

# Adobe Photoshop: Preparing Images for the Web

## Introduction

Adobe Photoshop is an industry leading image editing software package that offers a variety of powerful tools for creating and editing images for print and Web presentation. This tutorial covers the fundamental procedures for doing simple adjustments to images and saving them for publication on the Web. To follow the procedures outlined in this tutorial, you will need to have image file available for experimentation.

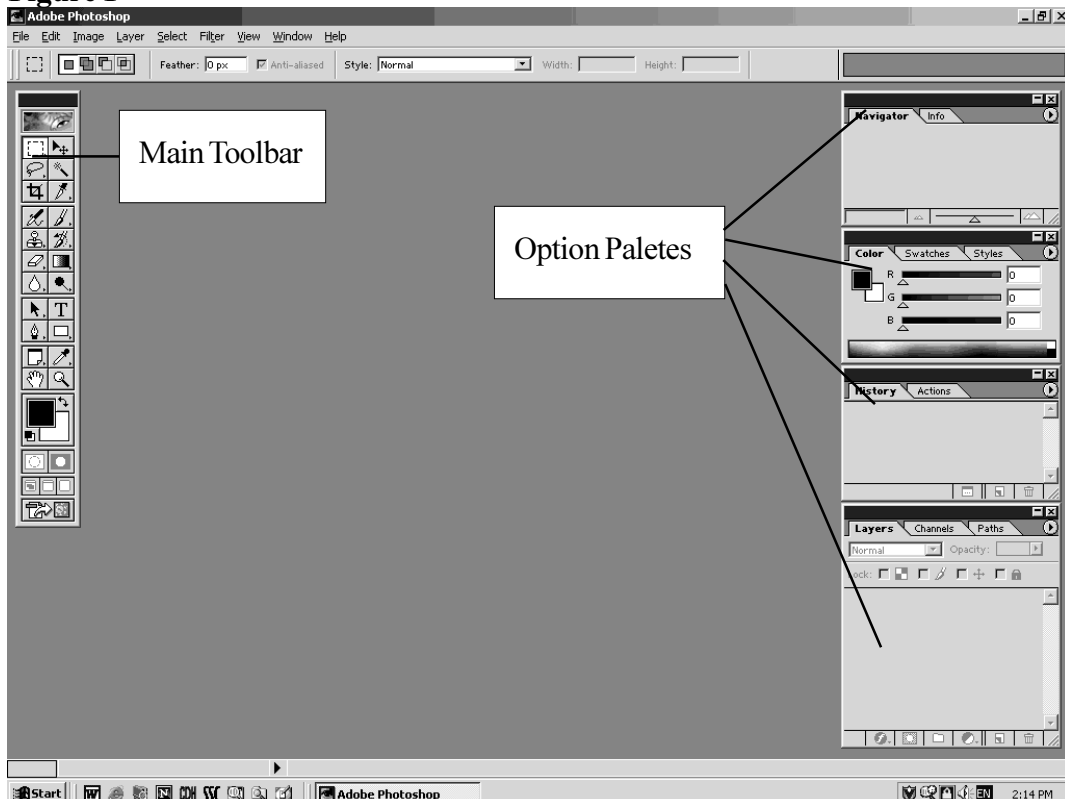
## Overview

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Adobe Photoshop tools are organized among pull down menus and floating toolbars. *Figure 1* below depicts an image of Photoshop when it starts without an image file open. The main tool bar is on the left. Other option palettes are on the right.

**Figure 1**



## Opening An Image File

To open your image file. Select the *File* pull-down menu, then select *Open*. You can then use the file window to search for the location where your file is stored. The *File > Open* window is depicted in *Figure 2*. When you open your file it will appear in its own window within Photoshop. The title bar on the image window will show the name of your file and display the scale at which your image is being viewed. Any percentage number less than 100 means that you image is being shown smaller than its real size. In *Figure 3* below, the picture of Seattle (seattle.tif) is being shown 46.7% of its actual size. You can use options on the *View* pull-down menu to zoom in and out.

**Figure 2**

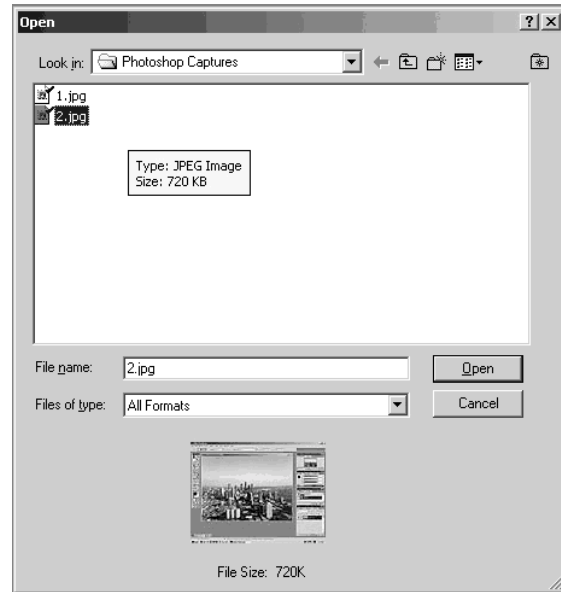
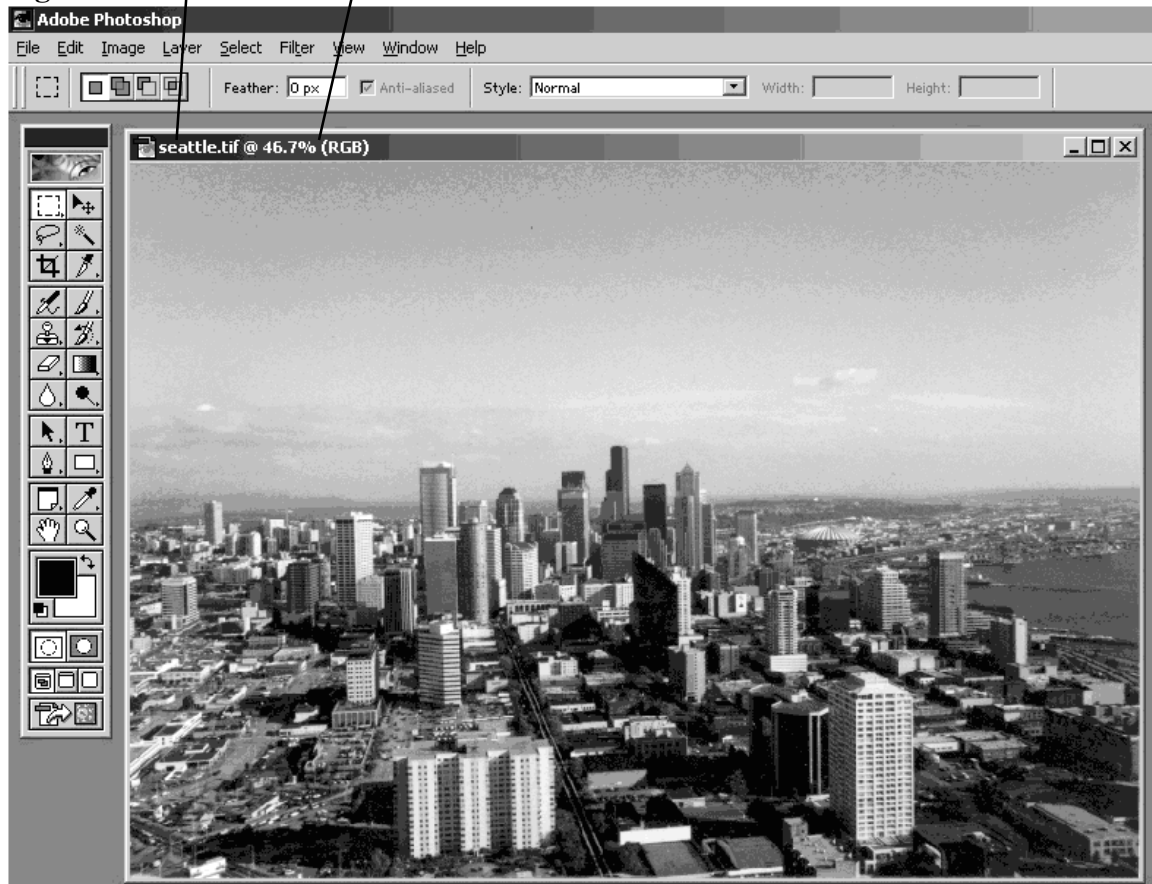


Image shown with the filename shown in the Title bar

“seattle.tif” is being show as 46.7% of actual size

**Figure 3**



## Adjusting The Appearance Of Your Image

Once you have your image open, you will probably want to adjust the color, brightness, contrast, and color balance (Too blue? Too Green?) of your image.

### Brightness and Contrast

To adjust the brightness and contrast of your image, select *Image > Adjust > Brightness/Contrast...* from the pull down menu. This is depicted in *Figure 4* at the right. Upon selection of this option a window will pop up with sliders for adjusting brightness and contrast independently. This window is displayed in *Figure 5*.

In making these adjustments you can click and hold the sliders and move them left or right, or you can directly input a number in the small boxes above each slider. Make sure the *Preview* box is checked. This will insure that as you make an adjustment, the image you have open will show the change. Once you are satisfied with the adjustments, select OK. The dialogue box will close and the changes will be applied to your image.

### Color Balance

To adjust the color balance of your image, select *Image > Adjust > Color Balance*. The Color Balance window will pop up. It is displayed in *Figure 6*. In it you will find adjustments for Color Balance and Tone Balance. Make sure the *Preview* option is checked so you get immediate feedback on your adjustments. Once you are satisfied with the appearance of you image, select OK and the window will close.

Figure 4

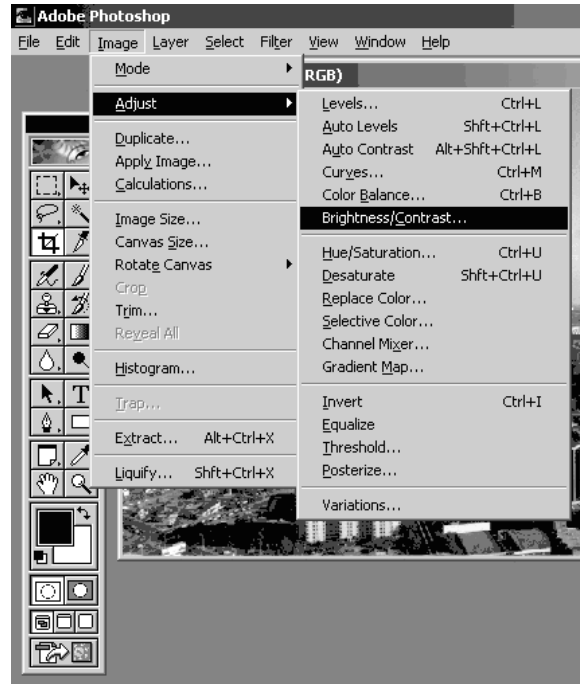


Figure 5

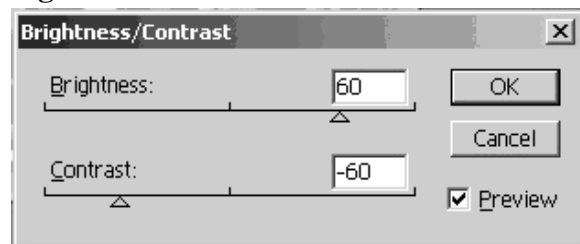
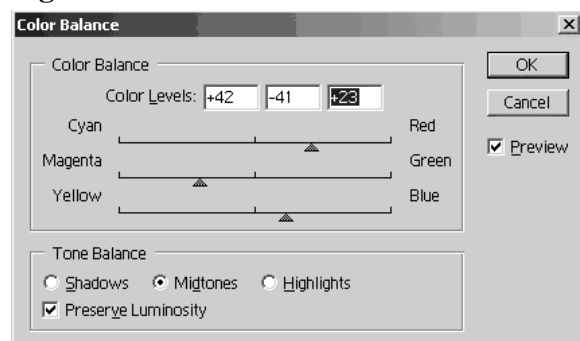


Figure 6



## Resize Your Image

If you scanned your image at 300DPI, it is probably far too large in terms of both pixel dimensions and file size (bytes) to put on a Web page. It would be best to shrink your image to a size that is appropriate for Web pages. A reasonable width for an image on a Web page is 400 to 500 pixels wide. If you produce a Web page with 12 point font, 500 pixels in width is enough horizontal space to fit 10-13 words on a line - roughly the equivalent of a book page. Thus it is probably a good idea to produce an image that will fit within that space. A width of 400-500 pixels will do well. Of course you could always produce images that are smaller, but you will have to decide how much detail is acceptable to lose when you resize your image down.

To resize your image, select *Image > Image Size* from the pull-down menus. This will open the *Image Size* options window. The location of the *Image* pull-down menu is displayed in *Figure 7*. The *Image Size* options window is displayed in *Figure 8*.

It is easiest to resize your image using pixel dimensions since it makes it easy to compare it to the dimensions of other objects on a Web page. Thus, you should select your new image size based on the *Pixel Dimensions* settings.

Looking at the options listed at the bottom of the *Image Size* window, make sure that *Constrain Proportions* option is checked. This will insure that the height to width ratio of your image will remain the same no matter what size you pick. Note that when this option is checked, if you input a new width, the height will adjust automatically, and vice versa. If the *Constrain Proportions* option is not checked it will be possible to stretch, compress, and generally distort your original image. In other words, the width and height dimensions will not adjust automatically.

Also, make sure the *Resample Image* option is also checked. The *Bilinear* option will give you the best results. The *Resample Image* option will insure that your resized image appears smooth, without jagged edges and pixelation. Select *OK* when you finish with your adjustments.

Figure 7

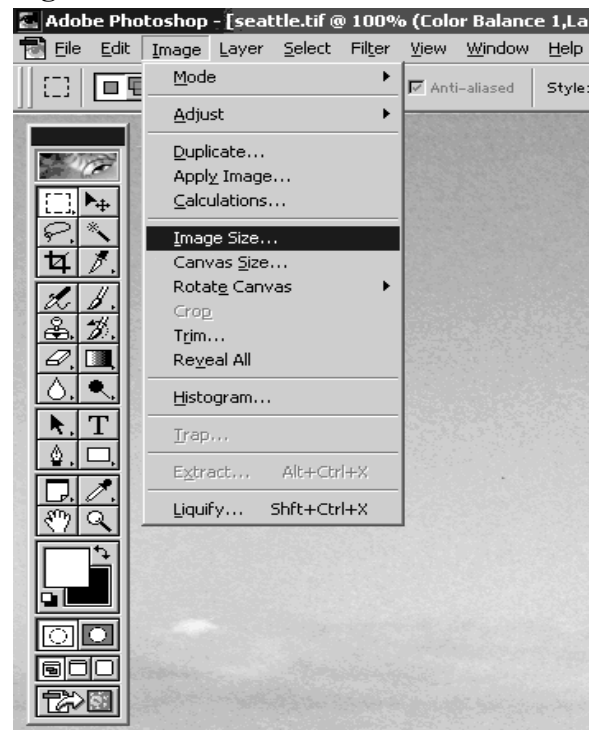
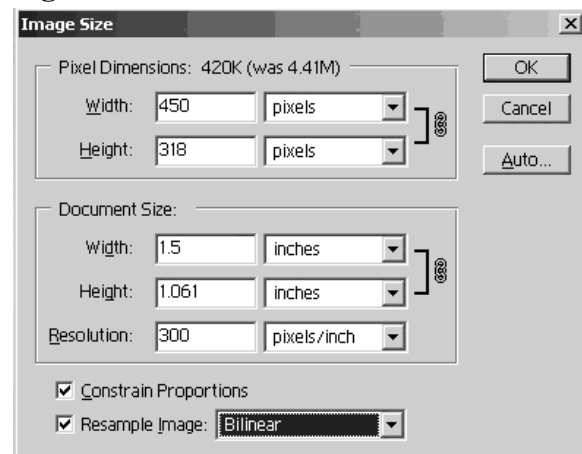


Figure 8



## Applying Filters

After you resize an image, it may appear a bit blurry despite the best efforts of the re-sampling methods you applied. An easy way to deal with this is to apply filters to fix the problem. Photoshop offers a wide variety of filters for images. Many are exotic and allow you to create interesting effects in your images. They will allow you to blur, distort, add noise, make the image appear as if it were a charcoal sketch, etc. The one filter we are concerned with here is the sharpen filter. This filter will enhance your image so it looks a bit more crisp. This is especially helpful if resizing has blurred your image.

To apply the sharpen filter, select *Filter > Sharpen > Sharpen* from the pull down menus. The filter will be applied automatically with no other options available. However, other filters such as blur or sketch may offer option windows that allow you to fine tune the filter. The sharpen filter as well as a selection of other filters are displayed in *Figure 9*.

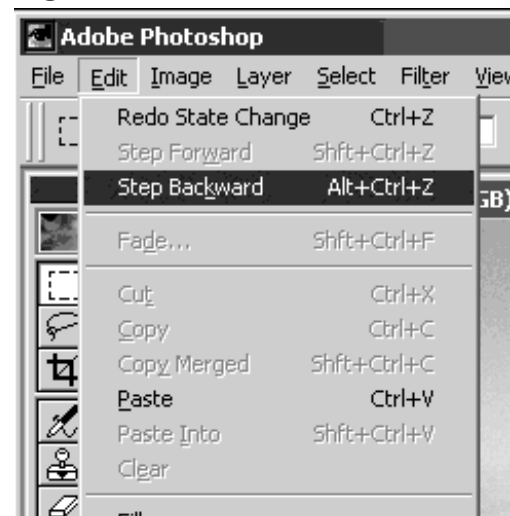
**Figure 9**



## Undo Through Stepping Backwards

If you make a mistake in applying filters or with any other operation described in this tutorial, select *Edit > Step Backward* from the pull down menus. This will undo the last operation you applied, thus removing your mistake. You can select this option multiple timesto undo consecutive steps you made. This option is displayed in *Figure 10*.

**Figure 10**



## Cropping Your Image

Rather than resize your entire image, it may make more sense if you crop the original image to only include those bits of the image that are important for your purpose. Cropping an image is like zooming in on a specific portion and saving only that portion for viewing. If you scanned your image at a high enough DPI (300 DPI is usually good) you should be able to crop out details of your picture and still have an acceptable image to post on the Web.

To crop an image select the crop tool on the Main Tool bar. The location of the tool is displayed in *Figure 11*. Select the crop tool and then click and hold on your image to draw a box around your image. The parts of the image within the box represents the part of the image you will keep. Anything outside of the box will be discarded.

*Figure 12* shows a crop box that has been drawn around the King Dome in the picture of Seattle. If you are not satisfied with the initial box, you can adjust each side of the box independently by clicking, holding and dragging the handles. Once you are satisfied with the crop area hit the *Enter* key on your keyboard.

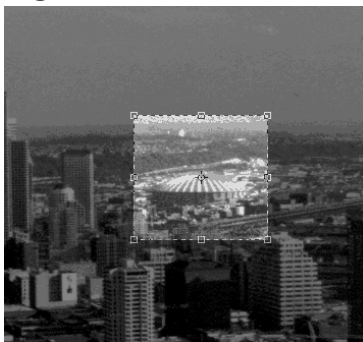
*Figure 13* displays what the final cropped image of Seattle looks like. Clearly the resolution of the original image was high enough for a decent image of the King Dome.

*Figure 14* shows what the cropped image of the King Dome would look like if the resolution of the original were too low. The dots of the original image would be displayed as blocks of color. The image suffers from a blocky appearance, other wise known as pixelation.

**Figure 11**



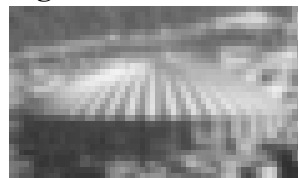
**Figure 12**



**Figure 13**



**Figure 14**



## Saving Your Final Image For The Web

Once you have made all the adjustments you want to your image (including color adjustments, brightness, contrast, image size, and crops) you will want to output it in a format that is appropriate for display on the Web. In other words, you need to save your image in the proper file format.

The two most commonly used image formats for the Web are JPEG (pronounced Jay-Peg) and GIF (pronounced Jiff - like the peanut butter). The JPEG format is best for continuous tone images such as color and black and white photographs. It is capable of displaying up to 16 million different colors (roughly the equivalent of human eyesight). It also allows for compression so that file sizes can be kept small. GIF is appropriate for simple artwork and line drawings such as cartoons. The GIF format can only display 256 colors. There are advantages and disadvantages of each. These formats are compared in detail later in this tutorial, suffice it to say that we should save the images of Seattle in JPEG format.

To save an image file, select *File > Save for Web...* from the pull-down menus. This is displayed in *Figure 15*. This will bring up the *Save for Web...* window, which is displayed in *Figure 16* on the next page.

In the *Save for Web* window you can select the file type, Quality Level, and Compression Level of your JPEG File. If you select *2-UP* from the Tabs at the top, the window will show you your original image file along side your adjusted version. Statistics for the images are displayed at the bottom of each image. As can be seen from *Figure 16*, the original image file is a bit large at 419K. Clearly it is too large to force someone to download over the Web. The revised version in JPEG format at Maximum Quality of 80 is only 74.81K. This is a reasonable size for download on a Web Page. By adjusting the file quality and other settings in this window you can further optimize your image for display on the web. Each time you make an adjustment the new file, a revised format, file size and download time will appear at the bottom of the new image. Once you have the correct settings, select *OK*. Photoshop will then ask you where you want to save your file. Select the location, enter or change the filename and hit *OK*. Your file is saved and you are ready to install it on a Web page!

Figure 15

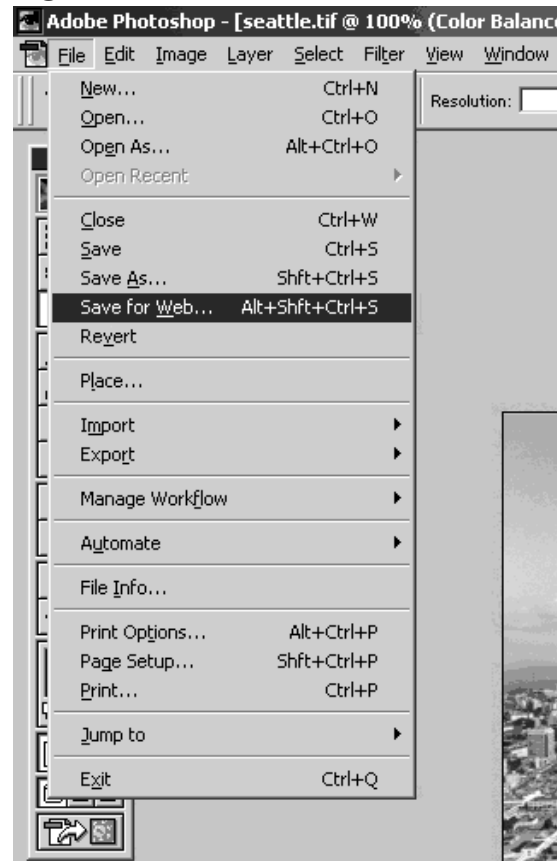
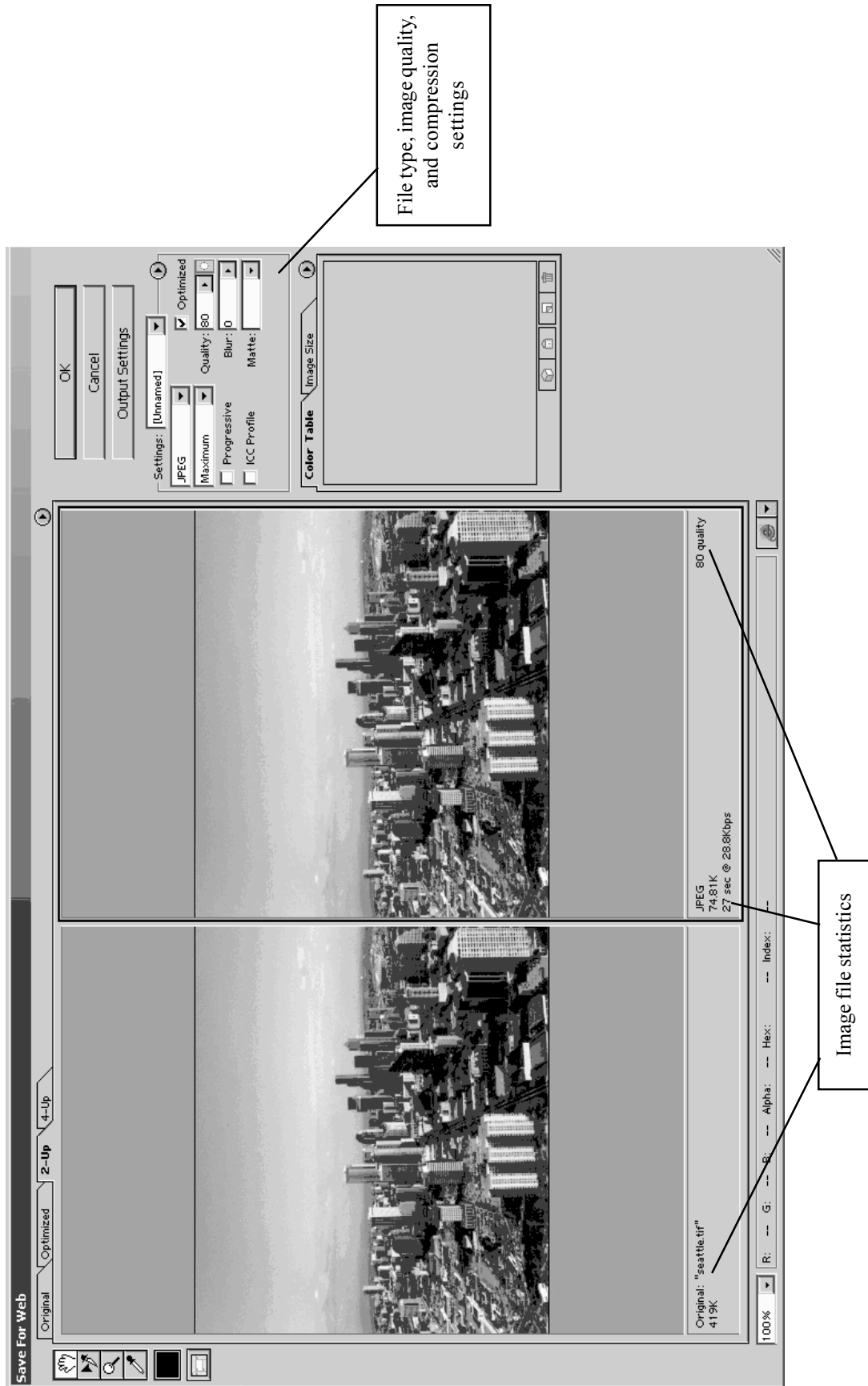


Figure 16





## How Do I Create Thumbnails For My Webpages?

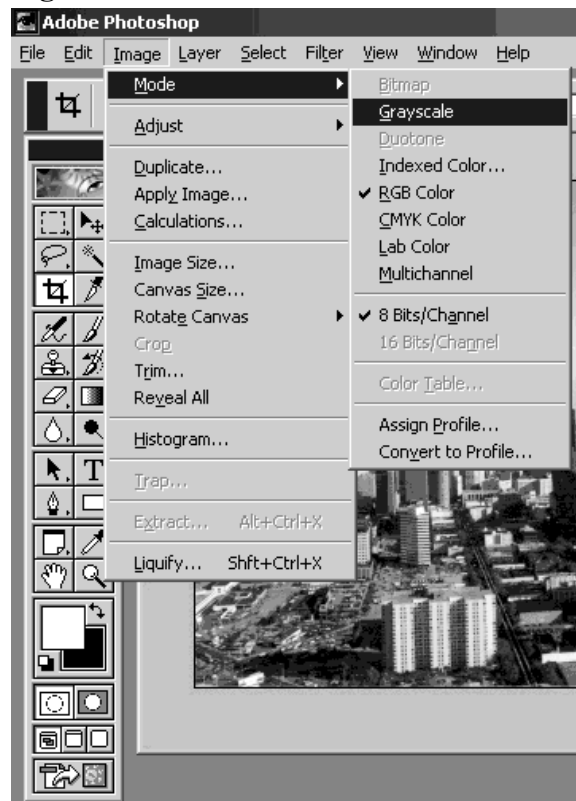
Thumbnail images are simply smaller versions of an image often used as a hyperlink on a Web page. They have a number of advantages: you can fit many small thumbnail images on a web page without dramatically increasing download times, they allow the viewer to get a good idea of what an image is before they download it, they can be used as a hyperlink to directly link a viewer to a larger version of a file.

You have already learned how to create Thumbnails. You simply need to save two versions of your image. One - a small thumbnail version done through resizing, the other is the larger color version.

Thumbnails are typically very small 100 - 150 pixels in width. Thus, when you resize an image, simply resize the width down smaller. To further shrink the file size (but not the dimensions of your thumbnail image) it is a good idea to create them in grayscale color rather than full color. Grayscale files are typically smaller than their color siblings since it takes less information to encode a grayscale file. By producing images in grayscale you can shorten the download times of your thumbnail page even more.

To convert your image to grayscale, select *Image > Mode > Grayscale* from the pull-down menus. This is displayed in *Figure 17*. There are not options or adjustments to make. When you select Grayscale, your image will be converted to grayscale coloring immediately. Then resize your image and save it for the Web.

Figure 17



## Imaging Tips

- Images for the Web should be no larger than 150KB. Any larger and viewers will have to wait for a long period of time to download your images.
- Save multiple thumbnail images on one page. Hyperlink each thumbnail to one separate full size color image. This way viewers aren't forced to download all the large images at once. They can pick and choose which ones they want to see.
- List the file size of the full sized image under the thumbnail. This will allow the viewer to estimate how long it will take view the image.
- Produce the thumbnails in grayscale format. Since thumbnails are typically small, color is not needed since the details will not show clearly, however, grayscale color will reduce the file sizes and shorten the download time for your thumbnail page.
- Images should be no larger than 400-500 pixels wide. This will keep them the standard book width and will prevent viewers from having to scroll their web browser horizontally to see the entire image.
- Rather than post one huge image, if you want to show details, produce a larger full image at approximately 400-500 pixels wide. Then include a couple of cropped images and associated thumbnails that highlight specific details.
- Scan your images at 300 DPI. If you wish to crop your image to show details, you may wish to scan at a higher DPI, in the range of 400-600 DPI.
- Unless you are using images for a test, it is a good idea to add captions to the images. What are they showing? What should the viewer look for? What are is the purpose or goal of showing the images?

## Image File Types

The most widely used image file types in Web page design and construction are \*.gif (pronounced jiff - like the peanut butter) and \*.jpg (pronounced jay-peg). Both are raster type files; the image in the file is made up of a mosaic of pixels. Lets have a closer look at each one below:

### ***GIF (Graphics Interchange Format)***

CompuServe, Inc. originally developed the GIF format. It is a file format suitable for images that contain large areas of flat colors (that is, no gradations). Examples might include simple graphics and single color line drawings. Below is a list of the major characteristics of the GIF format:

- Limited to 256 different colors; it is best used for simple graphics and line drawings
- Can be used for simple animation
- Images can have transparent backgrounds
- Not good for images that display gradations of color like color photographs
- Files have the following form: *image.gif*

### ***JPEG (Joint Photographics Experts Group)***

This was (and is) a group of experts nominated by national standards bodies and major companies to work to produce standards for continuous tone image coding. JPEG is designed for compressing either full-color or greyscale images of natural, real-world scenes. It works well on photographs, naturalistic artwork, and similar material; not so well on lettering, simple cartoons, or line drawings. Below is a list of the major characteristics of the JPEG format:

- Displays up to 16 million colors (roughly the equivalent of human eye-sight)
- Best for full color or greyscale images
- Not good for text or line drawings
- Images can not have transparent backgrounds
- Images can not be animated
- Files have the following form: *image.jpg*
- Images can be compressed but image quality will degrade dramatically with higher compression levels

### **Color vs Black and White (aka Grayscale)?**

Only use color if it is absolutely necessary. Color files are much larger than black and white and take longer to download for a web page over the Internet. If you are going to print your images on a laser printer or onto overheads it is best just to stick with black and white.

### **When I scan images from books or magazines I get a funny pattern in my scanned image that wasn't there in the original!**

Printed images in books and magazines use a very coarse dot pattern (dots are spread apart) rather than continuous layers of color (like in a photograph). When you scan these images with

a flat bed scanner, the dot patterning of the scanner and the dot patterning of the original image can combine and interact to produce odd interference patterns in the final image. These patterns are called “moire” (pronounced *more-rey*) effects. You can find moire effects in many places - if you look through a chain-link fence at another similar chain-link fence, you will see these patterns. Most decent quality scanners will offer an option for removing this pattern when you scan the image. Look for an option in the EPSON software that allows you to turn on “descreening” by clicking on the “Image Type” button (not the pull down list, but the button to the left of the list) or, if your using a differnet type of scanner, look for “moire reduction” or turn off “half-toning”.

## **Links**

### **Web Developer’s Virtual Library**

**<http://wdvl.com>**

This is probably the best site on the net for learning about Web design and Construction. It is loaded with tutorials, hints and tips on everything from HTML code to Navigation, Java, XML and image editing. It is suitable for both beginners and advanced programmers. Best of all, everything on this site is free!

### **Webmonkey: The Web Developers Resource**

**<http://hotwired.lycos.com/webmonkey/>**

Like the WDVL above, Webmonkey offers a comprehensive selection of tips and tutorials for Web page design and constructon.

### **David Eisenberg’s “Why Good Images Go Bad: A Guide To The Effective Use Of Images On Your Web Site”**

**<http://www.catcode.com/imgguide/index.html>**

At this Web site, David provides a detailed overview of the difference between GIF and JPEG image file types. Here you will learn about file sizes, colors, animation, and tranparency.

### **Photoshop Workshop**

**<http://psworkshop.net>**

This site works as a sort oflink exchange for Adobe Photoshop Tutorials. You can find all sorts of different tutorials. Perhaps the most useful are the ones that examine how to scan, edit/retouch photographs. At the time of writing of this tutorial there were 43 tutorials linked through psworkshop.net.