Manipulating Images using *Photoshop*

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INFORMATION TECHNOLOGY SERVICES

This handout accompanies classroom instruction provided by IT Services Technology Training, Stanford University. While it is not intended as a stand-alone tutorial, it may be helpful in reviewing the topics covered in class.

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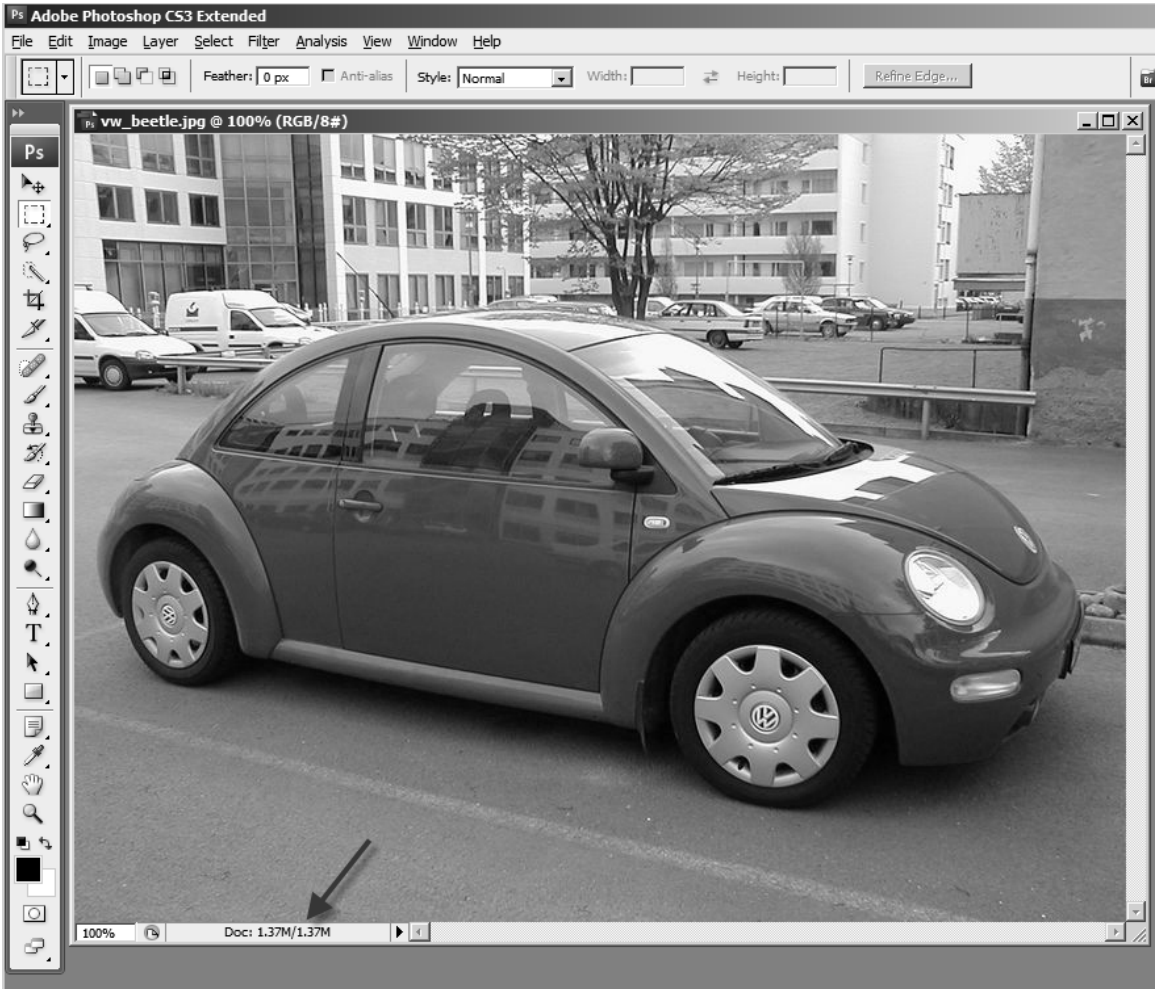
Manipulating Images using *Photoshop*

Photoshop is a software application used extensively by web designers and graphic artists to develop and manipulate images.

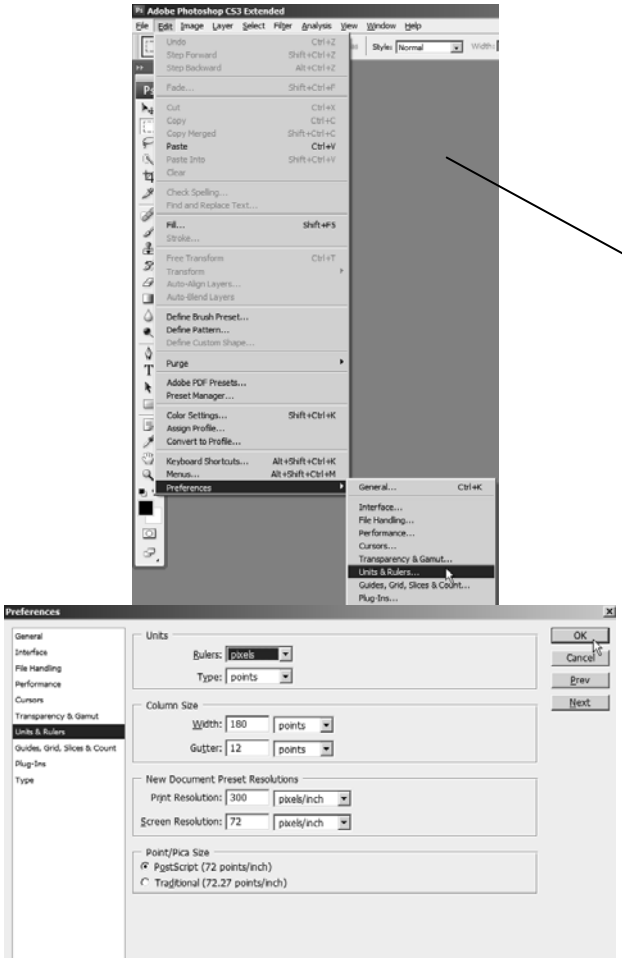
In this class, only the main features of *Photoshop* will be covered.

Obtaining Information about an Image

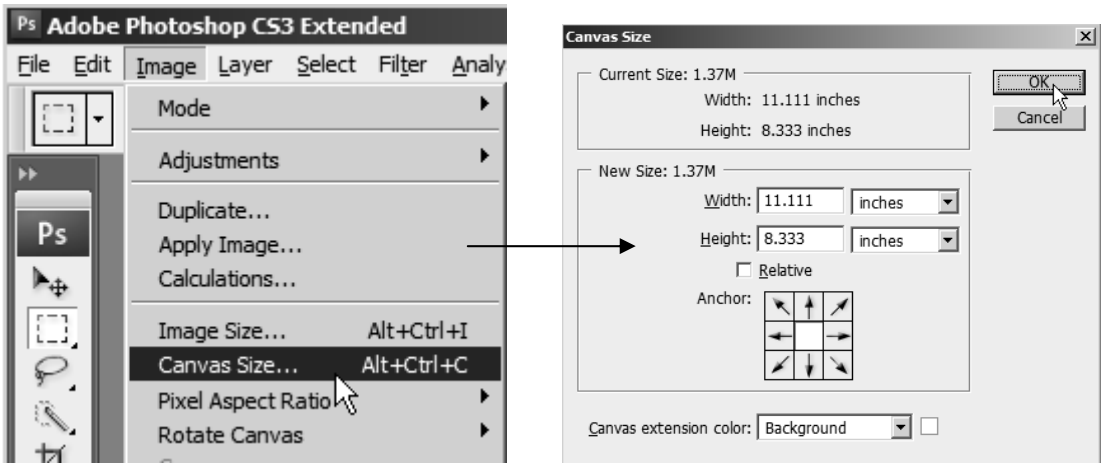
When an image is viewed in *Photoshop*, the program offers information about the amount of disk space the image uses.



By default, *Photoshop* uses inches to describe the size of an image. On the Web, however, pixels are used. To configure *Photoshop* to use pixels, select the **Units & Rulers** preference (on the **Edit** menu, point to **Preferences**, and click **Units & Rulers**) and change the **Rulers** field to pixels:

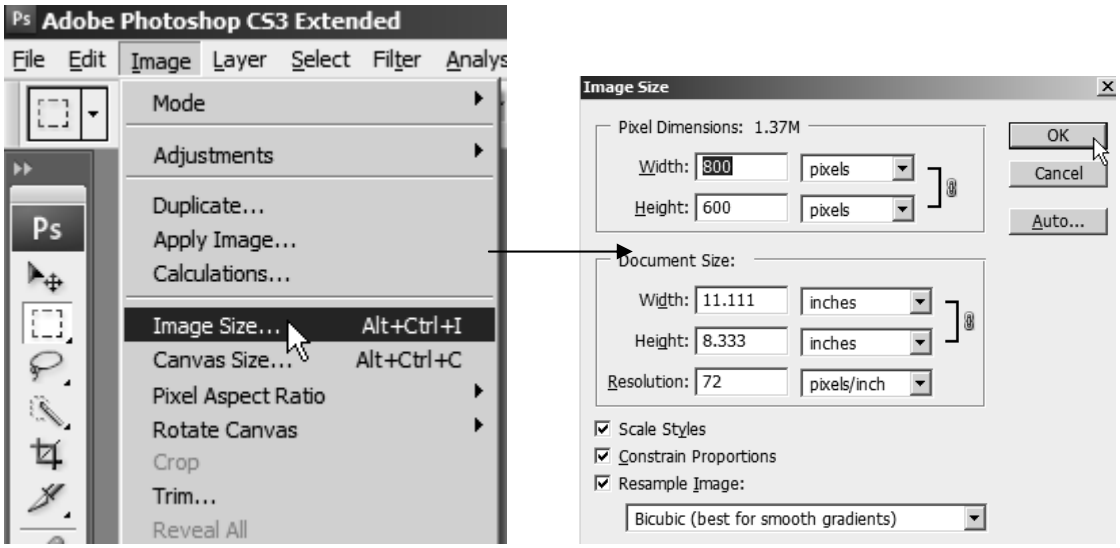


In image editing programs, the *canvas* is the work space around and including the image. *Photoshop*'s Canvas Size window provides information about the size of the graphic's canvas and allows the graphic designer to change it. To change or view the canvas size, on the **Image** menu, click **Canvas Size**:


Adobe Photoshop CS3 Extended
File Edit Image Layer Select Filter Analy
Mode
Adjustments
Duplicate...
Apply Image...
Calculations...
Image Size... Alt+Ctrl+I
Canvas Size... Alt+Ctrl+C
Pixel Aspect Ratio
Rotate Canvas
Canvas Size
Current Size: 1.37M
Width: 11.111 inches
Height: 8.333 inches
OK
Cancel
New Size: 1.37M
Width: 11.111 inches
Height: 8.333 inches
Relative
Anchor:
Canvas extension color: Background

The **Image Size** window provides information about the size of the image (and its canvas). It also allows the graphic designer to change the height and width of the image.

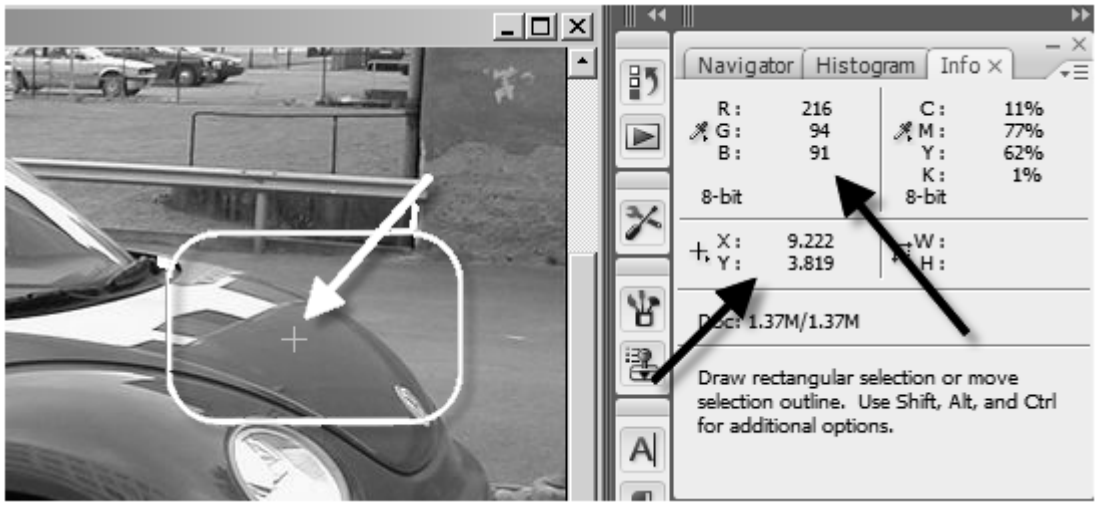
To view or change the image size, on the **Image** menu, click **Image Size**:



The **Info** window provides detailed color information about each pixel in the graphic.

To view the Info window, on the **Window** menu, click **Info**.

Placing the cursor at a specific spot on a graphic will display the color (in RGB code – Red Green Blue) for that spot. In the example below, at location 9.222x3.819, the color is 216,94,91.



Cropping an Image

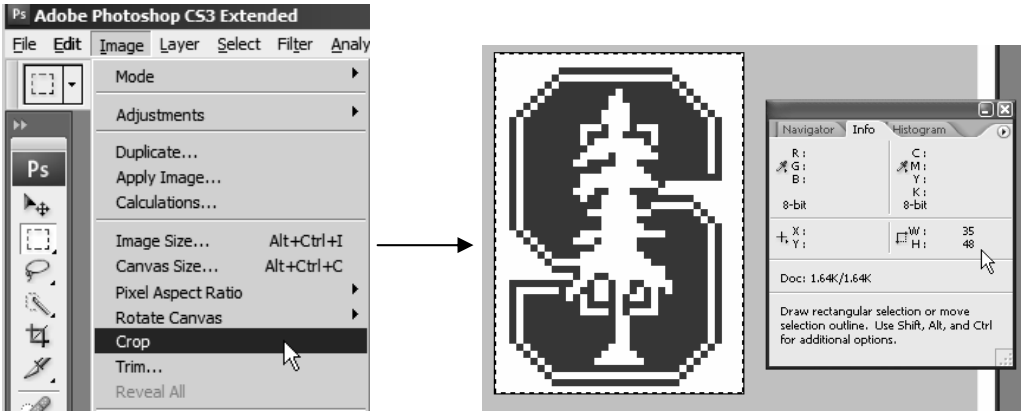
Cropping an image allows you to discard portions of an image.

To crop an image:

1. Select the **Rectangular Marquee Tool.**

2. Draw a box around the area to be cropped.

3. On the **Image** menu, click **Crop**. The new dimensions for the image will be displayed in the **Info** window.



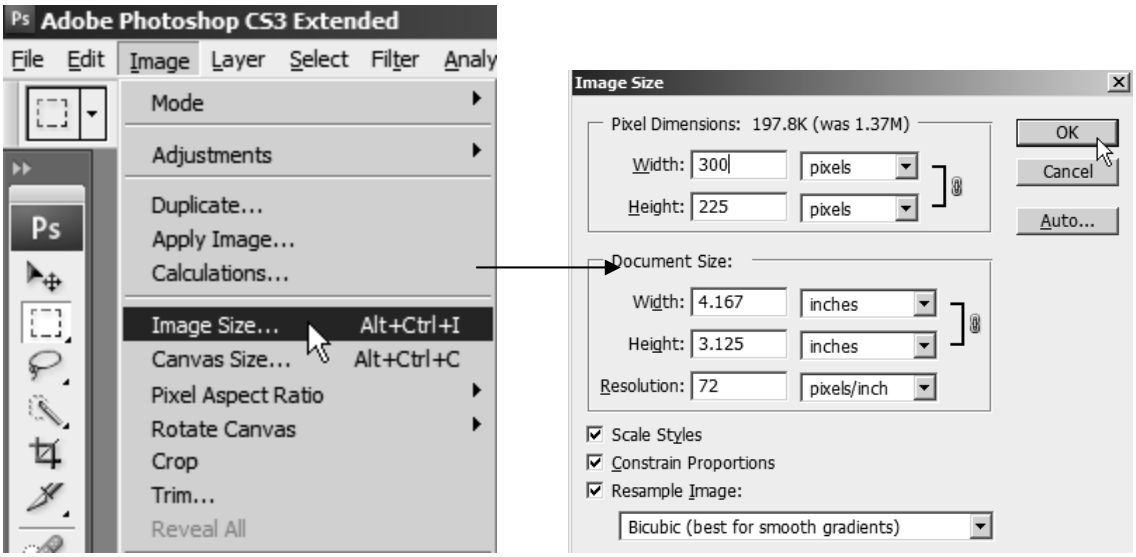
Changing an Image's Size

In *Photoshop CS3*, you can change the size of an image (e.g., if you want to create a thumbnail version of an image for the Web).

To change the size of an image:

1. On the **Image** menu, click **Image Size**.

2. Enter the new height/width desired, and click **OK** to finalize the change of size.



Keep this chart in mind when choosing an image size:

Monitor Resolution *	Maximum Size of Material (Width x Height)
Web TV (TV set)	544 x 738
640 x 480	600 x 300
800 x 600	760 x 420
1024 x 768	955 x 600

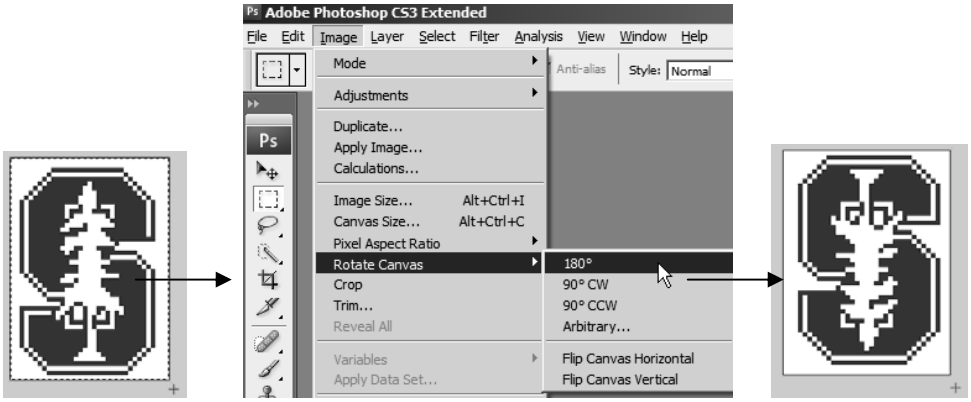
* Monitor Resolution can be set at:
- Windows: **Start > Settings > Control Panel > Display > Settings**
- Mac OS X: **System Preferences > Displays > Display**

Note: If you add a graphic to your web page before changing its size, you will need to change the height and width attributes in the source code.
In *Dreamweaver*, this is done by clicking the Reset Image to Original Size icon in Properties.

Rotating an Entire Image by Rotating Its Canvas

To rotate an entire image in *Photoshop*, rotate its canvas:

1. Open the image you wish to rotate in *Photoshop*.
2. On the **Image** menu, point to **Rotate Canvas**, and then click the transformation desired.



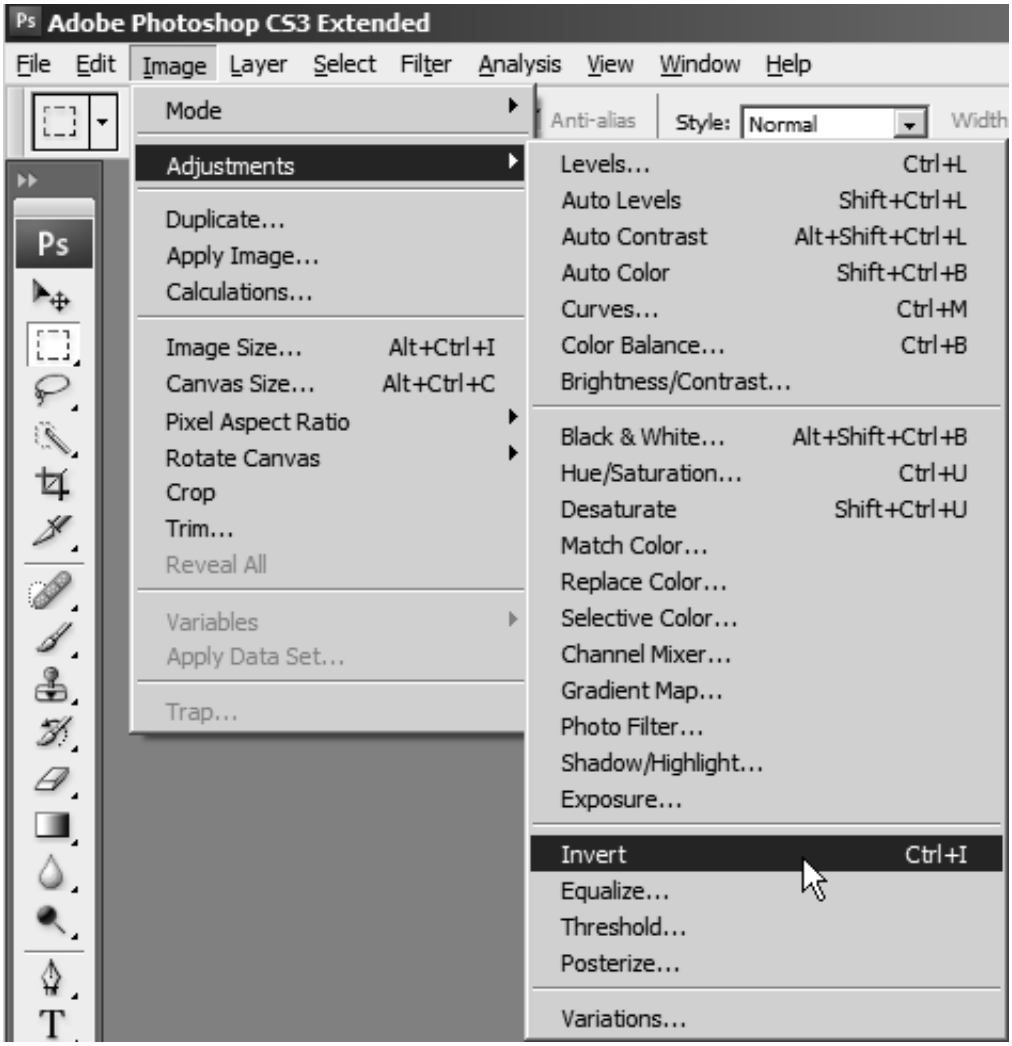
Transforming (Including Rotating) Just a Portion of an Image

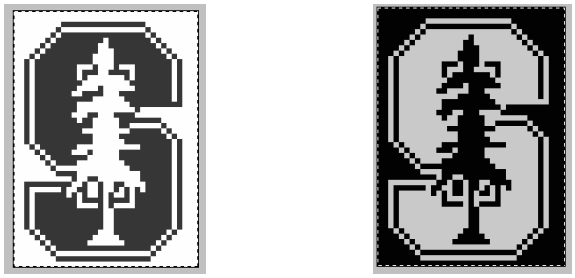
To transform just a portion of an image:

1. Open the image you wish to work on in *Photoshop*.
2. Select the region you wish to transform.
3. On the **Edit** menu, point to **Transform**, and then click the transformation desired.

Adjusting the Color of an Image

To adjust the color of an image, on the **Image** menu, point to **Adjustments**, and select the adjustment desired.





Before (left) and after (right) using the Invert adjustment; the image's colors are inverted – positive images become negative; negatives become positive images.

Filters

Filters let you change the look of your images. They can make images appear like impressionistic paintings or mosaic tiles; they can add unique lighting or create distortions. You can also use filters to clean up or retouch your photos. The filters provided by *Adobe* are listed in the **Filter** menu. Additional filters are available as plug-ins from third-party developers. Once installed, the names of these plug-in filters appear at the bottom of the **Filter** menu.

To use a filter, choose the appropriate command from the **Filter** menu. These guidelines can help you in choosing filters:

- Filters are applied to the active, visible layer or the area you have selected.
- For 8-bits images, most filters can be applied cumulatively through the **Filter Gallery** (on the **Filter** menu, click **Filter Gallery**). All filters can be applied individually.
- Filters cannot be applied to Bitmap-mode or indexed-color images.
- Some filters work only on RGB images.
- All filters can be applied to 8-bit images.
- The following filters can be applied to 16-bit images: Liquify, Average Blur, Bilateral Blur, Blur, Blur More, Box Blur, Gaussian Blur, Lens Blur, Motion Blur, Radial Blur, Sampled Blur, Lens Correction, Add Noise, Despeckle, Dust & Scratches, Median, Reduce Noise, Fibers, Lens Flare, Sharpen, Sharpen Edges, Sharpen More, Smart Sharpen, Unsharp Mask, Emboss, Find Edges, Solarize, De-Interlace, NTSC Colors, Custom, High Pass, Maximum, Minimum, and Offset.
- The following filters can be applied to 32-bit images: Average Blur, Bilateral Blur, Box Blur, Gaussian Blur, Motion Blur, Radial Blur, Sampled Blur, Add Noise, Fibers, Lens Flare, Smart Sharpen, Unsharp Mask, De-Interlace, NTSC Colors, High Pass, and Offset.
- Some filters are processed entirely in RAM. If your entire available RAM is used to process a filter effect, you may get an error message.

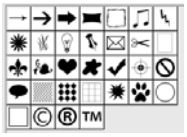
Before (left) and after (right) using the Lens Blur filter; the background is blurred but foreground stays sharp

The Drawing Tools

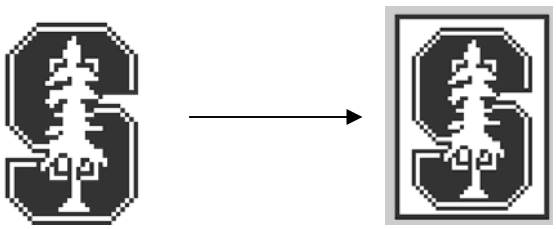
The drawing tools are used to draw shapes and objects on an image.

To use a drawing tool in *Photoshop*:

1. Select one of the drawing tools:
   - **Brush.** To paint brush strokes in a bitmap graphic.
   - **Pencil.** To draw 1-pixel-wide lines or to edit single pixels. This tool is accessed by clicking the mouse button on the **Brush Tool** and selecting the **Pencil Tool** (**Brush > Pencil Tool**).
   - **Pen.** To draw by placing points that define a path.
   - **Freeform Pen.** To paint paths in a vector graphic. This tool is accessed by clicking the mouse button on the **Pen** tool and selecting the **Freeform Pen Tool** (**Pen > Freeform Pen Tool**).
   - **Rectangle.** To draw rectangles.
   - **Rounded Rectangle.** To draw rectangles with rounded corners. This tool is accessed by clicking the mouse button on the Rectangle tool and selecting the **Rounded Rectangle Tool** (**Rectangle > Rounded Rectangle Tool**).
   - **Elipse.** To draw circles and other elipses (**Rectangle > Elipse Tool**).
   - **Polygon.** To draw multi-sided objects. To select the number of sides, select the **Polygon Tool**. Then, in the toolbar, in the **Sides** field, enter the number of sides desired (**Rectangle > Polygon Tool**).
   - **Line.** To draw straight lines (**Rectangle > Line Tool**).
   - **Custom Shape.** To draw one of these custom shapes (**Rectangle > Custom Shape**).



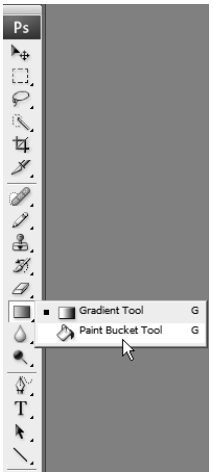
2. After selecting a tool, on the properties bar for the tool (located in the toolbar region), select the color, size, and style of the drawing tool as appropriate.
3. Draw by clicking and dragging the mouse. The example below shows a frame drawn using the Line Tool.



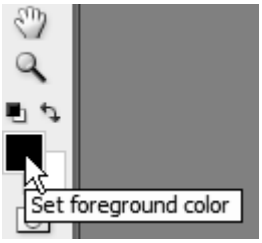
Using the Paint Bucket

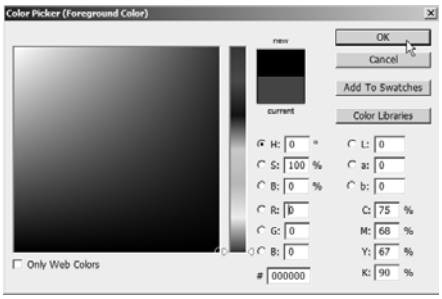
The Paint Bucket Tool is used to change the color of a region in *Photoshop*. To use the Paint Bucket Tool:

1. Select the **Paint Bucket Tool** (right-click the **Gradient Tool**, and then click **Paint Bucket Tool**).

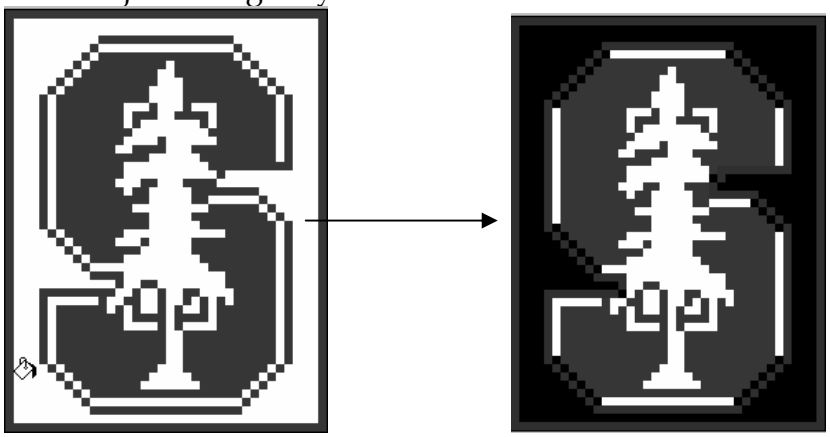


2. Select a foreground color by clicking **Set foreground color**; then select a color.





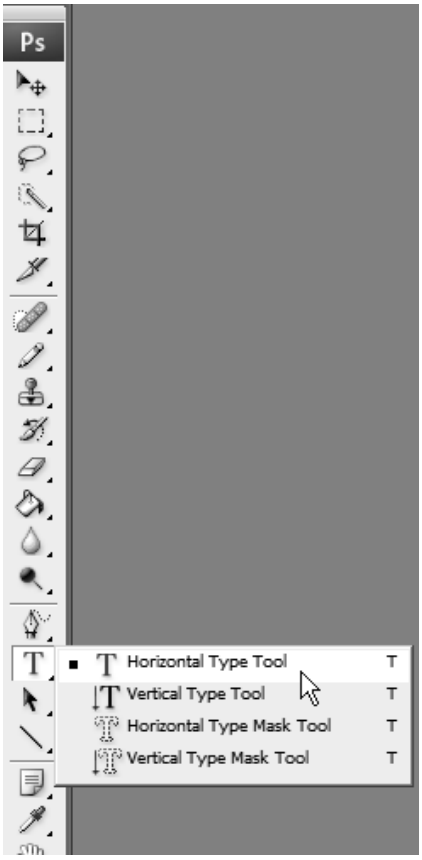
3. Click on the object or region you wish to color.



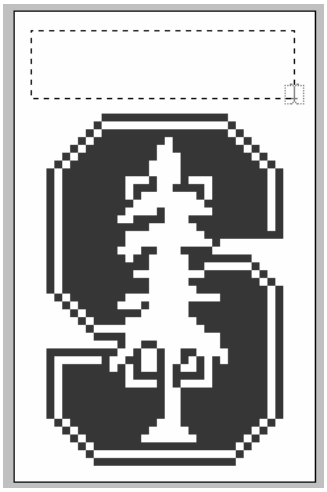
Adding Text to an Image

To add text to an image:

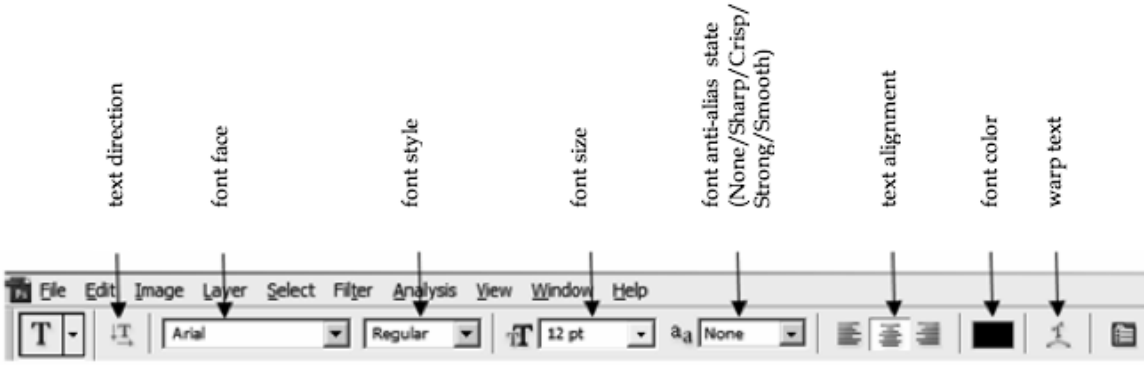
1. Click the **Horizontal Type Tool**.

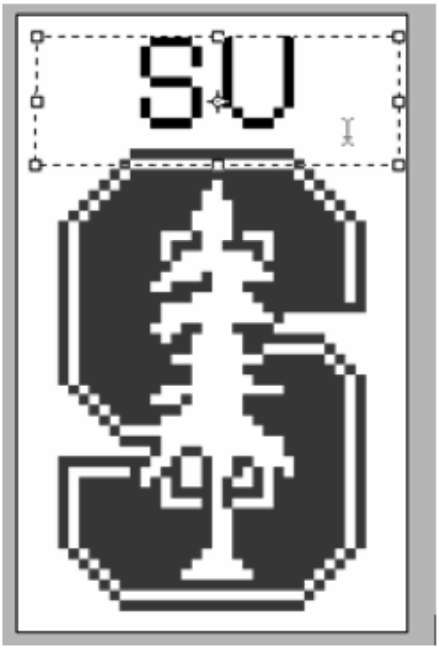


2. Click and drag to draw a rectangle around the area in which you wish the text to appear.



3. When the cursor appears in the text area, enter the text. On the properties bar for the Text Tool, you can change many of the text's properties:





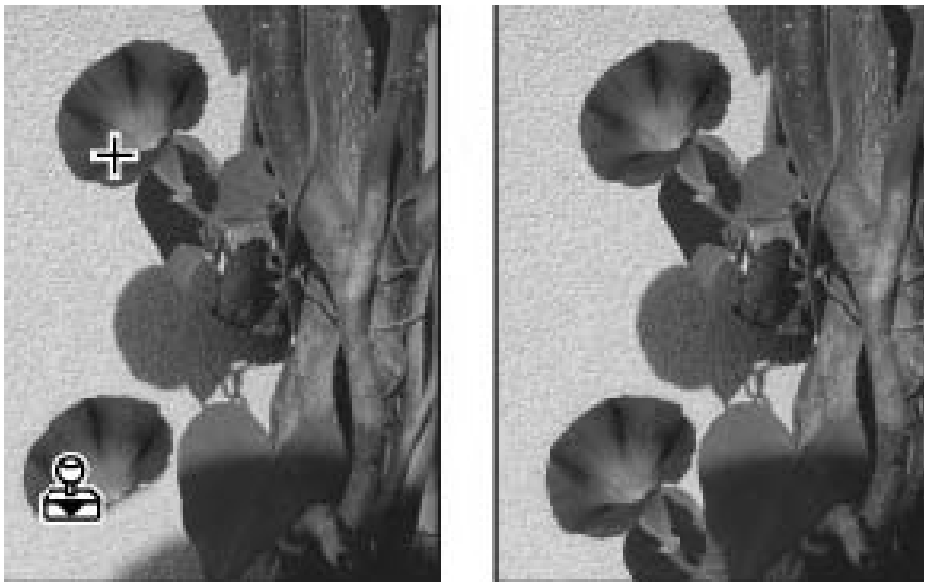
The Clone Stamp Tool

The Clone Stamp tool ( ) creates a duplicate (a clone) of part of the image you select. You can then place the cloned part of the image over another image or over a different part of the same image. You can also clone part of one layer that lies over another layer. Each stroke of the tool paints on more of the sample. The Clone Stamp tool is useful for duplicating an object or removing a defect in an image.

To use the Clone Stamp tool, set a sampling point on the area you want to copy to another area. Then, click and drag the mouse to apply that section onto the new area.

Because you can use any brush tip with the Clone Stamp tool, you have a lot of control over the size of the area you clone. You can also use opacity and flow settings in the options bar to finesse the way you apply the cloned area. You can sample from one image and apply the clone in another image, as long as both images are in the same color mode.

In the following example, we added an extra flower to the vine by sampling the flower and then cloning it below.

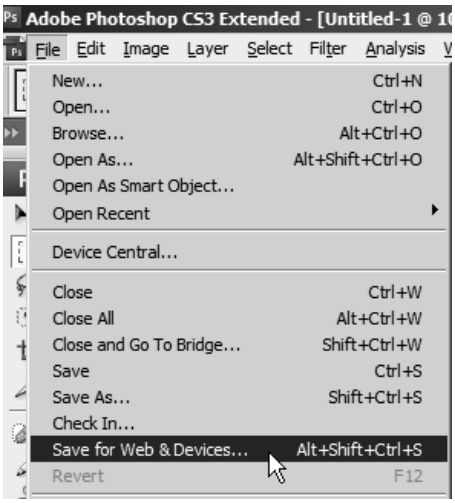


Altering an Image with the Clone Stamp Tool

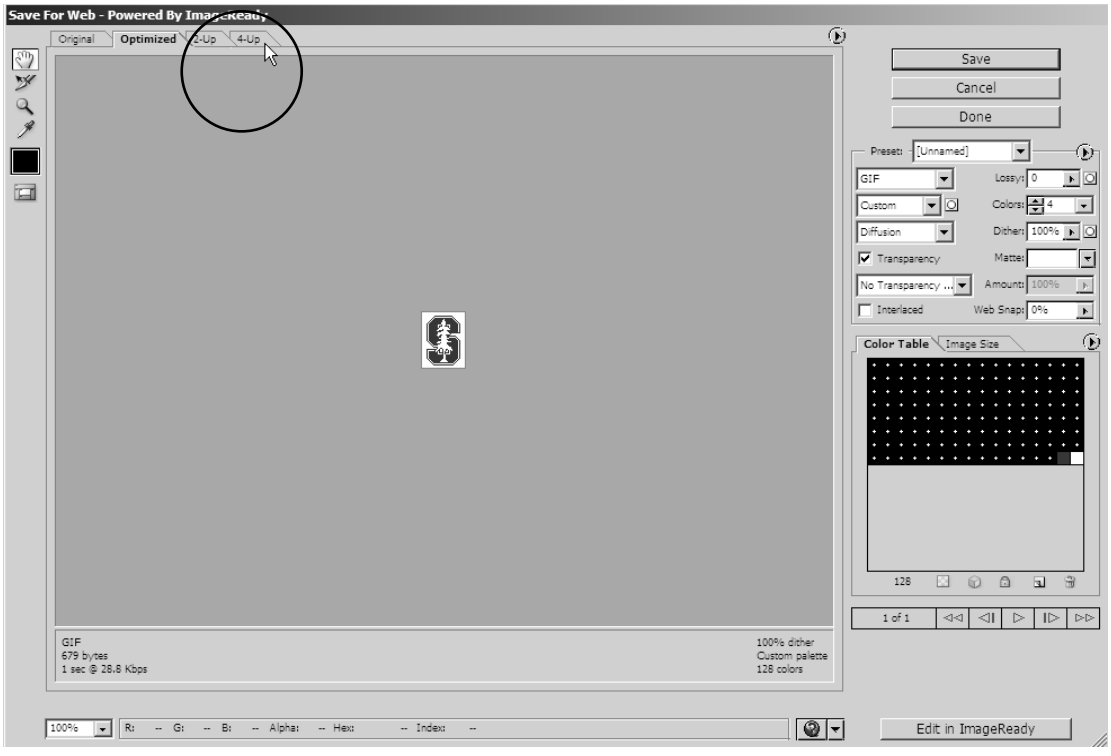
Saving Images in *Photoshop*

The best choice for saving images in *Photoshop* is **Save for Web & Devices**.

1. On the **File** menu, click **Save for Web & Devices**.

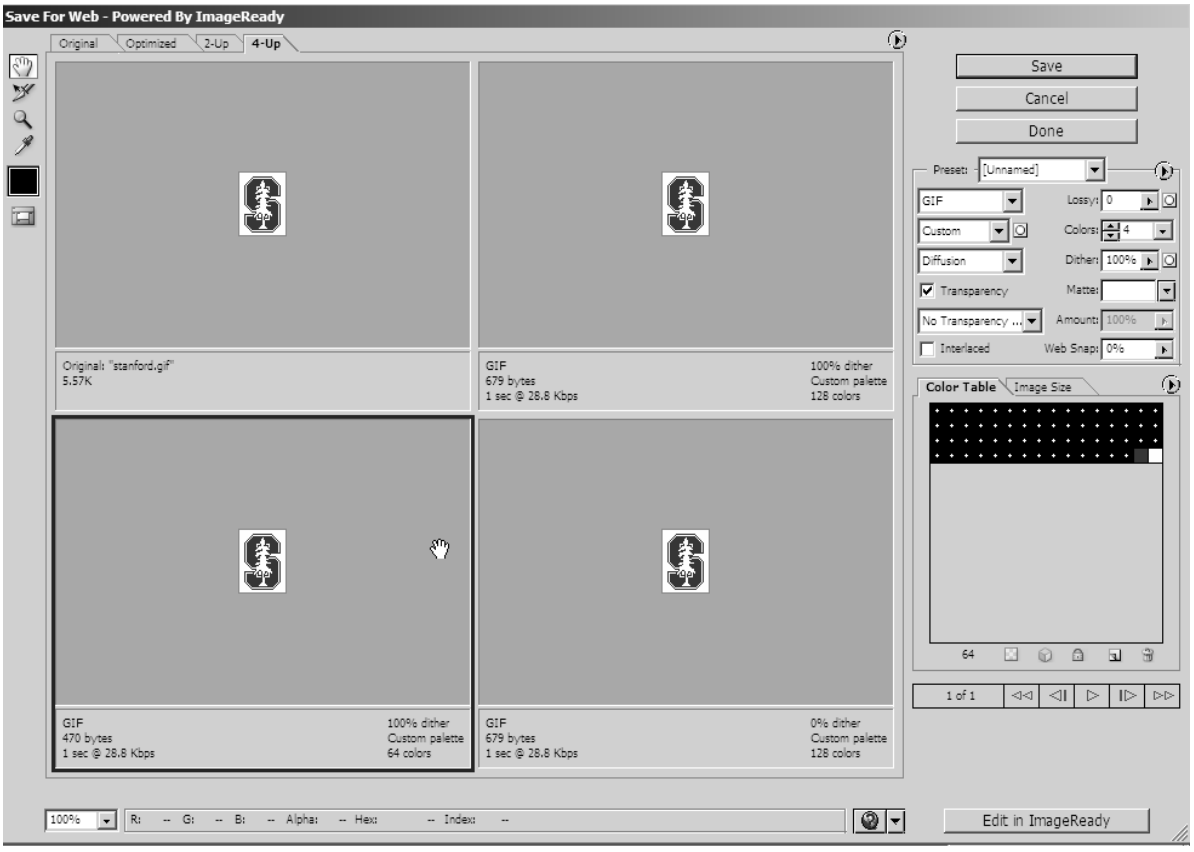


2. Select **4-up** to display four different versions of your picture.

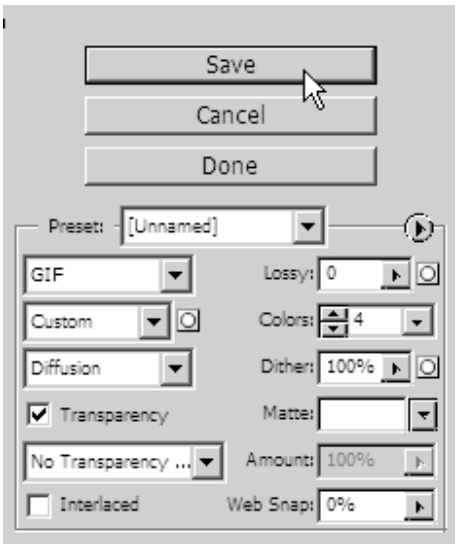


3. Pick the one that is the most optimized — the version that is smallest in size but still looks clean — for your desired use. In this case, since they all

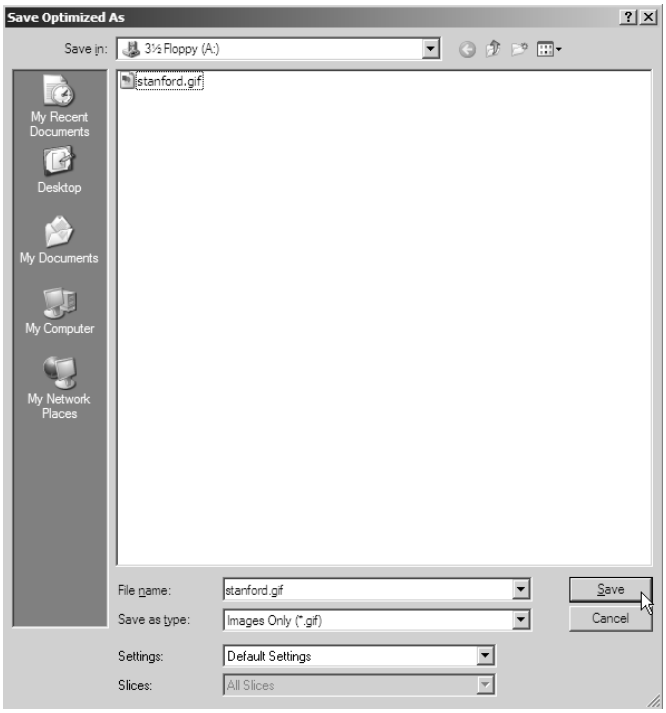
look approximately the same, we pick the one that has the smallest file size.



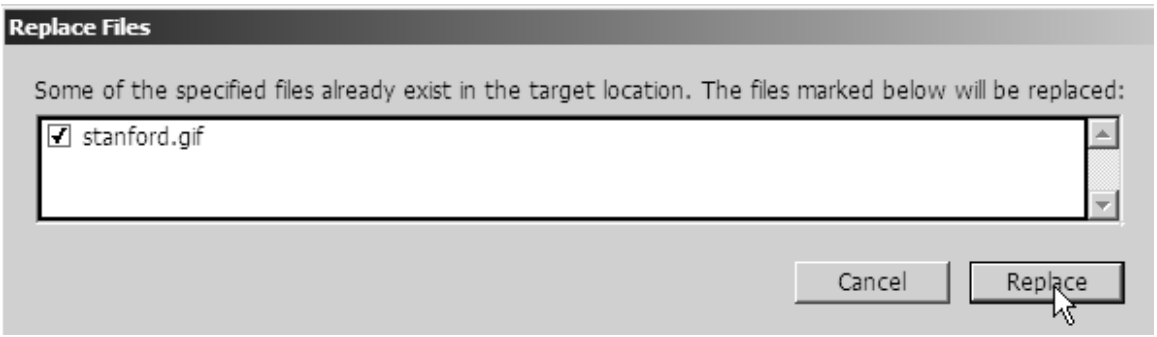
4. Then, click **Save**.



5. In the **Save Optimized As** field, choose the desired location, and then click **Save**.



6. If you are replacing an existing file, in the **Replace Files** field, click **Replace**.



7. On the **File** menu, click **Close**.

Resources

- Obtaining *Photoshop*
  Official Stanford Use:
  http://fingate.stanford.edu/staff/buypaying/smartmart.html

  Personal Use:
  http://www.stanford.edu/group/bookstore/

- Many image repositories exist. Some great places you can go to obtain images are:

  http://commons.wikimedia.org/

  http://www.stanford.edu/group/identity/

  https://techcommons.stanford.edu/topics/web-development/photo-archive

  http://www.flickr.com/photos/tags/stanford/clusters/california-paloalto-university/

  http://www.barrysclipart.com/

  http://directory.google.com/Top/Computers/Graphics/Clip_Art/

  http://directory.google.com/Top/Computers/Graphics/Clip_Art/Public_Domain/

- For instructor-led courses offered by Technology Training Services, including more advanced *Photoshop* classes, go to
  http://techtraining.stanford.edu/courses.html

- For personalized, one-on-one training offered by Technology Training Services on *Photoshop, Fireworks, GIMP,* and other topics, go to
  http://tba.stanford.edu/