

Digital Image Editing

INTRODUCTION TO PHOTOSHOP

Image editing encompasses the process of editing images whether they are digital photograph traditional photochemical photographs, or illustrations. **Adobe Photoshop is a popular image editing software. It is industry standard image editing software used worldwide by professional photographer and designers who want to refine their digital image.** Adobe Photoshop is a raster graphics editor developed by Adobe System Inc. It was originally created or developed in 1988 by Thomas and John Knoll. Since then, this software has become the industry standard not only in raster graphics editing, but in digital art as a whole.

Photoshop can be used to create customized graphics, edit photograph and images for print as well as for the web in multiple layers. Photoshop deals with bitmapped digitized images. You can also work with vector graphics, which are drawings, made of smooth lines that retain their crispness when scaled. You can design your artwork from scratch in Photoshop. You can import image into the program for many sources such as :

- Commercial CDs of digital images
- Photographs from a digital camera
- Captured video images
- Artwork created in drawing programs
- Scanned photograph, Graphics or other documents.

BASIC GRAPHIC TERMINOLOGY

Computer can store images in many different ways. These different ways are called file formats or image file type. There are many different types of image file such as : jpg, gif, png, svg. However, no matter what file type you use, every picture file on a computer can be classified as a Bitmap or a Vector image. The difference is in how the computer read and display the image.

1. **Bitmap Images** : A bitmap (also called “raster”) graphic is created from rows of different colored pixels or dots that together form an image. In their simplest form, bitmaps have only two colors, with each pixel being either black or white. With increasing complexity, an image can include more colors; photograph-quality

images may have millions. Examples of bitmap graphic formats include GIF, JPEG, PNG, TIFF, XBM, BMP, and PCX as well as bitmap (i.e., screen) fonts. The image displayed on a computer monitor is also a bitmap, as are the outputs of printers, scanners, and similar devices. They are created using paint programs like Adobe Photoshop.

2. **Vector Images :** Vector (also known as “object-oriented”) graphics are constructed using arithmetical formulas describing shapes, colors, and placement. Rather than a grid of pixels, a vector graphic consists of shapes, curves, lines, and text which together make a picture. While a bitmap image contains information about the color of each pixel, a vector graphic contains instructions about where to place each of the components. It is even possible to embed a bitmap graphic within a vector graphic, which is how vector-bitmap hybrid graphics work. It is not possible, however, to embed vector information within a bitmap. Examples of vector graphic formats are PICT, EPS, and WMF as well as PostScript and TrueType fonts. These are created with GIS and CAD applications as well as drawing programs like FreeHand.

As described below, bitmap and vector graphics both have their strengths and weaknesses :

- In general, a bitmap graphic is much larger than a similar vector graphic.
- Bitmap graphics are affected by resolution. If you enlarge a bitmap graphic, it will look jagged. When shrunk, its features become indistinct and fuzzy. This does not happen with vector graphics as their shapes are redrawn to compensate for changes in resolution.
- Altering vector graphics is easy because the shapes within them can be ungrouped and edited individually. However, vector graphics are difficult to modify or even display when they are not opened in programs that understand their rendering languages. For example, while many Mac OS drawing programs easily display and edit PICT files, few are able to do anything at all with WMF files. Most paint applications, however, are capable of opening many different kinds of bitmap graphic formats.
- You can easily convert one kind of bitmap file into another. You can also convert a vector graphic into a bitmap. However, it is very difficult to convert a bitmap graphic into a true vector graphic. It is even difficult to convert one

kind of vector graphic into another (e.g., PICT to WMF).

- Vector graphics are not appropriate for complex images (e.g., digitized photographs).

DIFFERENCE BETWEEN BITMAP AND VECTOR IMAGES

BITMAP IMAGES	VECTOR IMAGES
● Pixels of different colours ● Individual pixels ● Large, as the computer stores details of every pixel ● They lose quality ● Real ● .bmp, .dib, jpeg, gif, tiff, .png ● Use less processing power than vectors ● Individual elements cannot be grouped ● Images are less precise than vectors	● Objects, lines, equations and calculations ● Individual objects ● Small, as the computer stores details of objects, which do not require much memory ● They do not lose quality ● Not real (many of them look like cartoon images) ● .cgm, .svg, .odg, .eps, .xml ● Use more processing power than bitmaps ● Individual elements can be grouped ● Images are more precise than bitmaps

3. **Pixel** : a pixel is a single square on the computer screen. Depending upon your screen resolution, your screen probably has thousands of pixels. For example, the common screen resolution 1024x768 contain about 786432 pixels.

COMMON IMAGE FILE FORMATS

1. **JPEG (or JPG) - Joint Photographic Experts Group** : JPEGs might be the most common file type you run across on the web, and more than likely the kind of image that is in your company's MS Word version of its letterhead. JPEGs are known for their "lossy" compression, meaning that the quality of the image decreases as the file size decreases. You can use JPEGs for projects on the web, in Microsoft Office documents, or for projects that require printing at a high

resolution. Paying attention to the resolution and file size with JPEGs is essential in order to produce a nice looking project.

2. **PNG - Portable Network Graphics** : PNGs are amazing for interactive documents such as web pages, but are not suitable for print. While PNGs are “lossless,” meaning you can edit them and not lose quality, they are still low resolution. The reason PNGs are used in most web projects is that you can save your image with more colors on a transparent background. This makes for a much sharper, web-quality image.

3. **GIF - Graphics Interchange Format** : GIFs are most common in their animated form, which are all the rage on Tumblr pages and in banner ads. It seems like every other day we have a new Grumpy Cat or Honey Boo Boo animated GIF. In their more basic form, GIFs are formed from up to 256 colors in the RGB colorspace. Due to the limited number of colors, the file size is drastically reduced.

This is a common file type for web projects where an image needs to load very quickly, as opposed to one that needs to retain a higher level of quality.

4. **TIFF - Tagged Image File Format** : A TIFF is a large raster file that doesn't lose quality. This file type is known for using “lossless compression,” meaning the original image data is maintained regardless of how often you might copy, re-save, or compress the original file. Despite TIFF images' ability to recover their quality after manipulation, you should avoid using this file type on the web — it can take forever to load. TIFF files are also commonly used when saving photographs for print.

5. **PSD - Photoshop Document** : PSDs are files that are created and saved in Adobe Photoshop, the most popular graphics editing software ever. This type of file contains “layers” that make modifying the image much easier to handle. This is also the program that generates the raster file types mentioned above. The largest disadvantage to PSDs is that Photoshop works with raster images as opposed to vector images.

6. **PDF - Portable Document Format** : PDFs were invented by Adobe with the goal of capturing and reviewing rich information from any application, on any computer, with anyone, anywhere. I'd say they've been pretty successful so far. If a designer saves your vector logo in PDF format, you can view it without any design editing software (as long as you have downloaded the free Acrobat Reader

software), and they have the ability to use this file to make further manipulations. This is by far the best universal tool for sharing graphics.

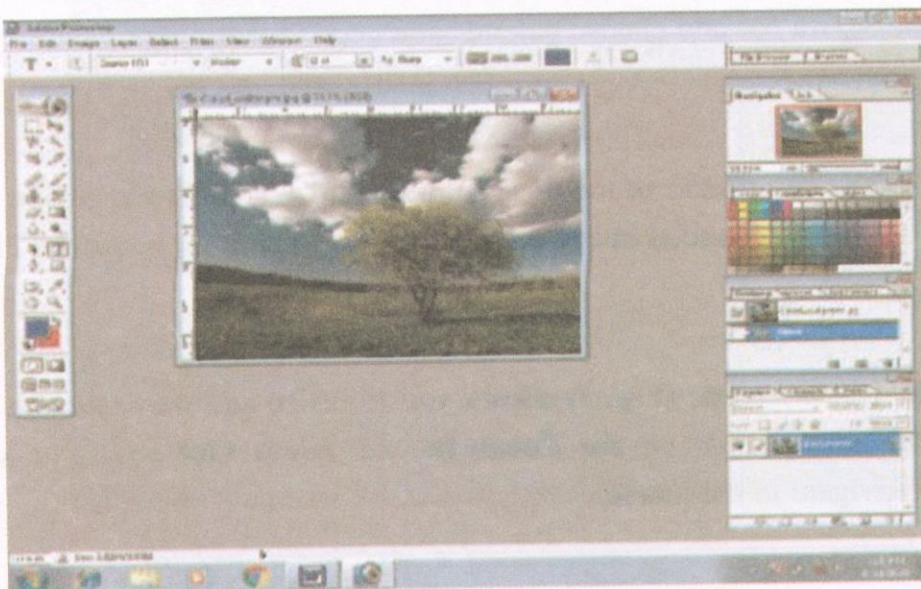
7. **EPS - Encapsulated Postscript** : EPS is a file in vector format that has been designed to produce high-resolution graphics for print. Almost any kind of design software can create an EPS. The EPS extension is more of a universal file type (much like the PDF) that can be used to open vector-based artwork in any design editor, not just the more common Adobe products.
8. **AI - Adobe Illustrator Document** : AI is, by far, the image format most preferred by designers and the most reliable type of file format for using images in all types of projects from web to print, etc. Adobe Illustrator is the industry standard for creating artwork from scratch and therefore more than likely the program in which your logo was originally rendered.

STARTING PHOTOSHOP

The steps to start Photoshop are as follows :

1. Click on all programs -> adobe Photoshop
2. Adobe Photoshop will load up, and display your workspace. The workspace consists of several components that can be used to create artwork.

You create and manipulate your documents and files using various elements such as panels, bars, and windows. Any arrangement of these elements is called workspace. The main parts of Photoshop workspace are as follows.



Menu Bar

If you look at the top of the screen you will see the Menu bar which contains all the main functions of Photoshop, such as File, Edit, Image, Layer, Select, Filter, View, Window, and Help.

Tool Bar

Most of the major tools are located in the **Tool** bar for easy access.

The Image

The image will appear in its own window once you open a file.

Image Name

The name of any image that you open will be at the top of the image window as shown above.

Palettes

Palettes contain functions that help you monitor and modify images. By default, palettes are stacked together in groups. These are the palettes that are usually visible:

Navigator, Color, Histogram, Layer. If none of the palettes are visible, go to **Window** in the **Menu** bar and choose palettes you need to work with.

PALETTES

Below is the description of the most commonly used palettes in Adobe Photoshop. Palettes used for more advanced image editing will be covered in the Adobe Photoshop.

NAVIGATOR

The **Navigator** palette (Fig. 1) allows you to resize and move around within the image. Drag the slider, click on the **Zoom In** and **Zoom Out** icons, or specify the percentage to navigate in the image.

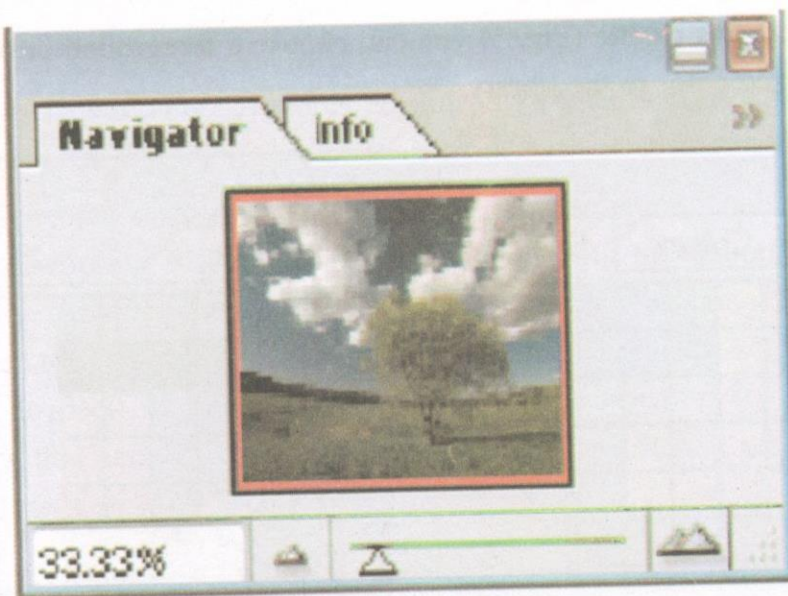


Fig. 1. Navigator palette

COLOR, SWATCHES, STYLE

The **Color** palette (Fig. 2) displays the current foreground and background colors and RGB values for these colors. You can use the sliders to change the foreground and background colors in different color modes. You can also choose a color from the spectrum of colors displayed in the color ramp at the bottom of the palette.

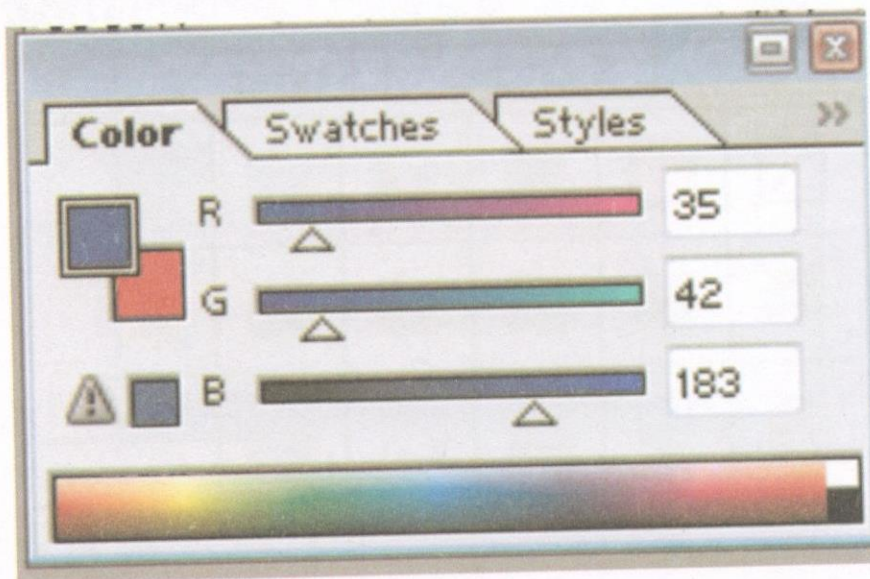


Fig. 2. Color palette

In the **Swatches** palette (Fig. 3) you can choose a foreground or background color or add a customized color to the library.

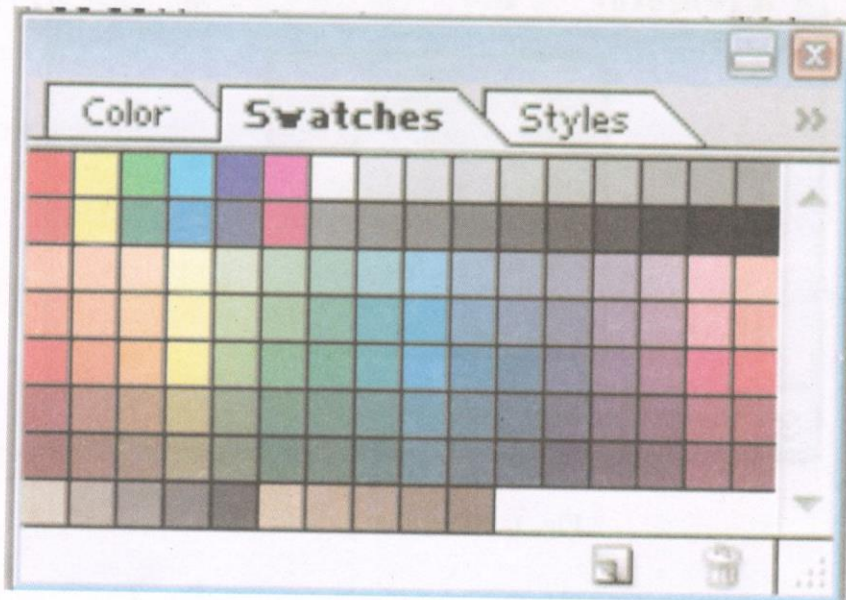


Fig. 3. Swatches palette

The **Styles** palette (Fig. 4) allows you to view, select, and apply preset layer styles. By default, a preset style replaces the current layer style. You can use the styles in the palette or add your own using the **Create New Style** icon.

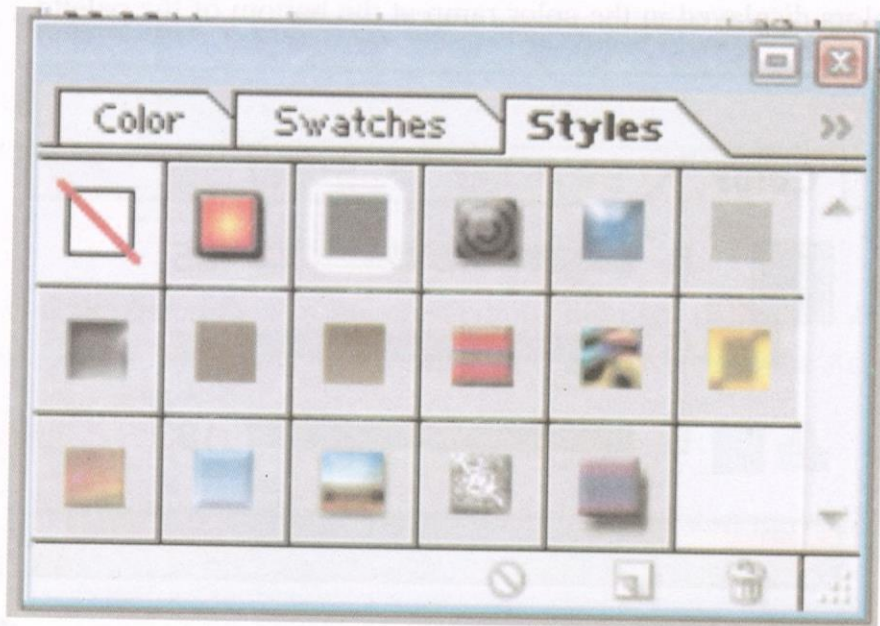


Figure 4. Styles palette

HISTORY

The **History** palette (Fig. 5) stores and displays each action performed allowing you

jump to any recent stage of the image alteration. The alterations should be created during the current working session; after saving or closing the document the **History** palette clears all the contents. Each time you apply a change to an image, the new state of that image is added to the palette. The **History** palette can store up to 20 stages. However, you can always go back to the first stage, for example opening the document. It is important to know that once you click on any of the previous stages, all the changes that were made after it will be lost.

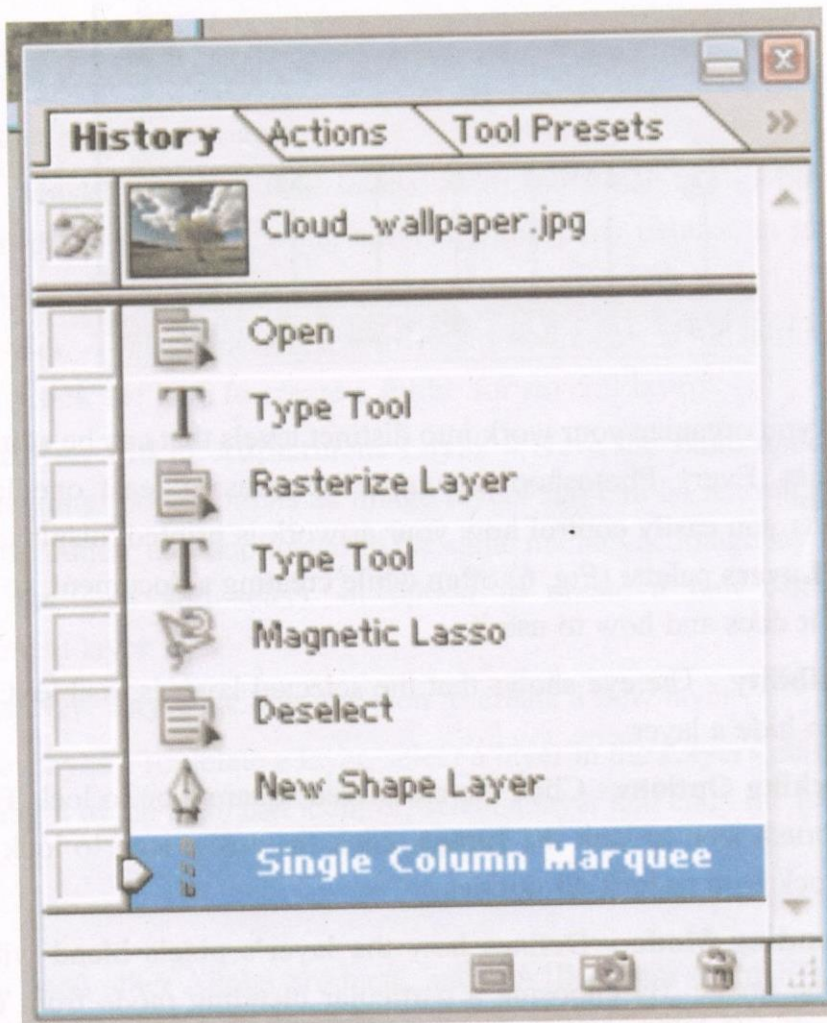
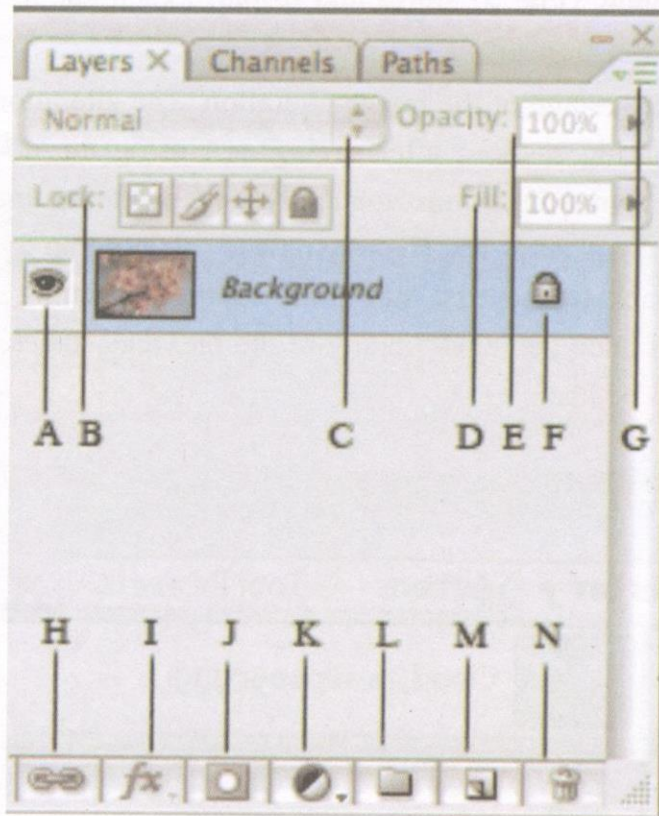


Fig. 5

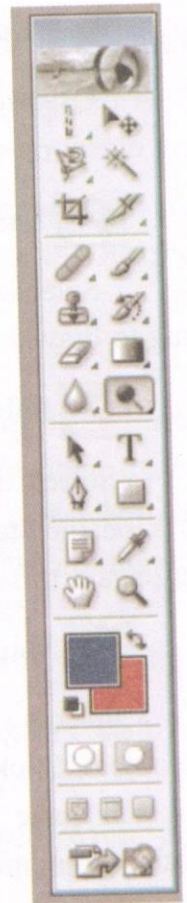
LAYERS



Layers let you organize your work into distinct levels that can be edited and viewed as individual units. Every Photoshop document contains at least one layer. Creating multiple layers lets you easily control how your artwork is printed, displayed, and edited. You will use the **Layers** palette (Fig. 6) often while creating a document, so it is crucial to understand what it does and how to use it.

- A) **Layer Visibility** - The eye shows that the selected layer is visible. Click on or off to see or to hide a layer.
- B) **Layer Locking Options** - Click the checkered square icon to lock **Transparency**; click the brush icon to lock the **Image**; click the arrow icon to lock the **Position**; click the lock icon to lock all options.
- C) **Layer Blending Mode** - Defines how the layer's pixels blend with underlying pixels in the image. By choosing a particular blending mode from the dropdown menu you can create a variety of special effects.

- D) **Fill** - By typing in a value or dragging the slider you can specify the transparency of the color of the image or object.
- E) **Opacity** - By typing in a value or dragging a slider you can specify the transparency of the entire layer.
- F) **Layer Lock** - The icon shows when the layer is locked and disappears when it is unlocked. Double-click the icon to unlock the layer.
- G) **Layer Options Menu** - Click the black triangle to see the following options: **New Layer**, **Duplicate Layer**, **Delete Layer**, **Layer Properties**, etc. Some of the options are presented as icons at the bottom of the **Layers** palette.
- H) **Link Layers** - Can be used to link layers together.
- I) **Layer Styles** - If a layer has a style, an “F” icon shows at the bottom of the **Layers** palette.
Click the little black triangle to see style options.
- J) **Layer Mask** - A grayscale image, with parts painted in black hidden, parts painted in white showing, and parts painted in gray shades showing in various levels of transparency.
- K) **Layer Set** - This option helps to organize images with multiple layers. Click the icon to create a folder for several layers.
- L) **Create New Fill or Adjustment Layer** - Have the same opacity and blending mode options as image layers and can be rearranged, deleted, hidden, and duplicated in the same manner as image layers. Click the icon and select an option to create a new fill or adjustment layer.
- M) **Create New Layer** - Click this icon to create a new layer.
- N) **Delete Layer** - To delete a layer, select a layer in the **Layers** palette and drag it to the trash can icon; or, select a layer and click the icon.



TOOLBOX

If you used other Adobe products, such as Illustrator or InDesign, you should be familiar with the toolbox in Photoshop as it shares some of the tools from these applications. If you are a novice user of Adobe products, you should keep in mind that you might not need to use all of the tools. Only the basic tools will be Some tools in the

toolbar have additional “hidden” tools. These tools have small black triangles in the right-hand corner. To view the “hidden” tools, click and hold down on any tool that has a black triangle in the corner discussed in depth.

SELECTION TOOLS



Marquee

Selects an object by drawing a rectangle or an ellipse around it. Click the tool button, choose a rectangular or an elliptical marquee. Drag the marquee over the area of the image you wish to select.



Move

Used to select and move objects on the page. Click the tool button, then click on any object on the page you wish to move.



Lasso

Selects an object by drawing a freehand border around it. Click the tool button, drag to draw a freehand border around the are of the image you wish to select.



Polygonal Lasso

Selects an object by drawing a straight-edge border around it. Click the tool button, click on the starting point on the image, drag to draw a straight-edge border, click and drag again to select the are of the image you wish to select. Double-click to finish.



Magnetic Lasso

Selects an object by drawing a border that snaps to the edges of the defined area of the object. Click on the starting point on the image, drag around the are of the image. The tool will make fastening points at the edges. To finish selecting, drag the border to the starting point and click precisely in the point.



Magic Wand

Selects all objects in a document with the same or similar fill color, stroke weight, stroke color, opacity, or blending mode. By specifying the color range, or tolerance, you can control what the **Magic Wand** tool selects. Click the tool button, then click on the area of the image you wish to select.

Crop Tool

Selects and cuts parts of an image. Click the tool button, then click and drag the tool over the part of the image that you want to keep. Resize the selected area dragging the squares at the sides and corners. Click the **RETURN** key when your crop box is sized correctly.

Slice Tool

Used to cut images into slices, which can be exported to a web page.

ALTERATION TOOLS

Healing Brush

Corrects small blemishes in scanned photos. Select the tool, hold down the **ALT** key and left-click on the base color you need to heal. Then left-click over the blemish.

Brush Tool

Draws lines of different thicknesses and colors. Select the tool. Then click on the selected area, drag to draw lines. Use the **Options** bar to change the **Brush**, Mode, Opacity, and Flow.

Clone Stamp

Takes a sample of an image and applies over another image, or a part of the same image. Select the tool. Hold down the **ALT** key and left-click on a certain point of the document where you want to start your copy point. Then, put your mouse over whatever part of the new document you want the picture to go to. Hold down the left mouse button and drag the mouse across the page to copy the picture.

Art History Brush

Paints over an image using the source data from a specified history state or snapshot.

Select the tool, specify the **Brush**, **Blending Mode**, **Opacity**, **Style**, **Area**, and **Tolerance**.

Erase Tool

Removes part of an existing path or stroke. You can use the Erase tool on paths, but not on text. Select the tool, click on the part of the image you wish to erase. Drag to erase pixels.

Paint Bucket Tool

Fills and entire area with a specific color of your choice. Select the tool. Choose a foreground color in the **Color Box**. Select an area you wish to apply the color to. Click the tool button, then click on the selected area.

Gradient Tool

Applies a gradient fill to a selected part of the image or to an entire layer. Select an area you wish to apply gradient to, click the tool button, choose a fill in the **Options** bar, click on the starting point, hold the mouse down and drag to the end point.

Blur Tool

Blurs the sharp edges of an image. Select an area where you wish to apply the tool. Click the tool button, choose the **Brush, Mode, and Strength**. Drag the brush along the edges.

Dodge Tool

Lightens areas in an image. Select the area where you wish to apply the tool. Choose the **Brush, Range, and Exposure**. Click on the spots you wish to highlight.

DRAWING AND SELECTION TOOLS

Direct Selection Tool

Selects paths and path segments. Select the tool, click anywhere on the path.

Type Tool

Types text on a page. Every time you click the **Type Tool** on a new portion of the page a new layer will be created. Select the tool, click on the page and begin to type. You can specify the font and size in the **Options** bar. You can also resize and transform the text box by dragging the squares at the sides and corners. Use the **Move Tool** to move the text on the page.

Pen Tool

Draws smooth-edged paths. Select the tool, click on the page, drag to draw a path. Click and drag the anchor points to modify the path.

Rectangle Tool

Draws a rectangle shape. Other shapes that are hidden in this tool are: **Rounded Rectangle Tool**, **Ellipse Tool**, **Polygon Tool**, **Line Tool**, and **Custom Shape Tool**. Select the tool, click and drag on the page to draw a shape. The shape will be automatically filled with the current foreground color.

ASSISTING TOOLS

Notes Tool

Serves as a comment feature. Usually used for electronic text edits. Select the tool, click on the spot on the page where you wish to make a comment. Type in the text box.

Eyedropper Tool

Takes color samples from colors on the page and displays them in the **Color Boxes**. Select the tool, click on the color in the image you wish to sample. The **Color Box** will display this color.

Hand Tool

Allows you to move around within the image. Select the tool, click on the spot on the page, hold the mouse button down, drag to move in the area.

Magnifying Glass Tool

Magnifies or reduces the display of any area in your image window. Select the tool, choose **Zoom In** or **Zoom Out** in the **Options** bar, click on the area of the image you wish to magnify or reduce.

COLOR BOXES AND MODES

Color Boxes

The foreground color appears in the upper color selection box and represents a color that is currently active. The appears in the lower box and represents an inactive color. To change background color the foreground color, click the upper color selection box in the toolbox.

To change the background color, click the lower color selection box in the toolbox.

To reverse the foreground and background colors, click the **Switch Colors** icon (the arrow) in the toolbox. To restore the default foreground and background colors, click the **Default Colors** icon (the little black and white boxes) in the toolbox.



Modes

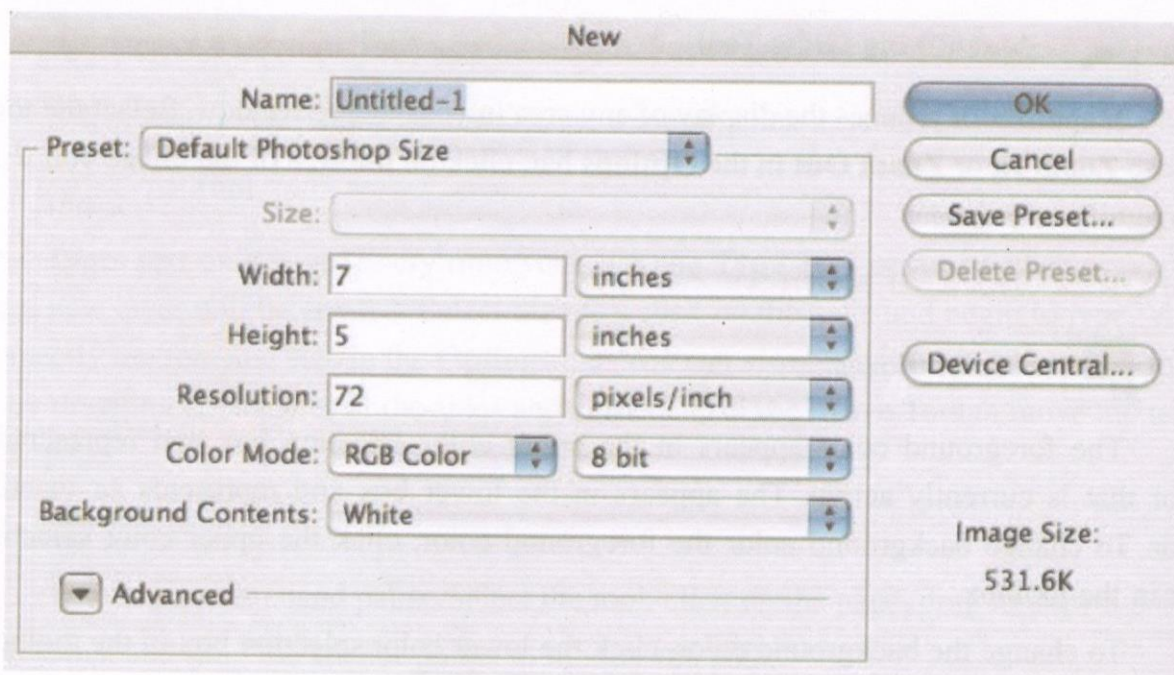
Edit in Standard Mode and **Edit in Quick Mask Mode** are used for modifying images in the unmasked or masked area. **Standard Screen**, **Full Screen with Menu Bar**, **Full**

Screen are used for viewing larger or smaller are of the image. **Edit in ImageReady** is used to transfer the file for editing in **Adobe ImageReady**.

CREATING A NEW DOCUMENT

The steps to create a new docment in photoshop are as follows :

1. Click on **All Programs > Adobe Photoshop**
2. Adobe Photoshop will load up, initialize, and display your work space.
- 3.



Click on File > New (Ctrl+N) option. Dialog box appears as follows.

document setup dialog box

The Various options in document setup are as follows.

Page Size and Orientation

Change the page size by typing in new values for width and height. Page size represents the final size you want after bleeds or trimming other marks outside the page. In the Preset dropdown menu you can find such common sizes as letter, legal, tabloid, etc. Typing in exact values for Height and Width gives you more control over the size and orientation of your page.

Resolution

Resolution is a number of pixels on a printed area of an image. The higher the resolution, the more pixels there are on the page, the better is the quality of the image. However, high resolution increases the size of the file. The standard recommended resolution for printed images is 150 - 300, for Web images - 72.

Color Mode

Choose a color mode that will best fit your project. For example, when making a graphic for a web site, choose RGB. When making an image for print, choose CMYK.

Background Contents

Choose the background: white, color, or transparent. When you have entered all of your document settings, click OK.

To save the file for the first time, select File > Save As from the main menu

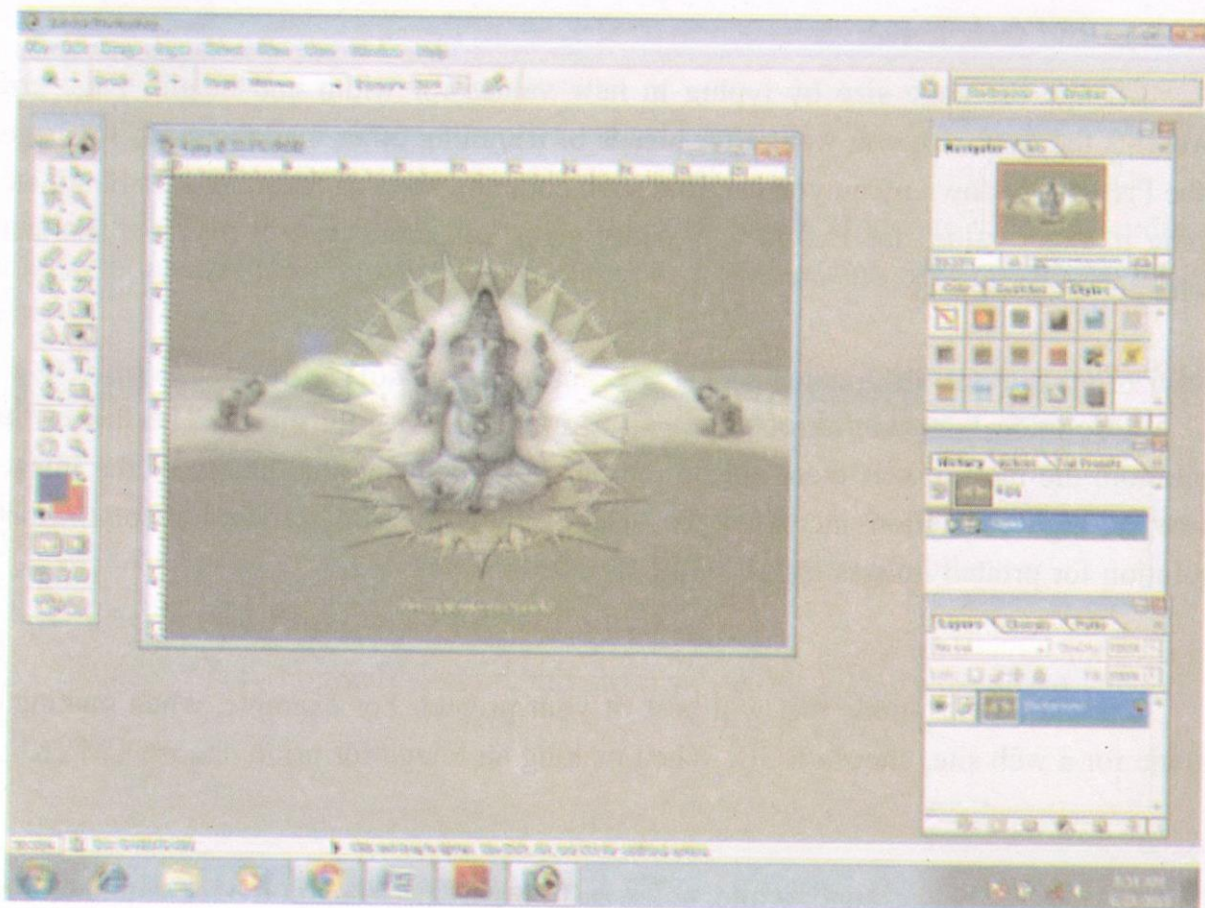
4. **Set Rulers, guides, and the grid** : help to position and align elements accurately in the image.

OPENING AND SAVING A IMAGE IN PHOTOSHOP

The steps to open and image in photoshop are as follows :

1. Click File > Open
2. The Open window will appear.
3. In the Open window, navigate to the folder that contains image that you want to open.

4. Select the file you want to open.
5. Click Open.
6. The file opens in its own window, called the image window.



SAVING

Remember to save your work often. Saving frequently lessens the risk of losing the work you have been doing. To save your Photoshop document, do the following:

1. Click **File > Save**.
2. Navigate to the place you would like your document to be saved by using the dropdown menu and the navigation window.
3. Enter the name of your document in the **Save As** text field.
4. Choose a format to save your project in from the **Format** dropdown menu. (Fig. 1)

5. Click the **Save** button in the bottom right corner of the dialogue box.
6. Check to make sure that your document is saved in the place you intended.

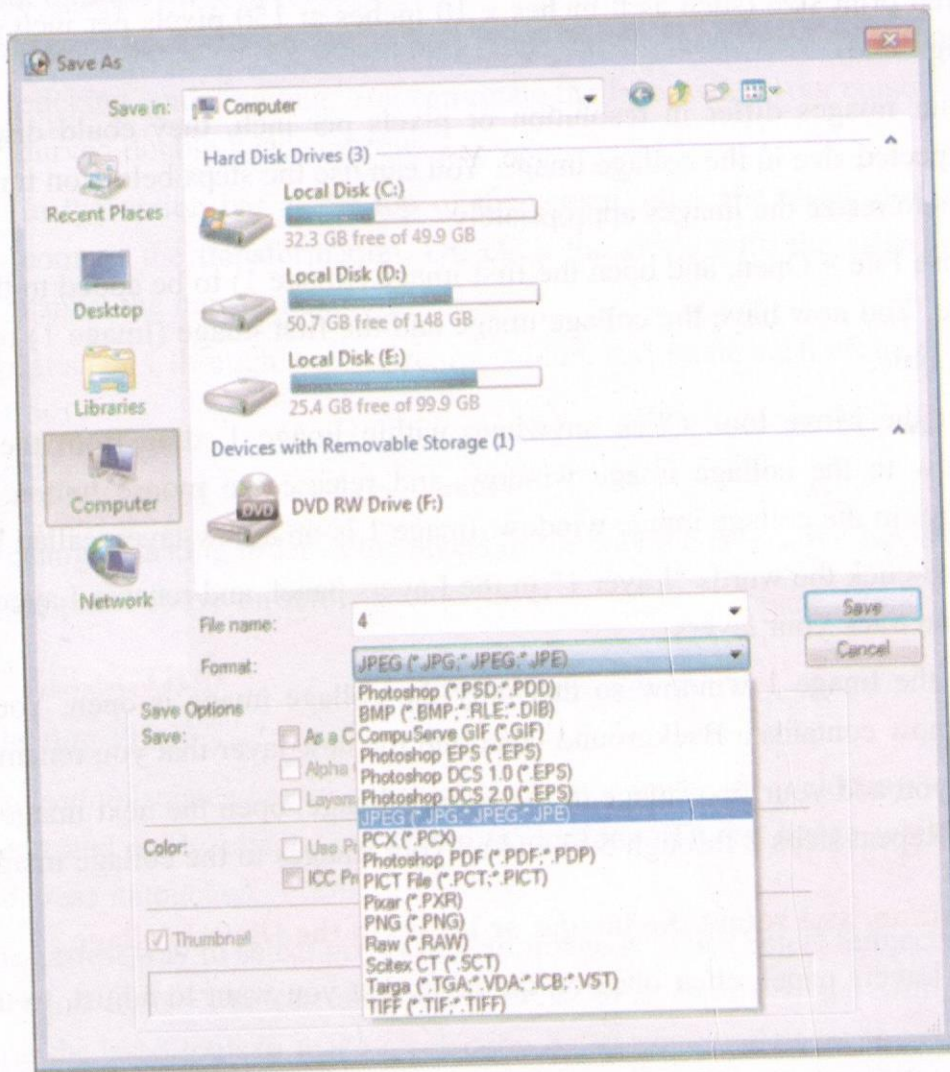


Fig. 1 Saving a document

CREATING DIGITAL COLLAGE

You can create a collage or montage in Adobe Photoshop or Photoshop Elements in several ways, but the following method is the simplest. Following the steps below, you add each new image to the collage image as a separate layer. This process allows you to manipulate each image individually. When all of your images are assembled in the final image, you can resize or move the layers (the added images).

If the Layers panel does not appear, choose Window > Layers.

Create a Digital Collage

1. Choose File > New to create a new blank image. Specify image size based on the desired print size (such as 8 inches x 10 inches at 150 pixels per inch on a white background).

If your images differ in resolution or pixels per inch, they could display at an unexpected size in the collage image. You can use the steps below on transforming layers to resize the images appropriately.

2. Choose File > Open, and open the first image (Image 1) to be added to the collage image. You now have the collage image and the first image (Image 1) open at the same time.
3. Select the Move tool. Click anywhere within Image 1, drag from the Image 1 window to the collage image window, and release the mouse button. Image 1 displays in the collage image window. Image 1 is on a new layer, called Layer 1.
4. Double-click the words "Layer 1" in the Layers panel, and rename Layer 1 so that you can track your layers.
5. Close the Image 1 window so that only the collage image is open. Your Layers panel now contains a Background layer and the new layer that you renamed.

After you add your first image to the collage image, open the next image that you want to add. Repeat steps 2 through 5 to add all your images to the collage image.

Resize, reposition, and rotate the images or layers in the Digital collage

1. In the Layers panel, click once on the layer that you want to adjust, to target the layer.
2. Choose Edit > Free Transform (Photoshop) or Image > Transform > Free Transform (Photoshop Elements).

Before you transform your layer, make sure that the correct layer is targeted in the Layers panel.

3. Note the bounding box around the edges of the layer and the anchor points on all four corners and sides .

- Resize the layer by dragging the anchor points.
- Reposition the layer by clicking inside the bounding box and dragging.

If a layer displays larger than the collage image, drag the layer in any direction

until you can see a corner of the image. You can then transform the image using the anchor point on the visible corner.

- Rotate the layer by positioning your cursor just outside the bounding box, clicking, and dragging. You can rotate the layer when your cursor changes to a curved double-headed arrow.
- In the option bar at the top of the screen, click the check box to accept or commit the transformation. Or, click the circle with the slash through it to cancel the transformation.

Repeat steps 1 through 3 to resize, reposition, and rotate each of the other layers in the image.

Rearrange the stacking order of the layers

To change stacking order of the layers or the way the layers overlap, drag any layer in the Layers panel above or below another layer.

MAKING SELECTION

Selecting Pixels

A *selection* isolates one or more parts of your image. By selecting specific areas, you can edit and apply effects and filters to portions of your image while leaving the unselected areas untouched.

The easiest way to select pixels in your image is to use Select Subject or one of the quick selection tools. You can also select areas of a certain shape with the marquee tools or use the lasso tools to make a selection by tracing an element in your image. It's also possible to make selections based on a range of colors in an image. There are commands in the Select menu to select, deselect, or reselect all pixels.

In addition to pixels, vector data can be used to make selections. Use the pen or shape tools to produce precise outlines called *paths*. Paths can be converted to selections.

Selections can be copied, moved, and pasted, or saved and stored in an *alpha channel*. Alpha channels store selections as grayscale images called *masks*. A mask is like the inverse of a selection: it covers the unselected part of the image and protects it from any editing or manipulations you apply. You can convert a stored mask back into a selection by loading the alpha channel into an image.

Select all pixels on a layer within the canvas boundaries

1. Select the layer in the Layers panel.
2. Choose Select > All.

Deselect selections

1. Do one of the following :

- Choose Select > Deselect.
- If you are using the Rectangle Marquee tool, the Elliptical Marquee tool, or the Lasso tool, click anywhere in the image outside the selected area.

Reselect the most recent selection

1. Choose Select > Reselect.

ADJUSTING PIXEL SELECTIONS :

MOVE, HIDE OR INVERT A SELECTION

You can move a selection border around an image, hide a selection border, and invert a selection so that the previously unselected part of the image is selected.

Move a selection border

Steps to move the selection border are as follows :

1. Using any selection tool, select New Selection from the options bar, and position the pointer inside the selection border. The pointer changes to indicate that you can move the selection.
2. Drag the border to enclose a different area of the image. You can drag a selection border partly beyond the canvas boundaries. When you drag it back, the original border reappears intact. You can also drag the selection border to another image window.

Hide or show selection edges

Steps to hide and show the selection edges are as follows :

1. Choose View > Extras. This command shows or hides selection edges, grids, guides, target paths, slices, annotations, layer borders, count, and Smart Guides.

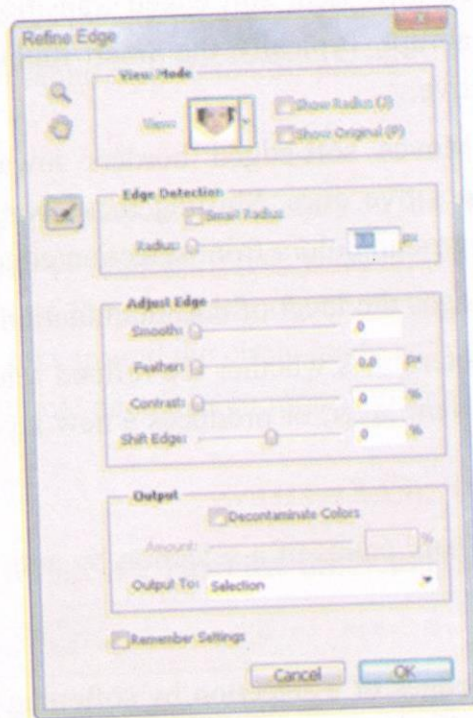
2. Choose View > Show > Selection Edges. This toggles the view of the selection edges and affects the current selection only. The selection edges reappear when you make a different selection.

REFINE SELECTION EDGES

The Refine Edge option improves the quality of selection edges, letting you extract objects with ease. You can also use Refine Edge options to refine a layer mask.

Step to refine selection are as follows :

1. Click Refine Edge in the options bar, or choose **Select > Refine Edge**. Then set the following options:



- **View Mode :** From the pop-up menu, choose a mode to change how the selection is displayed. For information about each mode, hover the pointer over it until a tool tip appears. Show Original displays the original selection for comparison. Show Radius displays the selection border where edge refinement occurs.
- **Refine Radius and Erase Refinements tools :** These tools let you precisely adjust the border area in which edge refinement occurs. To quickly toggle from one tool to the other, press Shift+E. To change the brush size, press the bracket keys

- **Smart Radius** : Automatically adjusts the radius for hard and soft edges found in the border region. Deselect this option if the border is uniformly hard- or soft-edged, or if you want to control the Radius setting and refinement brushes more precisely.
- **Radius** : Determines the size of the selection border in which edge refinement occurs. Use a small radius for sharp edges, and a large one for softer edges.
- **Smooth** : Reduces irregular areas (“hills and valleys”) in the selection border to create a smoother outline
- **Feather** : Blurs the transition between the selection and surrounding pixels.
- **Contrast** When increased, soft-edged transitions along the selection border become more abrupt. Typically, the Smart Radius option and refinement tools are more effective.
- **Shift Edge** : Moves soft-edged borders inward with negative values or outward with positive ones. Shifting these borders inward can help remove unwanted background colors from selection edges.
- **Amount** : Changes the level of decontamination and fringe replacement.
- **Output To** : Determines whether the refined selection becomes a selection or mask on the current layer, or produces a new layer or document.

SOFTEN THE EDGES OF SELECTIONS

You can smooth the hard edges of a selection by anti-aliasing and by feathering.

Anti-aliasing

Smooths the jagged edges of a selection by softening the color transition between edge pixels and background pixels. Because only the edge pixels change, no detail is lost. Anti-aliasing is useful when cutting, copying, and pasting selections to create composite images. Anti-aliasing is available for the Lasso tool, the Polygonal Lasso tool, the Magnetic Lasso tool, the Elliptical Marquee tool, and the Magic Wand tool.

Feathering

Blurs edges by building a transition boundary between the selection and its surrounding pixels. This blurring can cause some loss of detail at the edge of the selection. You can define feathering for the Marquee tools, the Lasso tool, the Polygonal Lasso tool,

or the Magnetic Lasso tool as you use the tool, or you can add feathering to an existing selection.

Select pixels using anti-aliasing

1. Select the Lasso tool, the Polygonal Lasso tool, the Magnetic Lasso tool, the Elliptical Marquee tool, or the Magic Wand tool.
2. Select Anti-aliased in the options bar.

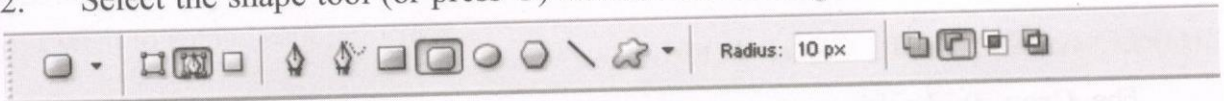
Define a feathered edge for a selection tool

1. Select any of the lasso or marquee tools.
2. Enter a Feather value in the options bar. This value defines the width of the feathered edge and can range from 0 to 250 pixels.

TEXT WRAPPING

Text wrap enables you to surround a picture or diagram with text. Text wraps around the graphics. Wrapping an image around an object in Photoshop emphasizes the apparent three dimensionality of the wrapped object, can make your composition more engaging. For e.g. wrapping text around the circle made with the shape tool and shaded to look spherical will make the circle appear even more spherical. The step in wrapping text are given below :

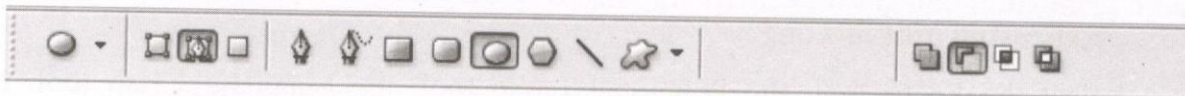
1. Open your image.
2. Select the shape tool (or press U) and use this settings:



3. Draw a shape where your text should go.



4. Then select the circle shape tool and use these setting. Make sure that select the option in the right circle. This makes the new shape to cut out of the existing one.



5. Create a circle in your image. The shape should cover the part of the image where you do not want to text to go.
6. Select the text tool (or press T) and move your mouse over the shape. You will see the cursor change in an T with circle around it. This mean you can use the shape as text field.
7. Enter your text and your will see the text wraps nicely around the image.

CROPPING

Cropping is one of the most basic editing techniques that can improve your images. Cropping helps to bring out the most important features in your image and focus the viewers' attention on these features. Cropping also allows you to make your image a standard photo size.

There are several ways to crop images in Adobe Photoshop :

1. Cropping with the **Crop Tool**
2. Cropping to a specific size
3. Cropping with the **Marquee Tool**

CROPPING WITH THE CROP TOOL

The **Crop Tool** allows you to make a precise selection of an image you wish to edit. To crop with the **Crop Tool**, follow these steps:

1. Open the image you wish to crop
2. Select the **Crop Tool** from the **Toolbox** .

3. Click on your image once and drag the mouse out to make a cropping border (Fig. 1).



4. Resize the border by dragging the squares at the sides and corners till you are satisfied with the way your image looks.

You can also rotate your cropping border. Move the cursor outside the border, you will see how it turns into a double-headed arrow (Fig. 2). Drag the arrows in the directions you wish to rotate your selection.



5. Once you are completely satisfied with your cropped image, press **ENTER**.

CROPPING TO A SPECIFIC SIZE

If you wish to print your digital photos or other images on standard size photo paper, you will have to crop your images to a specific size, such as 8x10. To crop an image to a specific size, do the following:

1. Open the image you wish to crop.
2. Select the **Crop Tool** from the **Toolbox**.
3. In the **Options** bar, specify the values for **Width** and **Height** (Fig. 3).

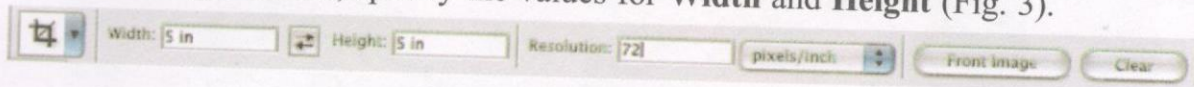


Fig. 3. Crop Tool Options bar

4. Click in your image and drag the cropping border. Notice that the border is constrained-you cannot make it wider or longer than the specified values (Figure 4). For example, if you entered 8 for **Width** and 10 for **Height**, whatever size you make the border, the area within it will fit on an 8x10 photo.



Fig. 4. Cropping to a specific size

5. Once you are completely satisfied with your cropped image, press **ENTER**.

CROPPING WITH THE MARQUEE TOOL

If you are in a hurry and need just a simple crop, you can use the **Marquee Tool** and a menu command. To crop with the **Marquee Tool**, follow the steps below:

1. Open the image you wish to crop.
2. Select the **Rectangular Marquee Tool** from the **Toolbox**.
3. Click in your image and drag the mouse to draw a marquee around the area you wish to crop.



Fig. 5. Drawing a marquee

4. In the main menu, go to **Image > Crop** (Fig. 6). The image will be immediately cropped.

ROTATING AN IMAGE

The image rotation commands let you rotate or flip an entire image. The steps to rotate an image are as follows :

1. Open the image using File > open option.
2. Click at Image > image rotation option. You can apply the following commands
 - 180° – it rotate the image by 180 degree.

- 90° CW - it rotates the image by 90 degrees clockwise.
 - 90° CCW - it rotates the image by 90 degrees anticlockwise.
3. Select the desired rotation e.g. 180°. The image will rotate to 180 degrees.

FLIPPING IMAGES

To flip an image in Adobe Photoshop, follow these steps

1. Open the image using File > Open option.
2. Click at Image > Image Rotation option. You can apply the following commands:
 - Flip Horizontal: It mirrors the image as to the standing axis, i.e. interchange the left and the right part of the image.
 - Flip Vertical: It mirrors the image as to the horizontal axis, i.e. it turns the image upside down.

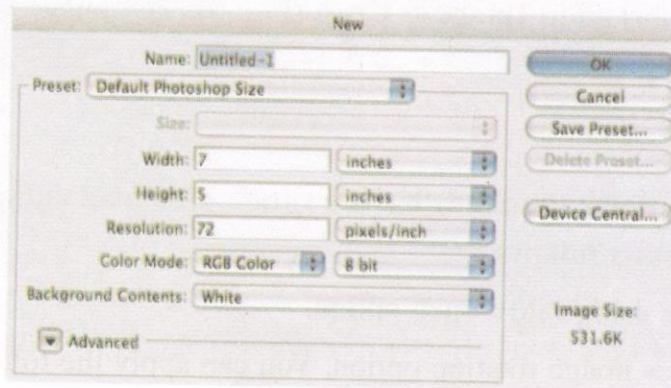
RESIZING

Resizing in Photoshop can help you print your images in standard photo sizes, resize and preserve the high quality of digital photos, and enlarge small images to a poster size.

RESIZING TO A SPECIFIC SIZE

To resize your image to a preset size, follow the steps below :

1. In the main menu, go to **File > New**.
2. In the **New** dialog box, click on the **Preset** dropdown menu. You will see several preset sizes, such as 2x3, 4x6, 5x7, 8x10 with the preset resolution of 300 ppi.



Preset size in the New dialog box

3. Choose the size that you wish and click **OK**.

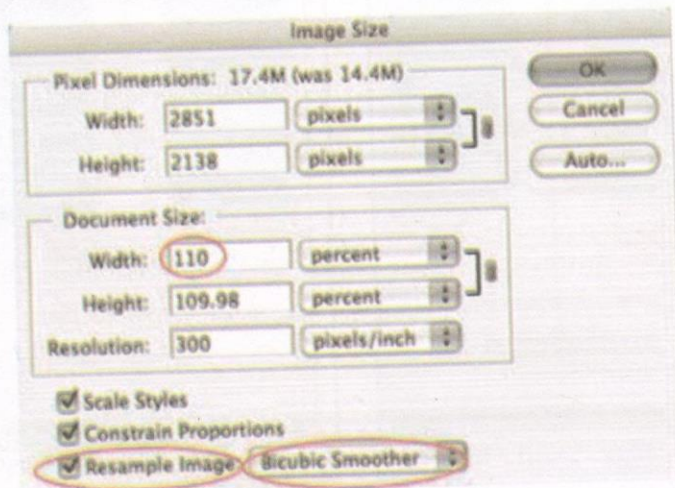
All the preset sizes are in portrait orientation. If you wish to resize an image with the landscape orientation, you need to create your own preset. To create your own size, do the following:

1. Type in the values for **Width** and **Height**, for example 7x5.
2. Type in your desired resolution (150 ppi is enough for high quality printing, and 72 ppi is good for the web images).
3. Click the **Save Preset** button.

ENLARGING

If you want to make your digital photo into a poster size image, you can do it in the **Image Size** dialog box. However, just increasing the dimensions will make the image appear blurry and pixilated. To enlarge the image without losing the quality, follow these steps:

1. Open the digital image you wish to enlarge.
2. In the main menu, go to **Image > Image Size**.
3. In the **Image Size** dialog box, make sure the **Resample Image** box is checked off and choose **Bicubic Smoother** from the dropdown box.



4. Change the **Document Size** measurements to **Percent**. Type in 110; this will increase the size of the image by 10 percent.
5. Continue enlarging by 10 percent till you are satisfied with the size.

RULERS

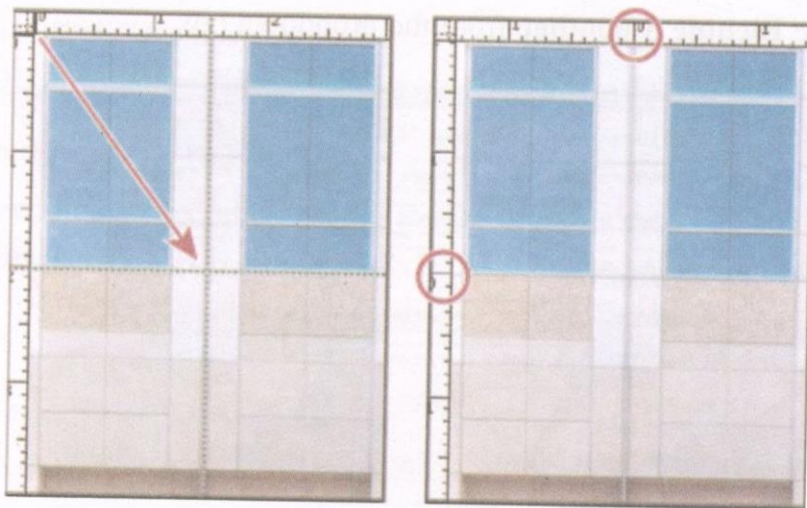
Rulers position images or elements precisely. When visible, rulers appear along the top and left side of the active window. Markers in the ruler display the pointer's position when you move it. Changing the ruler origin (the (0, 0) mark on the top and left rulers) lets you measure from a specific point on the image. The ruler origin also determines the grid's point of origin.

To show or hide rulers, choose View > Rulers.

Change a ruler's zero origin

1. (Optional) Choose View > Snap To, then choose any combination of options from the submenu. This snaps the ruler origin to guides, slices, or document bounds. You can also snap to the grid.
2. Position the pointer over the intersection of the rulers in the upper-left corner of the window, and drag diagonally down onto the image. A set of cross hairs appears, marking the new origin on the rulers.

To reset a ruler's origin to its default value, double-click the upper-left corner of the ruler.



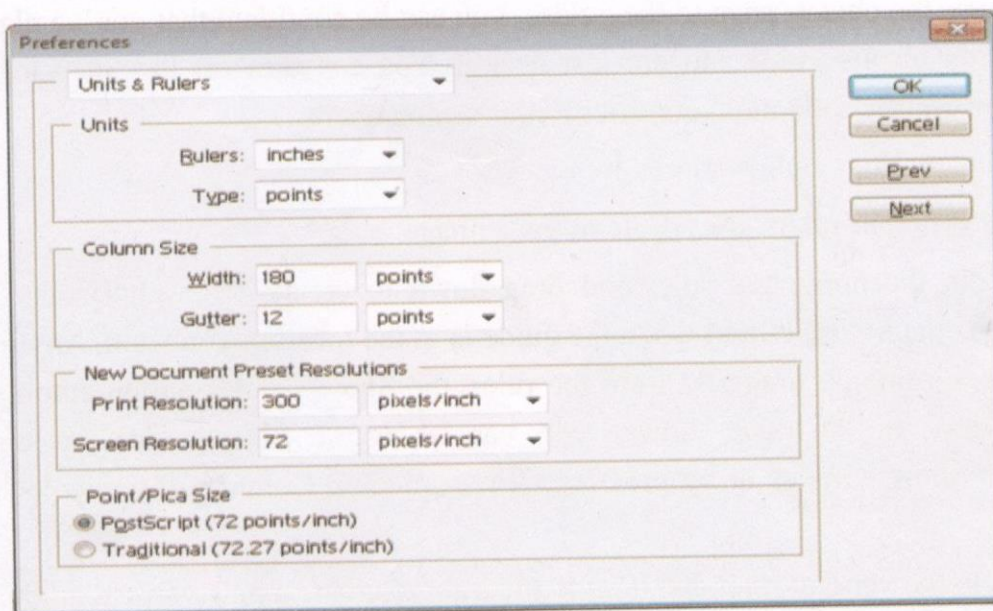
Change the unit of measurement

1. Do one of the following:



Double-click a ruler.

- ☛ (Windows) Choose Edit > Preferences > Units & Rulers, or right-click the ruler and then choose a new unit from the context menu.
- ☛ (Mac OS) Choose Photoshop > Preferences > Units & Rulers, or Control-click the ruler and then choose a new unit from the context menu.



2. For Rulers, choose a unit of measurement.
3. For Point/Pica Size, choose from the following options

PostScript (72 points per inch)

Sets a unit size compatible for printing to a PostScript device.

Traditional

Uses 72.27 points per inch, as traditionally used in printing.

4. Click OK.

GUIDES :

Guides are nonprintable horizontal and vertical lines that you can position anywhere you like within a Photoshop CS6 document window. Normally, they're displayed as solid blue lines, but you can change guides to another color and/or to dashed lines.

To use guides, choose Edit>Preferences>Guides, Grid & Slices (or Photoshop>Preferences>Guides, Grid & Slices on the Mac).

Guides would be useful even if they were only, well, guides. However, they have another cool feature: Objects and tools dragged to within 8 screen pixels of a guide are magnetically attracted to the guide and snap to it. That makes it ridiculously easy to align objects precisely.

Because the objects snap to the guides, you can be confident that you've placed the objects exactly on the guide and not just near it. You can turn off the Snap to Guides feature if you want a little more control in your arrangements.

To place guides, follow these steps :

1. Make sure that rulers are visible in your image.
2. Click in the horizontal ruler and drag down to create a new horizontal guide. Release the mouse button when the guide is in the location you want. Anytime you create a guide by dragging from the ruler, the Show Guides option automatically switches on. At other times, you can show or hide guides by choosing View>Show>Guides or by pressing Ctrl+semicolon Command+semicolon on the Mac).
3. Click in the vertical ruler and drag to the right to create a new vertical guide. When you release the mouse button, your new guide stops. You can also create a horizontal guide by Alt-clicking in the vertical ruler (Option-clicking on the Mac), or create a vertical guide by Alt-clicking in the horizontal ruler (Option-clicking on the Mac). Use whichever method is faster for you. Finally, you can choose View>New Guide and enter your desired orientation and position.
4. Use the Move tool (press V to activate it) to reposition your guides

CHANGING PRINT SIZE OF AN IMAGE.

To view the current print size or change it just go to Image — Image Size and make sure it's in inches. You can change to the print size you want then go to View – Print Size and it will zoom in so you can see how the image will look at actual print size.

The Problem With Photoshop's Print Size View

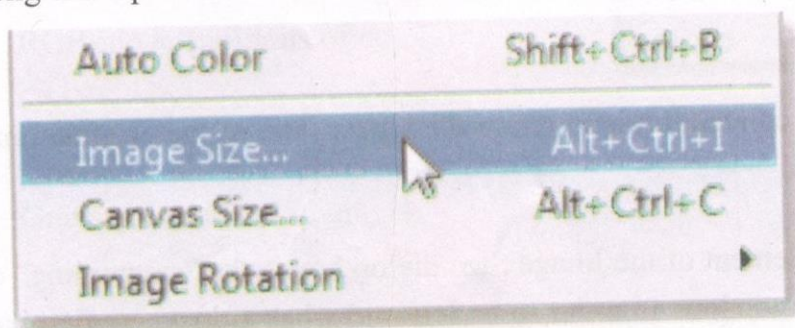
Photoshop lets us view our images at just about any zoom size we like using the Zoom Tool, and it also includes a few automatic zoom options under the View menu in the Menu Bar, like **Fit on Screen**, which zooms the image to whatever size is needed for it to fit entirely within the dimensions of your display, and **Actual Pixels** which instantly

jumps you to the 100% zoom level.

As an example, here's an image currently have open in Photoshop. At the moment, it's being viewed at the 100% zoom level (young thinking woman photo from Shutterstock):

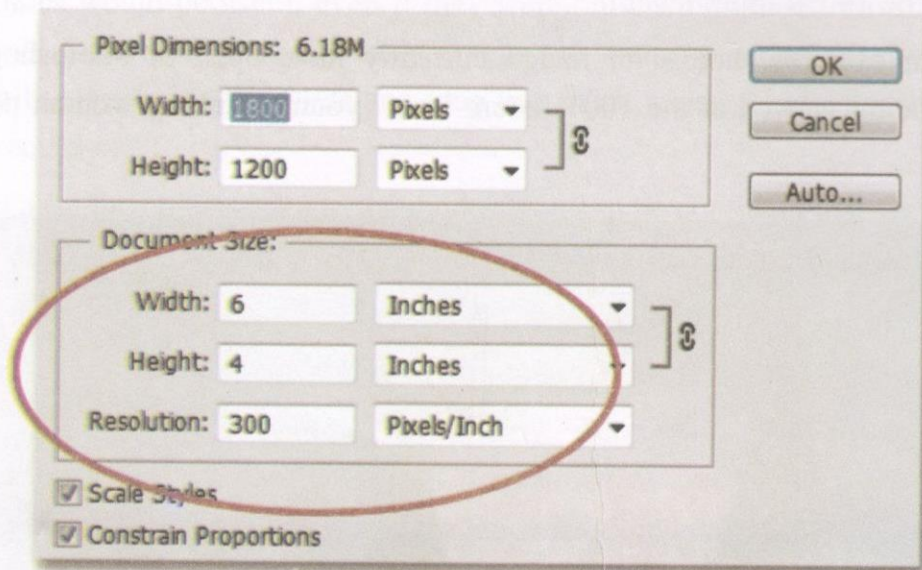


Open my Image Size dialog box by going up to the **Image** menu in the Menu Bar along the top of the screen and choosing **Image Size**:



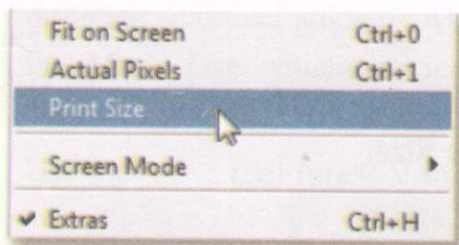
Going to Image > Image Size.

Here, in the Document Size section of the Image Size dialog box, where we set the size and resolution of the printed version of the image, we see that my image is current set to print as a 4x6 (6 inches for the width, 4 inches for the height):



The Document Size section shows us the size the image will print based on its resolution.

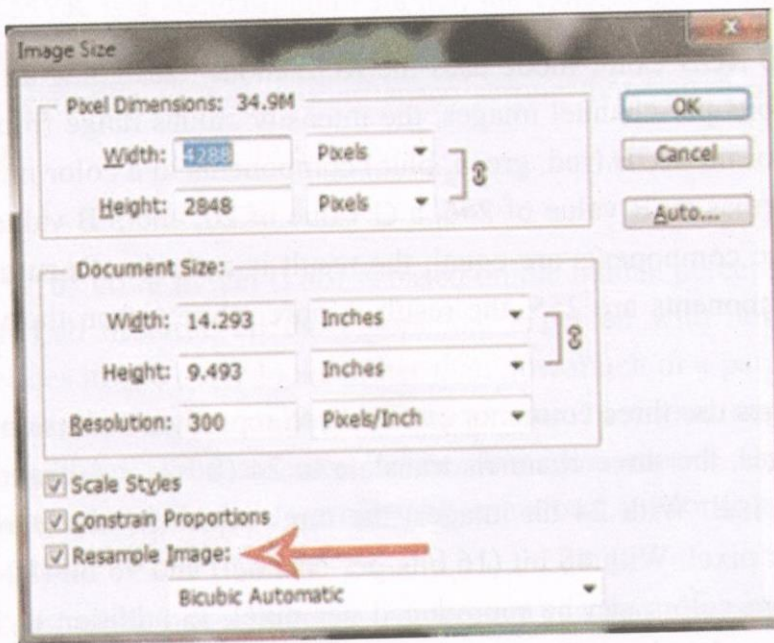
Now that we know how large the image will print, click OK to close out of the Image Size dialog box, and then choose Photoshop's Print Size view mode by going up to the **View** menu at the top of the screen and choosing **Print Size** :



Photoshop's default convention is to retain the aspect ratio of the original image.

RESAMPLING

Another important element of the Image Size dialog box is the “resampling” check box near the bottom of the window. In order to understand what it does, we first have to understand what Photoshop is doing when we make an image larger or smaller than the original. When we tell Photoshop to make an image smaller, it is essentially throwing out the extra pixels we no longer need. When we tell Photoshop that we want to go bigger, though, it has to add pixels and is basically guessing. Resampling allows Photoshop to make a more educated guess about those extra pixels.



WORKING WITH COLORS

The three primary colors of light (red green and blue) will generate all the color in the visible spectrum when added together in different combination. Adding equal proportion of red green and blue light produces white. Complete absence of red green and blue light result in black. A color mode determines the color model used to display and print the images.

Different color models are :

1. RGB mode (millions of colors)
2. CMYK mode (four-printed colors)
3. Index mode (256 colors)
4. Grayscale mode (256 grays)
5. Bitmap mode (2 colors)

The color mode or image mode determines how colors combine based on the number of channels in a color model. Different color modes result in different levels of color detail and file size. For instance, use CMYK color mode for images in a full-color print brochure, and use RGB color mode for images in web or e-mail to reduce file size while maintaining color integrity.

RGB Color mode

Photoshop RGB Color mode uses the RGB model, assigning an intensity value to each pixel. In 8 bits-per-channel images, the intensity values range from 0 (black) to 255 (white) for each of the RGB (red, green, blue) components in a color image. For example, a bright red color has an R value of 246, a G value of 20, and a B value of 50. When the values of all three components are equal, the result is a shade of neutral gray. When the values of all components are 255, the result is pure white; when the values are 0, pure black.

RGB images use three colors, or *channels*, to reproduce colors on screen. In 8 bits-per-channel images, the three channels translate to 24 (8 bits x 3 channels) bits of color information per pixel. With 24 bit images, the three channels can reproduce up to 16.7 million colors per pixel. With 48 bit (16 bits-per-channel) and 96 bit (32 bits-per-channel) images, even more colors can be reproduced per pixel. In addition to being the default mode for new Photoshop images, the RGB model is used by computer monitors to display colors. This means that when working in color modes other than RGB, such as CMYK, Photoshop converts the CMYK image to RGB for display on screen.

Although RGB is a standard color model, the exact range of colors represented can vary, depending on the application or display device. The RGB Color mode in Photoshop varies according to the working space setting that you specify in the **Color Settings** dialog box.

CMYK Color mode

In the CMYK mode, each pixel is assigned a percentage value for each of the process inks. The lightest (highlight) colors are assigned small percentages of process ink colors; the darker (shadow) colors higher percentages. For example, a bright red might contain 2% cyan, 93% magenta, 90% yellow, and 0% black. In CMYK images, pure white is generated when all four components have values of 0%.

Use the CMYK mode when preparing an image to be printed using process colors. Converting an RGB image into CMYK creates a *color separation*. If you start with an RGB image, it's best to edit first in RGB and then convert to CMYK at the end of your editing process. In RGB mode, you can use the **Proof Setup** commands to simulate the effects of a CMYK conversion without changing the actual image data. You can also use CMYK mode to work directly with CMYK images scanned or imported from high-end systems.

Although CMYK is a standard color model, the exact range of colors represented can vary, depending on the press and printing conditions. The CMYK Color mode in Photoshop varies according to the working space setting that you specify in the **Color Settings** dialog box.

Lab Color mode

The CIE $L^*a^*b^*$ color model (Lab) is based on the human perception of color. The numeric values in Lab describe all the colors that a person with normal vision sees. Because Lab describes how a color looks rather than how much of a particular colorant is needed for a device (such as a monitor, desktop printer, or digital camera) to produce colors, Lab is considered to be a *device-independent* color model. Color management systems use Lab as a color reference to predictably transform a color from one color space to another color space.

The Lab Color mode has a lightness component (L) that can range from 0 to 100. In the Adobe Color Picker and Color panel, the *a* component (green-red axis) and the *b* component (blue-yellow axis) can range from +127 to -128.

Lab images can be saved in Photoshop, Photoshop EPS, Large Document Format (PSB), Photoshop PDF, Photoshop Raw, TIFF, Photoshop DCS 1.0, or Photoshop DCS 2.0 formats. You can save 48 bit (16 bits-per-channel) Lab images in Photoshop, Large Document Format (PSB), Photoshop PDF, Photoshop Raw, or TIFF formats.

Grayscale mode

Grayscale mode uses different shades of gray in an image. In 8 bit images, there can be up to 256 shades of gray. Every pixel of a grayscale image has a brightness value ranging from 0 (black) to 255 (white). In 16-and 32 bit images, the number of shades in an image is much greater than in 8 bit images.

Grayscale values can also be measured as percentages of black ink coverage (0% is equal to white, 100% to black).

Grayscale mode uses the range defined by the working space setting that you specify in the **Color Settings** dialog box.

Bitmap mode

Bitmap mode uses one of two color values (black or white) to represent the pixels in an image. Images in Bitmap mode are called bitmapped 1 bit images because they have a bit depth of 1.

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Duotone mode

Duotone mode creates monotone, duotone (two-color), tritone (three-color), and quadtone (four-color) grayscale images using one to four custom inks.

Indexed Color mode

Indexed Color mode produces 8 bit image files with up to 256 colors. When converting to indexed color, Photoshop builds a *color lookup table (CLUT)*, which stores and indexes the colors in the image. If a color in the original image does not appear in the table, the program chooses the closest one or uses *dithering* to simulate the color using available colors.

Although its palette of colors is limited, indexed color can reduce file size yet maintain the visual quality needed for multimedia presentations, web pages, and the like. Limited editing is available in this mode. For extensive editing, you should convert temporarily to RGB mode. Indexed color files can be saved in Photoshop, BMP, DICOM (Digital Imaging and Communications in Medicine), GIF, Photoshop EPS, Large Document Format (PSB), PCX, Photoshop PDF, Photoshop Raw, Photoshop 2.0, PICT, PNG, Targa®, or TIFF formats.

Multichannel mode

Multichannel mode images contain 256 levels of gray in each channel and are useful for specialized printing. Multichannel mode images can be saved in Photoshop, Large Document Format (PSB), Photoshop 2.0, Photoshop Raw, or Photoshop DCS 2.0 formats.

These guidelines apply when converting images to Multichannel mode :

- Layers are unsupported and therefore flattened.
- Color channels in the original image become spot color channels in the converted image.
- Converting a CMYK image to Multichannel mode creates cyan, magenta, yellow, and black spot channels.
- Converting an RGB image to Multichannel mode creates cyan, magenta, and yellow spot channels.
- Deleting a channel from an RGB, CMYK, or Lab image automatically converts the image to Multichannel mode, flattening layers.

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- Deleting a channel from an RGB, CMYK, or Lab image automatically converts the image to Multichannel mode, flattening layers.

Shortcut Keys :

Function	Key Combination
To Cancel an Operation	Esc or Ctrl + . (period)
To Close an image	Ctrl + W
Open an image	Ctrl + O
Print image with preview	Ctrl + P
Page setup	Ctrl + Shift + P
For General Preferences	Ctrl + K
To display all the preferences used	Ctrl + Alt + K
Exit from the Photoshop	Ctrl + Q
Save As	Ctrl + Shift + S
Insert new Layer	Ctrl + N
Merge the Layers	Ctrl + E
Merge Visible	Ctrl + Shift + E
Move Layer via copy	Ctrl + J
Move Layer via cut	Ctrl + Shift + J
Paste the copied value	Ctrl + V or F4
Select All Layers	Alt + Ctrl + A
Invert Selection	Ctrl + I
Save the Opened document on Web	Ctrl + Alt + Shift + S
To Show / Hide the tool panels	Press TAB
Show / hide only Your palette	Use Shift + Tab
To switch to Your next document	Ctrl + Tab
To switch to Your previous document	Use CTRL + SHIFT + TAB
To Duplicate the Active Layer	Ctrl + Alt + J

Q.1. State True or False :

1. The creator of Adobe Photoshop is Microsoft.
2. The default colors for the Foreground and Background colors are black and white.

3. Every tool can be activated by a letter keystroke.
4. You cannot delete the Layers once they've been created.
5. You can not change the width and length of a canvas after you create it.
6. In Adobe Photoshop holding the shift button will allow you to add to a selection.
7. In photoshop you can make selection with lasso, marquee, magic wand, and quick selection tools.
8. Control+F is the shortcut for hiding/showing your rulers.
9. You can open color pallet from window menu.
10. You can double-click on the words on the layer to change the name of the layer.

Answer : 1. F 2. T 3. F 4. F 5. T 6. T 7. T 8. F 9. T 10. T

EXERCISES

2. Why Photoshop is used ? Explain.
3. Explain the purpose of Text Wrap ?
4. How to change black and white image to a colored picture using Photoshop ?
5. What do you mean by workspace ? Explain
6. How can you soften the edges of selection ? Explain.
7. What is digital collage ? What are the various steps to create a digital collage in Photoshop ?
8. What do you mean by Photoshop Rulers ? How can we change the various setting in rulers ?
9. What are the various transforming objects in Photoshop ? Give the use of each.

—End—