image. Again we will use an adjustment layer. At the bottom of the Layers Palette click on the half moon shape down to Hue/Saturation... The Hue/ Saturation Dialogue box opens. Hue is color, like the colors of the rainbow. Saturation is the intensity of the color, from an almost grayscale color to a very bright neon color. Lightness is how much white or black is in the color, its value. Move these sliders around to see what changes they create. You will notice that moving the Hue slider gives an unrealistic fantasy effect to the image. For traditional color correction this is not used. Change only the saturation if necessary.

To change individual colors without selecting specific areas, in the Hue/Saturation dialogue box go to Edit and drag down on Master to Reds.

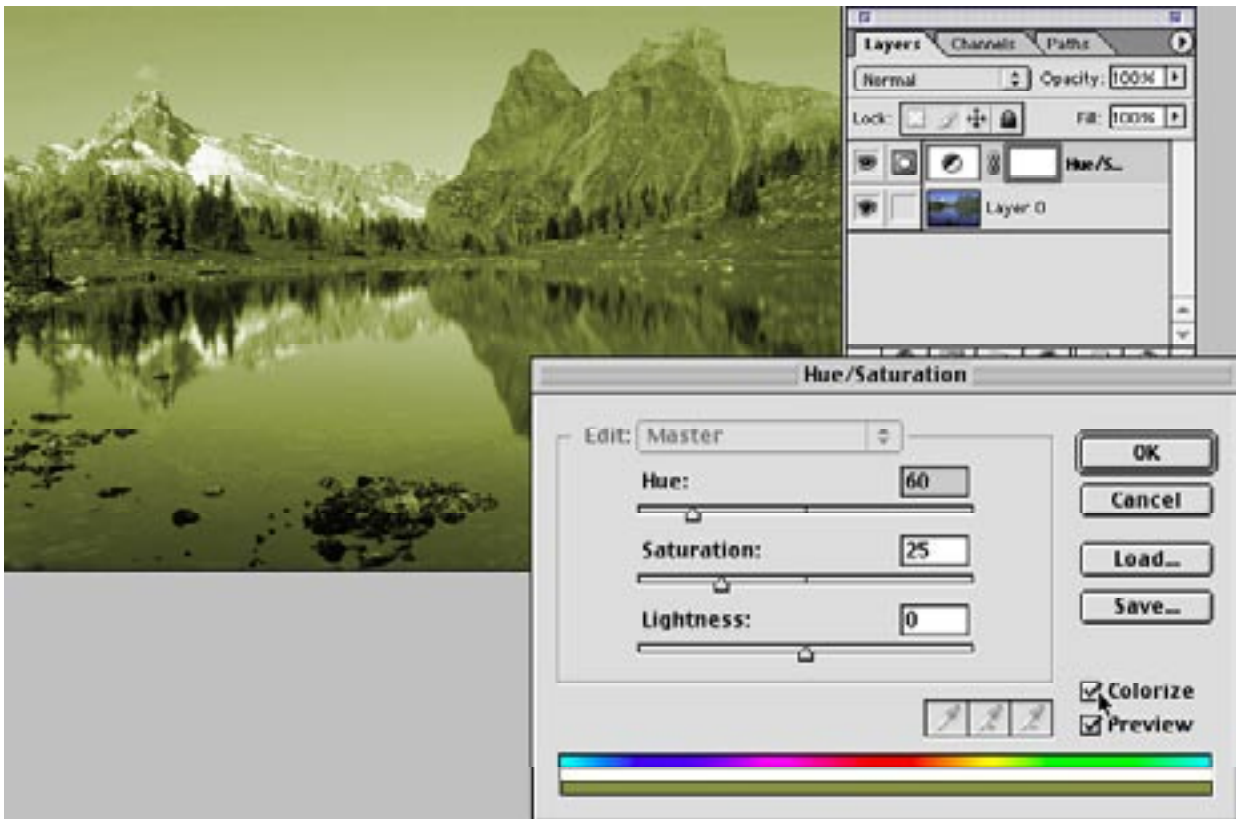


Move the Hue slider now. Only the pixels with red will change. Try changing the saturation too. Be careful with Lightness, this can cause an unnatural effect when doing tonal correction work. Go back to Edit and pull down to Yellows (see image below). Try adjusting the yellows. Do this for each color to see what effect it has. This is a great way to change individual colors quickly! When you get the colors you like click OK. Then in the Layers Palette, click the eye on and off next to the Hue/Saturation adjustment layer. Isn't it amazing how much influence you can have on an image. Save your document. This image will be used in the layout.

Try this technique with Arch.psd and editing the Blues.



You can use the Hue and Saturation adjustment to colorize an entire image even a grayscale image. Try it on Mount.psd. Add a Hue/Saturation adjustment layer with the half moon at the bottom of the Layers Palette. In the Hue/Saturation dialogue box check Colorize. This will convert your image to a duotone effect. Change the Hue for different colors and the Saturation for varied intensities of color.



SHARPENING

This is always the last step of any color correction because sharpening increases contrast. In fact you should be aware not to make your image too contrasty in Levels or when you go to sharpen it there will be a pixelated result.

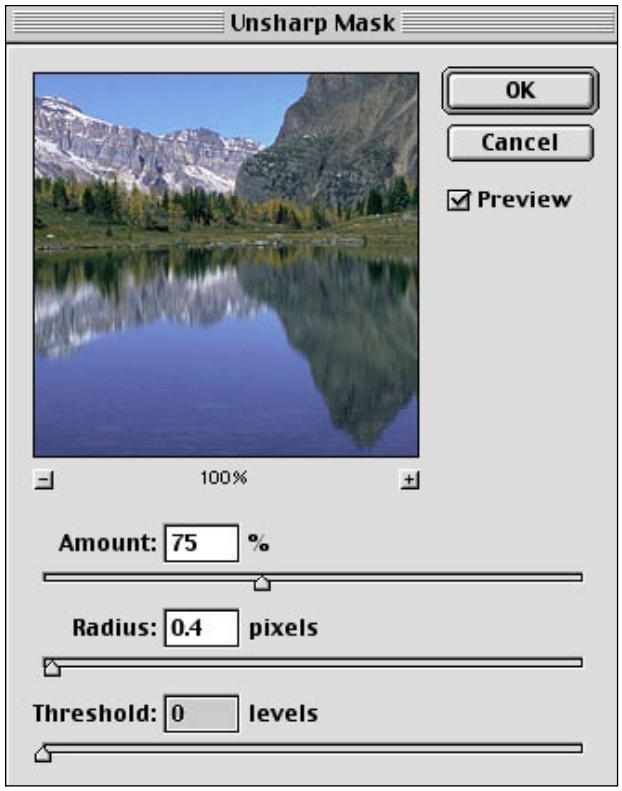
The first rule of sharpening is that your image should be viewed at 100%. Go to the Menu View > Actual Pixels to be sure it is at 100%. It will show as 100% in the Title Bar of the image and the lower left corner of the image when in Standard Screen Mode.

To apply sharpening use the menu item Filter > Sharpen > Unsharp Mask. This is the only way to control sharpening and is used by all serious images makers. In Unsharp Mask you can set three criteria:

Amount - controls overall amount or percentage of sharpening

Radius - controls how wide the sharpening effect will be by finding high areas of contrast around edges

Threshold - controls how much brightness difference exists between two pixels before they are considered edge pixels, basically it softens or blurs the image



All of these need to be considered together. If you move one the other is effected. Too much Radius adjustment results in posterization. So where should you start? That depends on the size, resolution, and type of image. Higher resolutions have more pixels and therefore would use higher numbers in the Unsharp Mask filter. For example an image of 4MB or more would need over 200% Amount and 1 Radius or more. Whereas images for the web you might try 100% Amount and under 0.5 Radius. Web images with lots of detail such as architectural images might need 150% Amount and 1 Radius. Web images with similar color areas as a portrait might start at 100% Amount, 0.5 Radius, and 4 Threshold. Threshold is great for portraits since you probably don't want every pore and blemish to show up. But these are just guidelines, each image will have to be inspected on its own. Use these numbers only as a starting point.

For very small selected areas of sharpening, there is a Sharpen Tool in the Toolbox of Photoshop. It looks like a triangle and is grouped with the Blur Tool. In the Options Bar you can specify the strength of sharpening. You use it like a paint brush. Be careful with this one. It can work really fast and pixelate your image.

RETOUCHING

Removing Dust and Scratches and other Artifacts
Using Filters to eliminate:
In Photoshop under the Filter Menu go to Noise: Median, Despeckle, or Dust & Scratches. All of these filters work the same way to get rid of artifacts, they blur the image. The higher number used the more blur. Try this on Old Image.psd These filter work especially well on backgrounds or unimportant areas. Select the area first, then apply the filter. You can select an area to apply the filter only to that area. Use the Clone Stamp Tool to cleanup important areas where more detail exist and the blurring is obtrusive.

Photoshop CS2 has a new tool that makes spotting magic. The Spot Healing Brush tool looks like a bandaid and is the first in that set of tools. Click on a spot with it and the spot will disappear! Just click on any spots you want to remove.

Using the Clone Stamp Tool to retouch:
The Clone Stamp Tool in the toolbox can be used to spot or retouch images. To use it option/alt click to target the area to repair from, let up on the mouse and then move your cursor over the area to be repaired and click and drag. It will copy the information from the target region to the damaged area. You can also use the Patch Tool and Healing Brush in Photoshop. All of these tools are near each other in the toolbox. The Patch Tool and Healing Brush blend as they retouch whereas the Clone Stamp Tool does not. The Healing Brush works like the Clone Stamp Tool, you must take a target sample first by option/alt clicking. With the Patch Tool it is necessary to select the area you want to sample from and drag it over the area to be blended (Destination in the Options bar) or select the area to be blended and drag to the sample area (Source in the Options bar). Experiment with these on the Old Image.psd
Retouching can be complex and could fill a whole course. We are only exploring with it for very basic fixes.

Eliminating Moiré Patterns:
A moiré pattern is a pattern that exists when you scan something that is from print. It is a halftone pattern that develops from the dots of offset printing such as books and magazines. If you find this happening when you scan in images, there are several ways to try to eliminate the pattern. Some scanners allow you to set it to Descreen while you are scanning. This works to eliminate the pattern by blurring the image slightly. It has a similar effect to using the Median and Despeckle Filter as described under Removing Dust and Scratches. But the most efficient way to remove a moiré pattern is to scan your image 2x the resolution needed then resize it in Photoshop. That means if you would be scanning at 300 dpi (which all scans should be, web or print), to remove a moiré pattern you would increase your scanning resolution to 600 dpi. That way more pixels will make up the image and the pattern will not be as noticeable. The image can then be brought back to 300 dpi in Photoshop so it is not such a big file using Image Size. Whenever you start out with more pixels it gives the program more information so that it can do a better job in performing the task you need done. That is why we scan images in at 300 dpi and NOT 72 dpi even though we may want to use the image for the web. We will discuss scanning, resolution, and resizing again further along in the course.

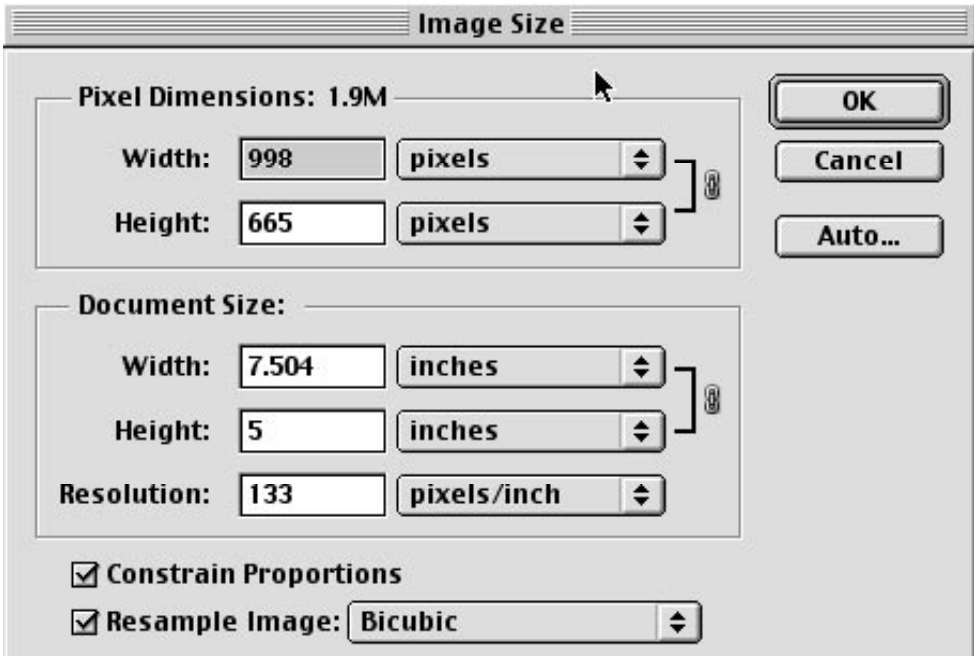
Removing Red Eye:
To remove red eye an easy way is to use the Sponge Tool in the toolbox and set the Mode in the Options bar to Desaturate. This will take the red color out and you can then put in the color of your choice by painting in the color you like or by selecting the eyes and filling them with a color. These both work best if you use the Color Blend Mode.
Photoshop CS2 has an automatic Red Eye Removal tool found with the retouching tools. Click on the red eye area with this tool and it is gone.

RESIZE YOUR IMAGE

When working with images that are for use on the Web, resizing can be the most important step to a good looking image. It can also seem complicated in the beginning.

There are several methods to get your image the size you need to use. You can change the size using the menu Image > Image Size... or you can crop the image. Let's start with Image>Image Size...since it is a more accurate method. Open up Mount.psd provided. Now go to Image > Image Size... This image has a low resolution of 133 but a large pixel size of 998 x 665. Notice there are two areas, Pixel Dimensions and Document Size. Pixel Dimensions are what we will be concerned about for web graphics. It tells you how big your image will be on a web page. Document Size refers to the Print dimensions. The Resolution of the Document size is directly related to the Pixel Dimensions. If you reduce the Resolution the Pixel Dimensions will decrease. You can get around this by turning off Resampling. Turning Resampling off allows you to change your Resolution independently of the Pixel Dimensions. Resampling is the process of adding or subtracting pixels from an image. When Resampling is checked, both the Resolution and Pixel Dimensions will change. Resampling down is the best way to go because pixels are thrown out to reduce the pixel dimensions. While Resampling up forces the Photoshop program to determine which pixels to add to the dimension to make it larger. This always gives a blurred result. It is always better to start out with more pixel information and discard some then it is to start with not enough. This is the main reason you should scan images in at 300 dpi. The extra pixels allow you to resize many different ways, for example print and web. They also give you more information to work with while color correcting so the changes are more accurate. If an image is too big and needs to be reduced to a thumbnail for instance, then it is best to do it in steps. Reducing a large image down all at once will create a soft, unsharp image. That means that let's say we have an image that is 640 x 480 pixels and we need it to be 100 x 100 pixels. It is tempting to just plug in the lower values and be done but this would be a mistake. Reduce your file no more than 50% at a time and apply Unsharp Mask slightly after each step. This may seem time consuming but it will result in more beautiful images.

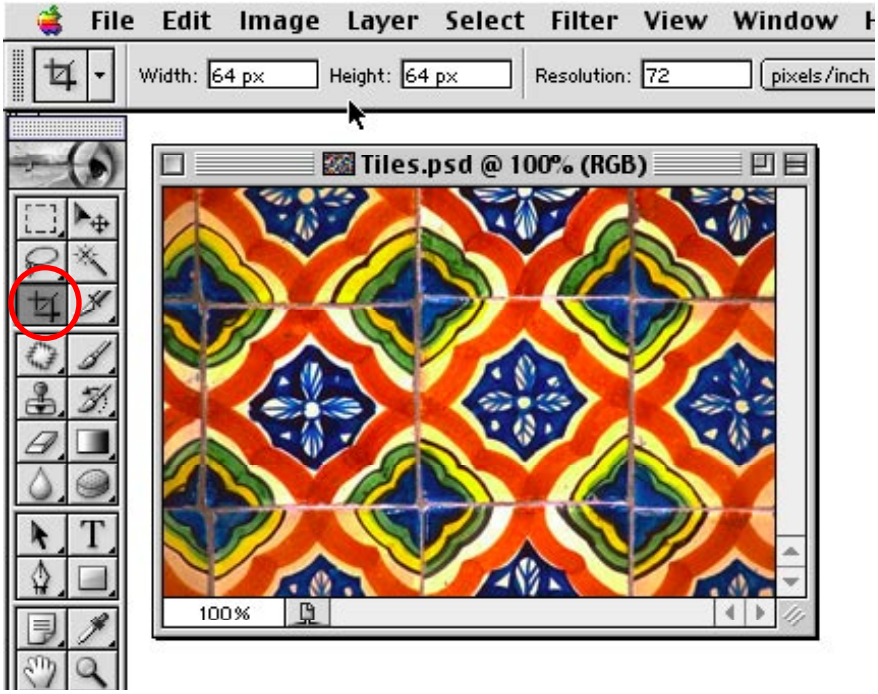
So let's do it now with Mount.psd. Say you want this image at a width of 125 pixels from 998 pixels. You would first change the pixel width to 500 approximately half of what it is. Click OK.



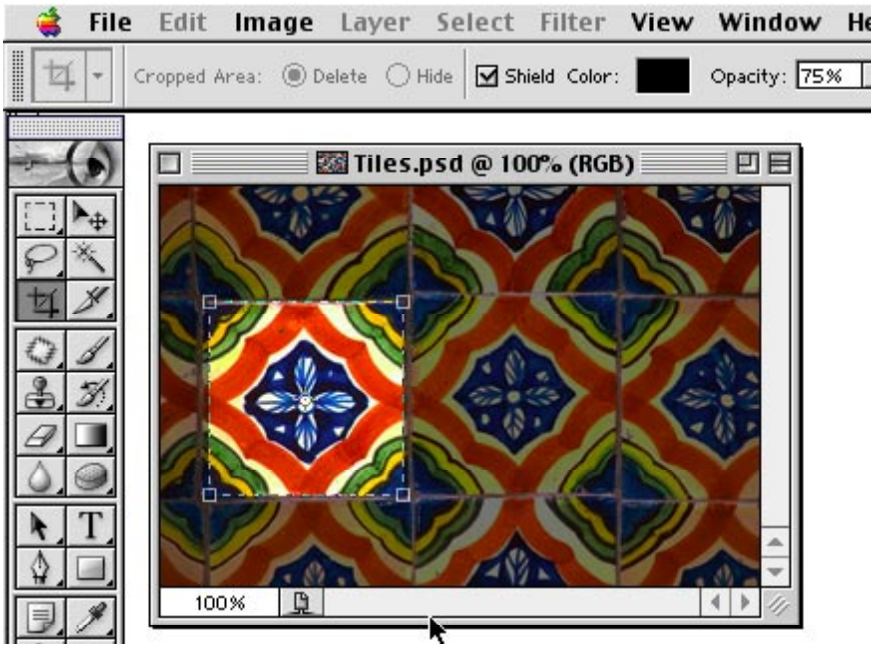
Now sharpen the image under the menu Filter > Unsharp Mask but only partially, about 75% for Amount, .04 for Radius and 0 for Threshold, click OK. Now open Image > Image Size... again and change the 500 pixel width to 250 pixels, click OK again. Sharpen the image again with Unsharp Mask, this time I set it to 90% Amount and .03 Radius. That's what seemed to work for this image but normally you need to bring these

values down not up. Do what looks good...what you see is what you get! Last time, open Image > Image Size... and change the pixel width to 125 pixels, click OK. Sharpen this final version with Unsharp Mask, this time I used 135% Amount and .03 Radius. You now have the correct width but what about the resolution? Open Image>Image Size... again and uncheck Resampling. Change the Resolution to 72, what most web graphics is. Now you will have a 125 pixel width image at 72 dpi. Click OK. It may seem like a lot of steps but it truly will give you better looking images. And it is already sharpened too.

Now for the Cropping method. This is the method I recommend for images that need cropping and resizing. Sometimes it is recommended to use both methods together if the image is really big, first resizing with Image Size and then cropping. Let's do this method with an image from your Lab work. Open Tiles.psd. This image is 300 x 200 pixels. We will crop one tile so that it is 64 pixels square. Get the Crop Tool from the Toolbox and set the Options Bar: Width 64 px, Height 64 px and Resolution 72 pixel/in. This will give us the exact size and resolution we need. Drag the crop tool around one tile of the image and hit return/enter. It's as simple as that. This can come in very handy for images with higher resolutions too. Just be cautious that you are not resampling too much.



Setting the width and height with the Crop tool. Make sure you also put in 72 dpi for resolution. Notice the Options bar changes for the Crop tool when you make your crop selection.

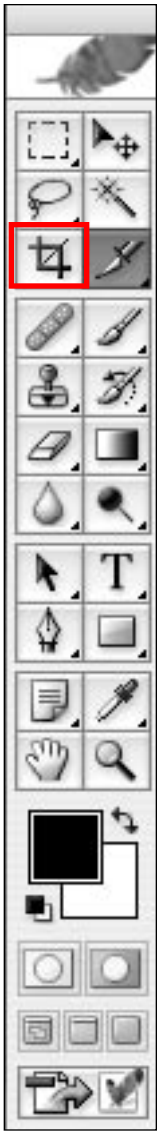


Three Methods to Straighten a Crooked Image

Method 1 - Using the Crop Tool

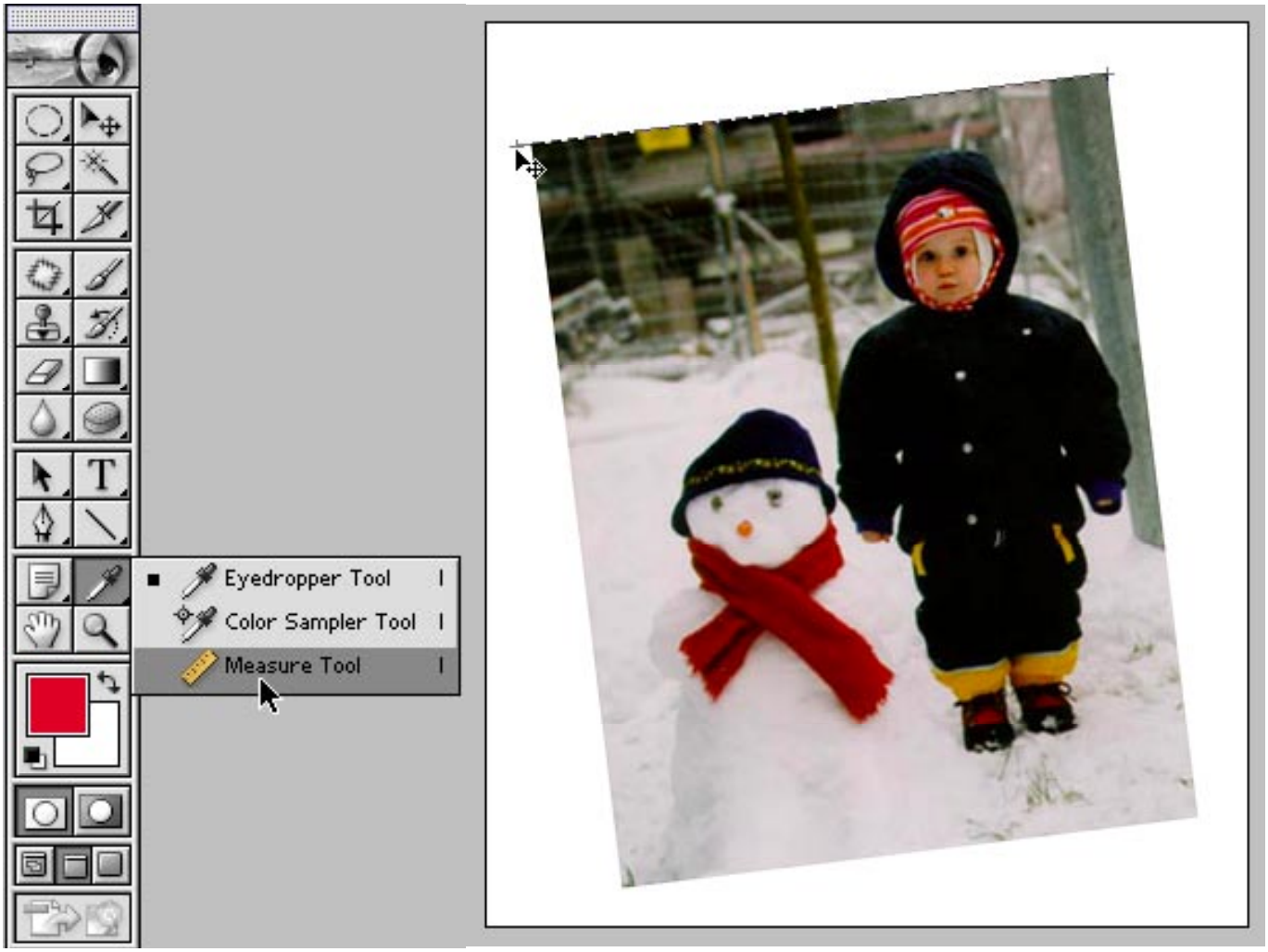
To crop a crooked scan with the Crop Tool, select the tool, click and drag over the image an approximate rectangle the size of the image. As you can see it needs to be rotated. Notice that when the cursor is outisde of the crop selection area it will turn into a curved arrow. Click and drag outside of the crop selection to rotate it. You can then click and drag on the little handle boxes on the crop selection to adjust it to the picture size.

Crop Tool



Method 2 - Using the Measure Tool

I prefer this technique. It is fast and simple. Get the Measure Tool from the toolbox (under the eyedropper tool). Using the Measure Tool click and drag a straight line along the top edge of the crooked image.



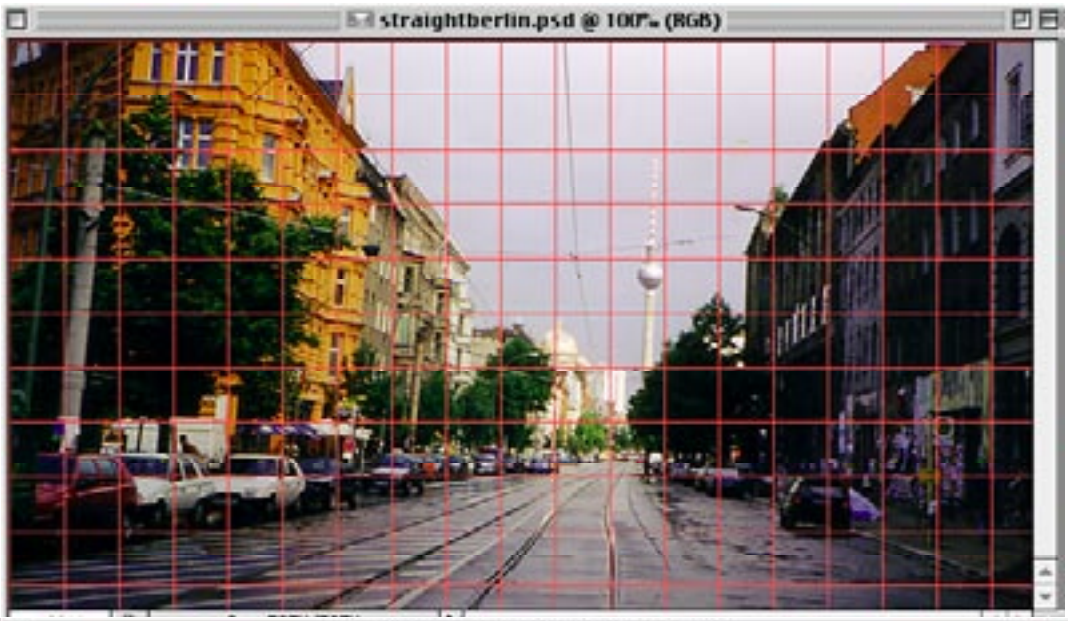
After making this line, go to Image > Rotate Canvas > Arbitrary. It will show the angle that the image needs to be rotated, simply click OK. You don't need to change any settings.

The image will be rotated. Crop it if desired.

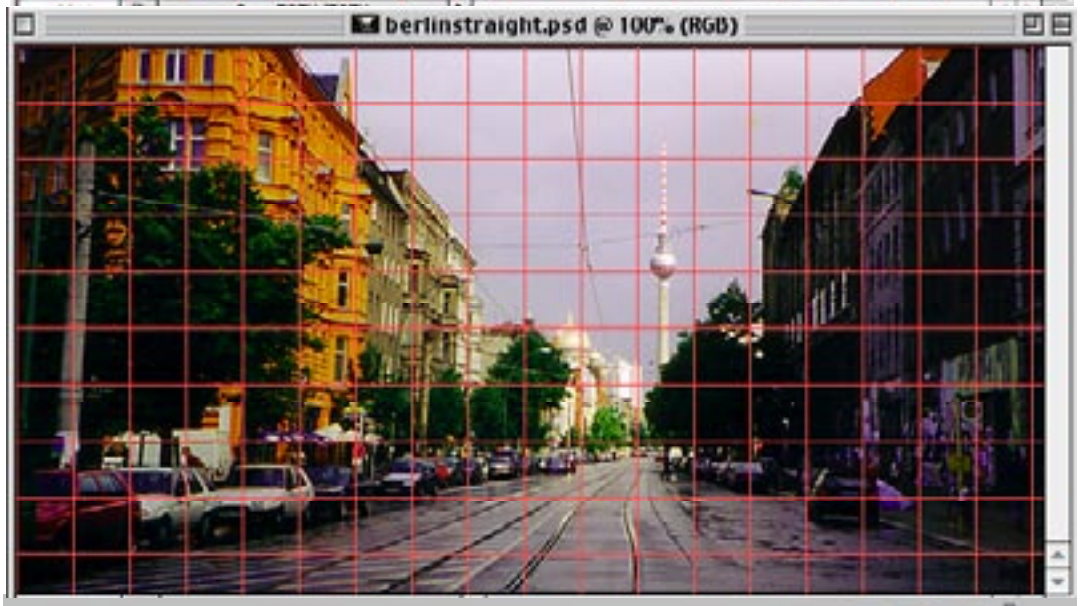
Method 3 - Using the Grid

This technique is especially good for images that have elements in them that doen't look straight. For instance a building that was photographed on a slight angle but should be straight with the frame.

View > Show Grid (adjust grid intervals in preferences if necessary)

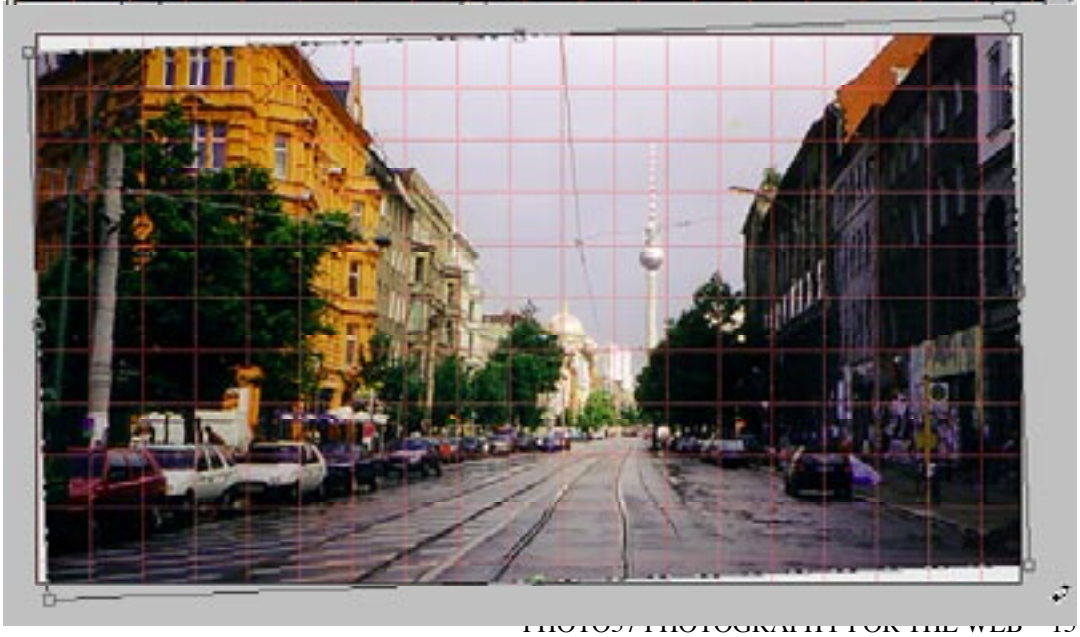


BEFORE
Berlin TV Tower is crooked



AFTER
Berlin TV Tower is straight
Image after cropping.

Full Screen Mode in the Toolbox was chosen.
Select > All
Edit > Transform >Rotate
After image was rotated a rectangular marquee selection was made around image, then an Image > Crop



DURING ROTATION
Berlin TV Tower image being rotated to align it to the grid.

DIGITAL CAMERA NOISE REDUCTION

Older digital cameras and those with lower resolutions can produce images with noise or artifacts created while capturing and jpg compression. The Blue Channel shows errors of a scan, artifacts, and noise. The CCD which captures an image is least sensitive to the blues and hence it is the most difficult color to interpret. This is further weakened by JPEG compression which causes noise in the blue channel. Here is a technique that can correct for these problems.

1. Zoom into difficult areas such as skin tones to see problems. Note: You can also check the blue channel.

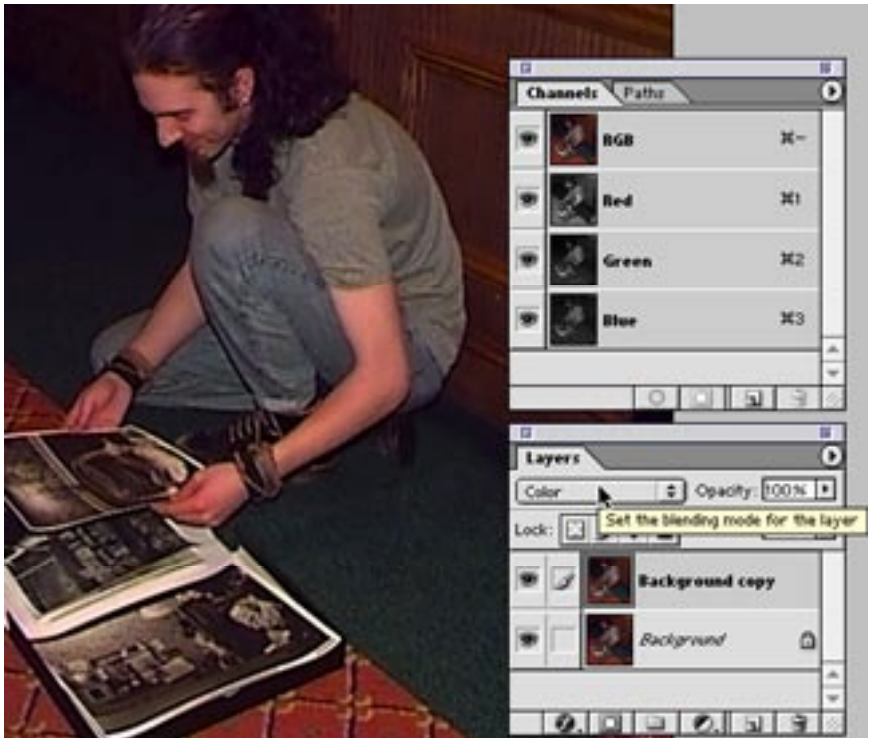
2. Zoom back out.

3. In the Layers Palette, duplicate the original image.

4. Soften this duplicate image: Filter > Blur > Guassian Blur (set between 3 and 4 checking trouble areas) Don't worry that the image is very blurry we will correct for it in the next step.

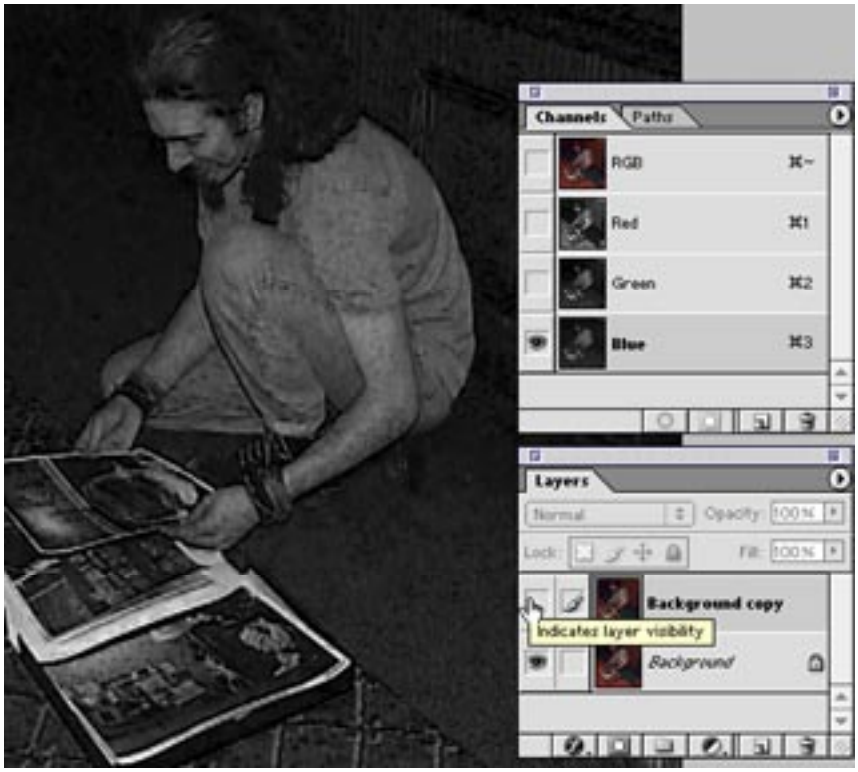
5. With the duplicate layer highlighted, set the blend mode in the Layer Palette to COLOR (this blend modes preserves the highlight and shadow information of original image) The blend mode can be found in the layers palette where it says Normal.

6. The image should look better now. Check the Blue Channel by zooming into it to see if artifacts and noise have been diminished if you want to further check the results.

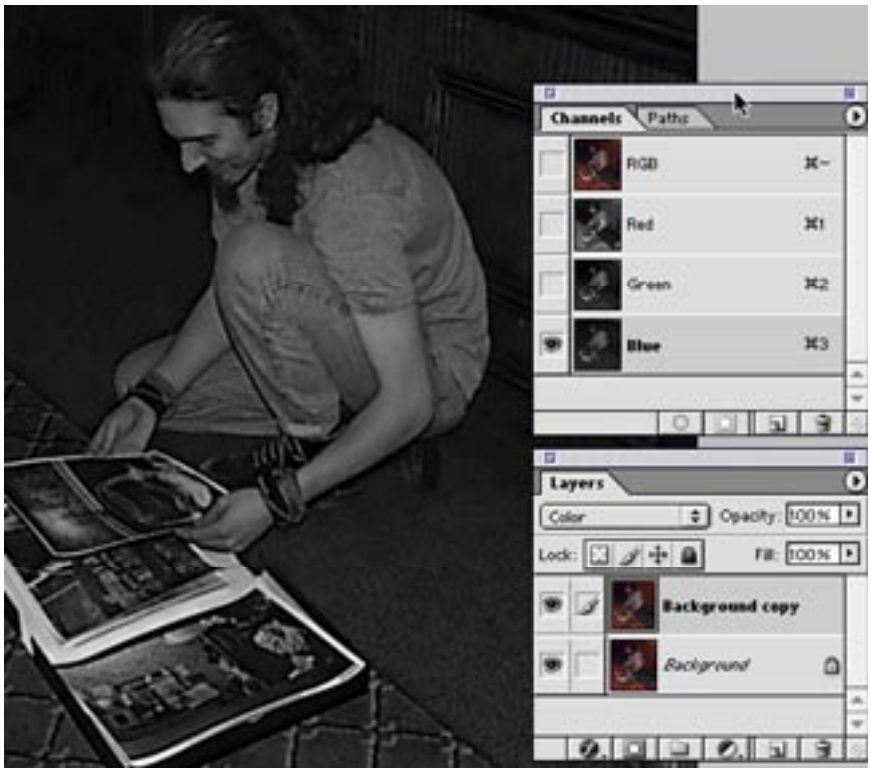


Here is an example of this on an image from a low end Kodak Digital Camera.

BEFORE
Blue Channel Visible



AFTER
Blue Channel Visible
Take note of the skin areas.



WARMING UP IMAGE WITH TINTS

Digital Cameras can tend to create cool images. Here is a technique to warm up your image.

1. Create a new layer over your original image.
2. Fill it with yellow-orange in the Color Picker setting these values:
   R = 255
   G = 102
   B = 0
   Or use any color that you like with this techniques. You can make a warm image cool by using a blue color.
3. Apply a Blend Mode in the Layer Palette of COLOR BURN to blend.
4. Adjust the opacity to create the intensity desired.

This can also be done using the Photo Filter adjustment layer.

COLOR ENHANCEMENT USING "DIGITAL GELS"

This is an advanced procedure, keep it for reference as you learn more about Photoshop.

1. Create a new layer above image using the POP-OUT menu.
   Set the blend mode to Soft Light and check Fill with Soft-Light-neutral color (50% gray)
2. To create Gel Color:
   Image > Adjustment > Hue and Saturation
   Click on Colorize and move the Hue slider to adjust the color (the gray will turn to the color)
   The Lightness slider will now effect the midtones of the image.
3. Adding a Layer Mask with a gradation to effect only portions of the image. OR paint with a soft brush in the Layer Mask to control the gel color. Painting with white to give more color, paint with black for less color.
4. The Gel color can be adjusted anytime by going back to Hue and Saturation with Colorize UNCHECKED and adjust the Hue.