Hands-on Activities for InTech Lab Workshop

Photoshop for the Web

Prepared by Jill Lenz
Presented Spring 2009

Goal: Introduce users to general guidelines on optimizing digital images and producing .gifs and .jpgs for display on computer monitor screens, especially web pages, RamCT, PowerPoint presentations and multimedia CD/DVDs.

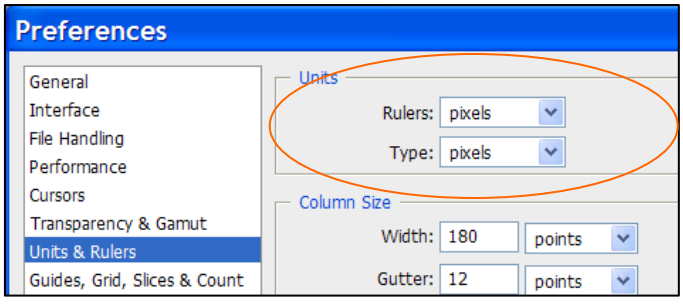
Upon completion of this workshop, users should become familiar with:

- Image acquisition tools available in the CVMBS InTech Lab
- Digital imaging management tips
- Photoshop preferences for the Web and PowerPoint images
- How monitors display digital images
- CMYK vs. RGB Color Mode
- Rotating and cropping
- "Save for Web & Devices" functions (available in Photoshop 6.0 and up)
- Applying various quality compression levels in .jpgs to achieve smaller file sizes
- Reducing colors in .gifs to achieve smaller file sizes
- Transparency options for .gifs
- Size Guidelines
- Creating a Web Photo Gallery and File Info

Units and Rulers Preferences for Screen Work

Set "units of measure" options, as Web designers work in pixels on a screen, where folks in the print world work in inches and points on paper.

1. Edit > Preferences > Units & Rulers
2. Change units for both "Rulers" and "Type" to pixels.
3. Click OK.



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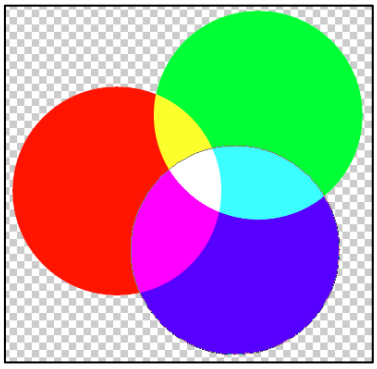
RGB Color Mode

RGB or Additive Color Mode. If we are working on a computer, the colors we see on the screen are created with light using the additive color method. Additive color mixing begins with black and ends with white; as more color is added, the result is lighter and tends to white.

Percentages of red, green, & blue light are used to generate color on a computer screen.



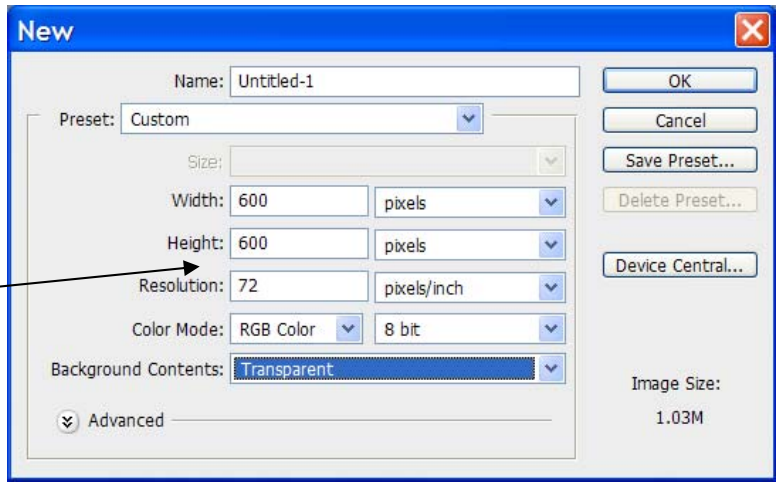
When two primary colors overlap, the **additive secondary** colors (Cyan, Magenta, and Yellow), used for printing, are created. When all three primary colors are combined, you get white!

Use the color wheel you create for reference when doing color corrections in retouching work:

- Add more yellow to reduce bluish casts and vice versa
- Add more magenta to reduce greenish casts and vice versa
- Add more cyan to reduce reddish casts and vice versa

In this exercise we create an image with three circles of color (Red, Blue and Green) to represent the **additive primary** colors, used for screen colors. This will also serve as a good review of the layer palette and the shape tool, and the color picker.

1. File → New
   Complete the dialog box with the following values:
   - Width = 600 pixels
   - Height = 600 pixels
   - Resolution = 72 ppi for screen presentation. (Use a higher number for printing.)
   - Color Mode = RGB Color
   - Contents = **Transparent**



2. Display the Layers Palette if necessary (Window > Show Layers)
3. Rename the layer to "Red"
   (Double click on the layer name to rename)
4. Select pure red for the Foreground Color Chip from the Color Picker numerically using the values R = 255, G = 0, B = 0.
5. Change the blending mode to Screen.
6. Draw a circle with the Custom Shape Ellipse Tool.
   (For a perfect circle, hold down the SHIFT key before your initial click.)
7. Duplicate the Red layer and rename it to Green.
   (Select the layer, right click and select Duplicate. You will be prompted to accept the default name or change it to Green.)
8. Change the color to pure green.
   (Double click in the layers color chip and numerically select pure green using the values R = 0, G = 255, B = 0.)

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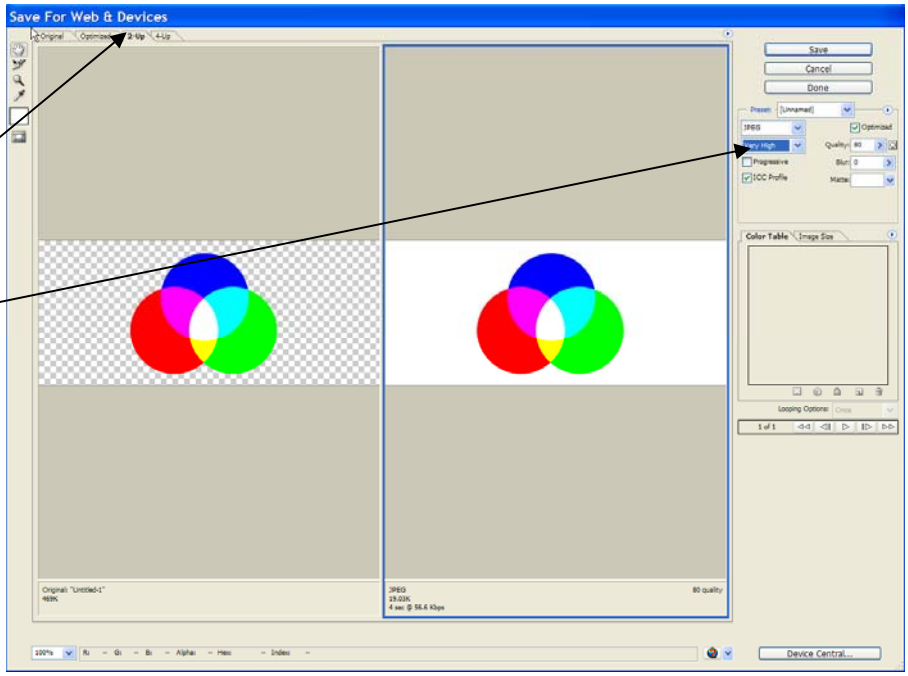
9. Using the Move tool, position the green layer so it overlaps the red layer.
10. Duplicate the Green layer, rename it to Blue, recolor it pure blue and position it so it overlaps both the red and green layers.
11. Save as circles.psd

Save as .jpg

File size for jpgs are controlled by the **level of quality** applied during the save function. We will save the same image at multiple quality settings and then inspect it at a high zoom level to compare.

1. File > Open circles.psd
2. File > Save for Web and Devises
3. View the 2-up tab to see the original and a preview of how it will look after saving
4. Verify the preview has the .jpg extension chosen
5. From the Quality options directly below, use the drop arrow to access the different Quality levels. There is also a slider available for more precise control. Choose a modem speed from the top right arrow and Photoshop will list the approximate size and time of download in seconds per KB at the bottom of the image. This is important information for web designers.



Guidelines for Image File Sizes
   - Web: High speed network (CVMBS) < 100 K
   - Web: Phone modems (off campus) < 50 K
6. Save separate copies of the circles file using three of the five Quality levels:
   - Low = 10% quality named circles_low.jpg
   - High = 60% quality named circles_high.jpg
   - Maximum = 100% named circles_max.jpg

7. Open the three files you created.
8. Use the Zoom Tool to enlarge each image to 200%. Inspect each image to see what artifacts have appeared at the different quality levels. Also, inspect the original PSD file at 200% for comparison. You can see that JPEG can introduce some imperfections when you're using more compression. JPEG is not well suited to this type of line art.

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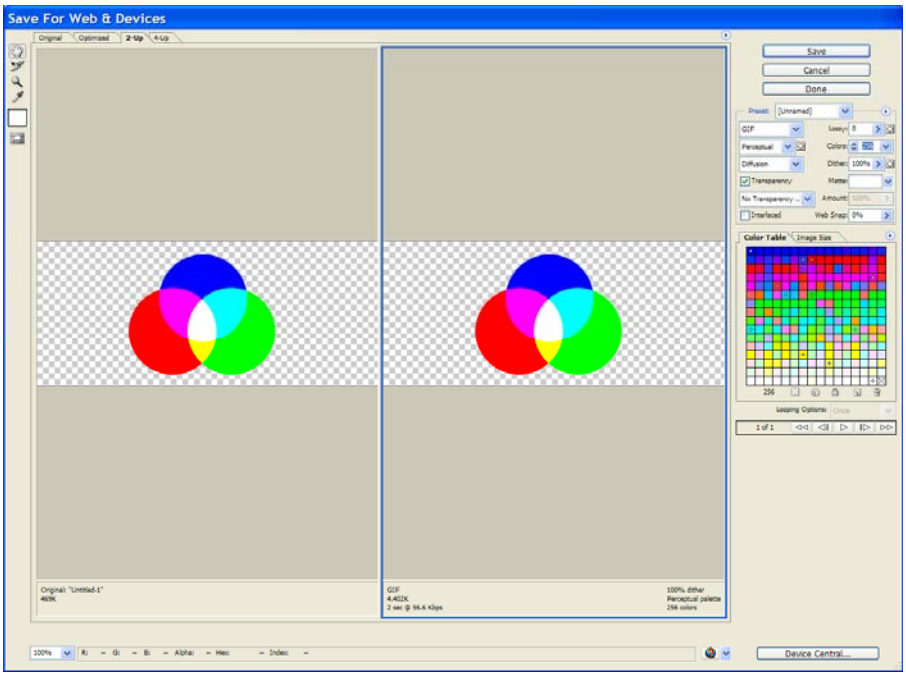
9. Navigate to the directory with your saved images. Set View to Details and note the file sizes for the five files you created. We'll see that for this kind of image, GIF is a better choice of file format. In the next exercise we will save this file as a GIF.
10. Minimize the My Computer or Windows Explorer window showing the file names and sizes.
11. When using JPEG, it's best not to save and reopen and resave multiple times. This is because the artifacts that are introduced are cumulative. Save the circles_low.jpg image again using low quality and naming the new file circles_lowlow.jpg. Now look at the new file at 200% magnification. It looks pretty awful. This visually shows why files should be manipulated in PSD format preferably.
12. Close all the circle files.

In some cases your original is a .jpg, for example from a digital camera. See if your camera can capture as a tif. If not, capture JPGs at the largest setting, usually defined in HxW pixel dimensions. Keep your original jpgs as your untouched original archive copy. Then save a copy as a PSD for manipulating and preserving layers.

Save as a .gif

Same as previous exercise, except choose the .gif extension and instead of adjusting quality, **reduce number of colors**.



1. Open **circles.psd**. Note that the file is in RGB mode with a transparent background in Photoshop represented by the checkerboard.
2. **Create a .gif** from the original
   File → Save for Web & Devises
3. View the 2-up tab
4. Verify transparency is checked.
5. Reduce the number of colors as much as possible to get a smaller file size. Note the number of colors needed to maintain exact quality as the original.
6. Save the image as circles.gif.
   Note: the .gif extension will automatically appear. Once saved, the .gif file will not automatically appear in PhotoShop until manually opened.
7. Reopen Windows Explorer and view the details of the file sizes. This line art image achieves a smaller file size as a .gif vs. a jpg.

JPGs
Good for photos, radiographs, color blends, and gradients. Applies "lossy compression".

GIFs
Good for transparent backgrounds and "flat color" line art with no shades of color.

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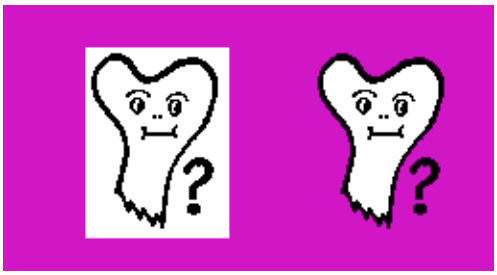
Transparency Options

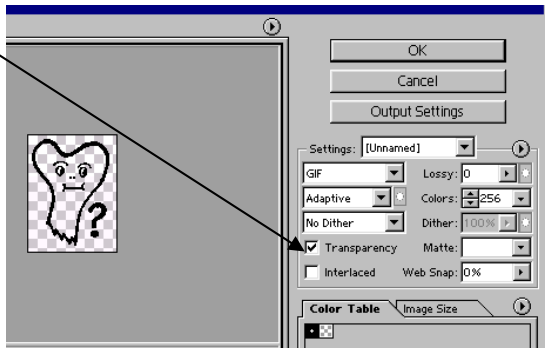
1. File → Open boneheadicon.gif
2. Image → Duplicate
3. Verify Image → Mode to see if RGB or Indexed. Since there are no original transparency features in this image, we need to duplicate the layer and add transparency. The RGB mode allows layers so we must switch to RGB. Image → Mode → RGB
4. Duplicate the background layer (drag to new layer icon on Layer Palette)
5. Hide the background layer
6. Use the Magic Eraser to erase the white around the edges to make the background transparent
7. File → Save for Web

   Click on the 2-up tab. Verify "transparency" is checked in the area to the right, OK.
8. Save with a different name, boneheadicon2.gif
9. To compare the two, open PowerPoint. Apply a colored background (Format > Background . . .)
10. Insert → Picture → From File, boneheadicon.gif see white box around bonehead.
11. Insert → Picture → From File, boneheadicon2.gif and see the transparency!

Only GIFs support transparency.



Drawing on the left with no transparency, has a white box around it. Drawing on the right with transparency, appears to "float" on the background. *Bonehead drawing by Cilla Rogers, PVM Class of 2000.*



Crop and Straighten Photos

The Crop and Straighten Photos command, introduced in version CS, helps you make separate image files from multiple images in one single scan. For best results, you should keep an eighth of an inch between the images in your scan, and the background (typically the scanner bed) should be a uniform color. Images with clearly delineated outlines work best. I use a piece of black foam core for the background behind the photos and get better results with this function.

1. File > Open dogs.psd, or the scanned file that contains the images you want to separate.
2. Select the layer that contains the images. Alternately, draw a selection border around one or more images to generate just those images into separate files.
3. Choose File > Automate > Crop and Straighten Photos. The scanned images are processed, and then each image opens in its own window ready for saving.

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4. If the Crop and Straighten Photos command incorrectly splits one of your images, make a selection border around the image and some background, and then hold down Alt (Windows) or Option (Mac OS) when you choose the command. The modifier key indicates that there is just one image to separate from the background.
5. Rotate new separate images if needed. (Image > Rotate Canvass.)
6. Save individual images with new names.

If the Crop and Straighten Photos command isn't processing difficult images, use the Crop tool and Image Rotate menu commands to crop out individual images. At least you only had to scan once.



Size Guidelines

Size consists of:

- HxW *
- Disk memory size in KB or MB
- Resolution in dpi or ppi

***For on-screen images, the most important is HxW**

Since the image is displayed on a monitor screen 1:1, measured in pixels, you don't need an image larger than the average screen size. Currently that size would be **1024x768**. Past sizes have included 800x600 and future sizes include 1280x1024 and wide screen dimensions.

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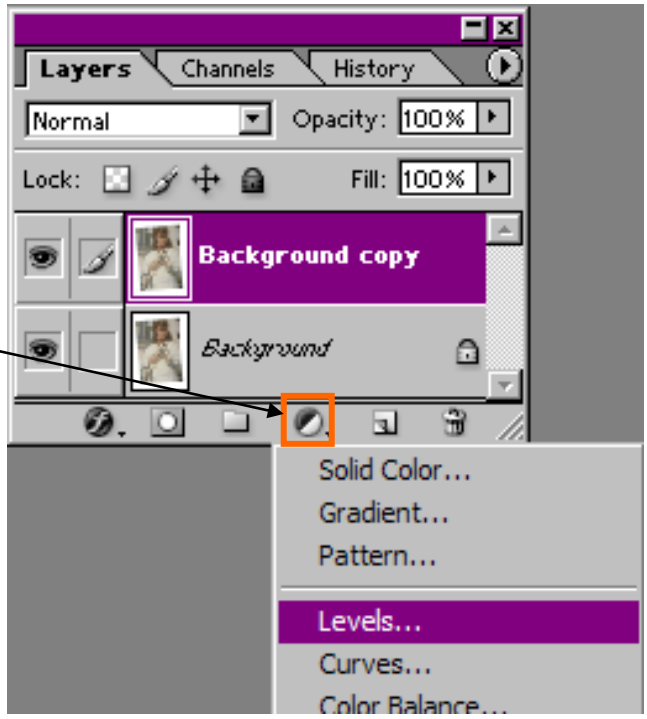
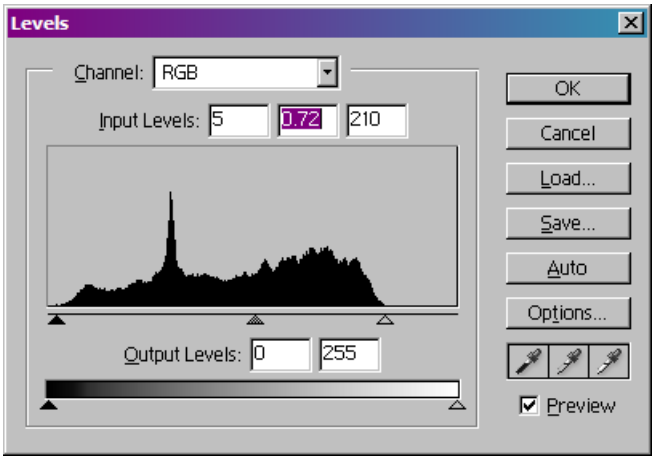
Levels Adjustment Layers

1. Open an image from the "levels" folder using Adobe Bridge.
2. Image → Duplicate
3. Make a copy of the background layer. Activate this new layer.
4. Add a Levels adjustment layer using the "create new fill or adjustment layer" icon at the bottom of the layer palette and choosing "levels".
5. The Levels dialog box will appear showing a histogram of the image. The histogram is a graphical representation of the pixels in the image, plotted from black (on the left) to white (on the right). There is no ideal histogram. Some may be biased to one side or the other.
6. For beginners, select Auto, click OK
7. Show and hide the adjustment layer to see the original vs. the changes with the new adjustment layer.
8. Save the image as a .psd file with a new name. Close the original without saving.





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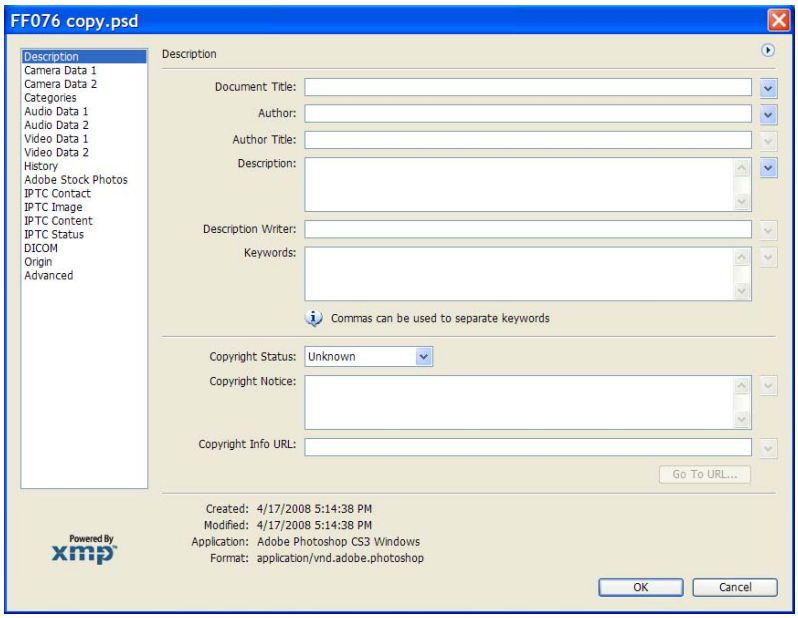
File Info

This allows entries for captions, keywords, categories, credits, and more. Some third-party image browsers can also search the captions and keyword entries. If you plan to use an image database, start adding keyword entries to your images for easy searching.



Choose **File → File Info**

This is also where the Web Photo Gallery pulls information for displaying "titles" for Large Images and Thumbnails. "Titles" can include filename, Description, Credits, Title and Copyright. So if you want to display "titles" in your Web Photo Gallery, you will need to add the appropriate information in File Info for each image file. Please note: this is not available for all Photo Gallery site styles. If it is unavailable, the options will be "grayed out" as shown in the screen shot.

Web Photo Gallery

You use the Web Photo Gallery command to automatically generate a Web photo gallery from a set of images. A Web photo gallery is a Web site that features a home page with thumbnail images and gallery pages with full-size images. Each page contains links that allow visitors to navigate the site. For example, when a visitor clicks a thumbnail image on the home page, a gallery page with the associated full-size image loads.

Photoshop provides a variety of styles for your gallery, which you can select using the Web Photo Gallery command. If you are an advanced user who has knowledge of HTML, you can also customize a style by editing a set of HTML template files or create a new style.

1. Choose File > Automate > Web Photo Gallery.
2. Under Files, click Source. Then select the folder containing the images that you want to appear in the gallery, and click OK. Select Include All Subdirectories to include images inside any subfolders of the selected folder. For this exercise choose c:\userdata\yourname\
3. Click Destination. Then select the destination folder that you want to contain the images and HTML pages for the gallery, and click OK. For this exercise choose "desktop"
4. For Styles, choose a style for the gallery. A preview of the home page for the chosen style appears in the dialog box.

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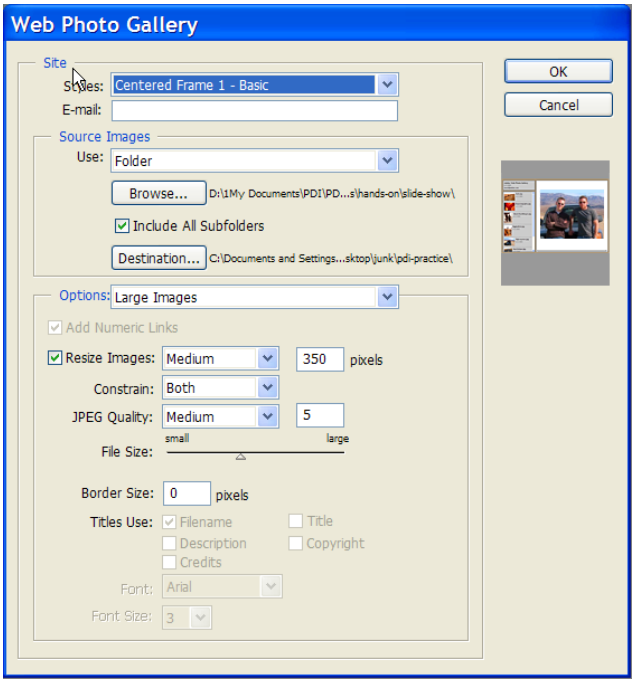
5. To set text options for the banner that appears on each page in the gallery, choose Banner from the Options pop-up menu. Then do the following:

   - **Site Name** The name of the gallery or it will default to “Adobe Web Photo Gallery”
   - **Photographer** The name of the person or organization receiving credit for the photos in the gallery. This is optional.
   - **Contact Info** The contact information for the gallery, such as a telephone number or a business address. This is optional.
   - **Date** The date appearing on each page of the gallery. By default, Photoshop uses the current date.
   - **Font and Font Size** (Available for some site styles) Options for the banner text.



6. Large Images, the main image that appear on each gallery page, choose Large Images from the Options pop-up menu. Then do the following:

   - **Add numeric links (Available for some site styles)** Places a numeric sequence (starting at 1, ending with the total number of pages in the gallery) running horizontally at the top of each gallery page. Each number is a link to the respective page.
   - **Resize Images** Resizes the source images for placement on the gallery pages. Choose a size from the pop-up menu or enter a size in pixels. For Constrain, choose which dimensions of the image you want to constrain during resizing. For JPEG Quality, choose an option from the pop-up menu, enter a value between 0 and 12, or drag the slider. The higher the value, the better the image quality and the larger the file.
     Note: Photoshop uses the default image interpolation method set in preferences. Choose Bicubic Sharper as the default for best results when reducing image size.
   - **Border Size** Width of the border around the image in pixels.
   - **Titles Use (Available for some site styles)** Specifies options for displaying captions under each image. Select Filename to display the filename, or select Description, Credits, Title, and Copyright to display description text drawn from the File Info dialog box.
   - **Font and Font Size (Available for some site styles)** specify the font and size of the caption.

7. **Thumbnails** Options for the gallery home page, including the size of the thumbnail images.

   - Size Specifies the thumbnail size. Choose from the pop□up menu or enter a value in pixels for the width of each thumbnail.
   - Columns and Rows Specify the number of columns and rows in which to display thumbnails on the home page. This option doesn’t apply to galleries that use the Horizontal Frame Style or Vertical Frame Style.

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- Border Size Specifies the width, in pixels, of the border around each thumbnail.
- Titles (Available for some site styles) Specifies options for displaying captions under each thumbnail. Select Filename to display the filename, or select Description, Credits, Title, and Copyright to display description text drawn from the File Info dialog box.
- Font and Font Size (Available for some site styles) specify the font and size of the caption.

8. **Custom Colors** Options for colors of elements in the gallery. To change the color of an element, click its color swatch and then select a new color from the Adobe Color Picker. You can change the background color of each page (Background option) and of the banner (Banner option).

   - **Security** Displays text over each image as a theft deterrent. This is optional.
   - **Content** Specifies the text to be displayed. Select Custom Text to enter customized text. Select Filename, Description, Credits, Title, or Copyright to display text drawn from the File Info dialog box.
   - **Font, Color, and Position** Specify the font, color, and alignment of the caption.
   - **Rotation options** Place the text on the image at an angle.

9. Click OK to create the gallery.

Photoshop places the following HTML and JPEG files in your destination folder:

- A home page for your gallery named index.htm. Open this file in any Web browser to preview your gallery.
- JPEG images inside an images subfolder.
- HTML pages inside a pages subfolder.
- JPEG thumbnail images inside a thumbnails subfolder.

References to Learn More on Your Own

Web Style Guide 2nd Edition – Graphics Section
http://www.webstyleguide.com/wsg3/11-graphics/5-web-graphics-formats.html

Gifs .vs Jpgs
http://www.tips-tricks.com/gif_jpeg.asp

Color Theory
http://www.worqx.com/color/index.htm

Various Image Sources

CVMBS Image Bank
http://www.cvmbs.colostate.edu/cats/Imagebank.htm
most images taken by Charlie Kerlee

CSU Photography Services
http://photos.colostate.edu/

Washington State Image Data Base
The images in this data base are for educational, non-commercial use only.
http://imagedb.vetmed.wsu.edu/
Selected images were used on the IVAPM home page at http://www.cvmbs.colostate.edu/ivapm/

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