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Introduction

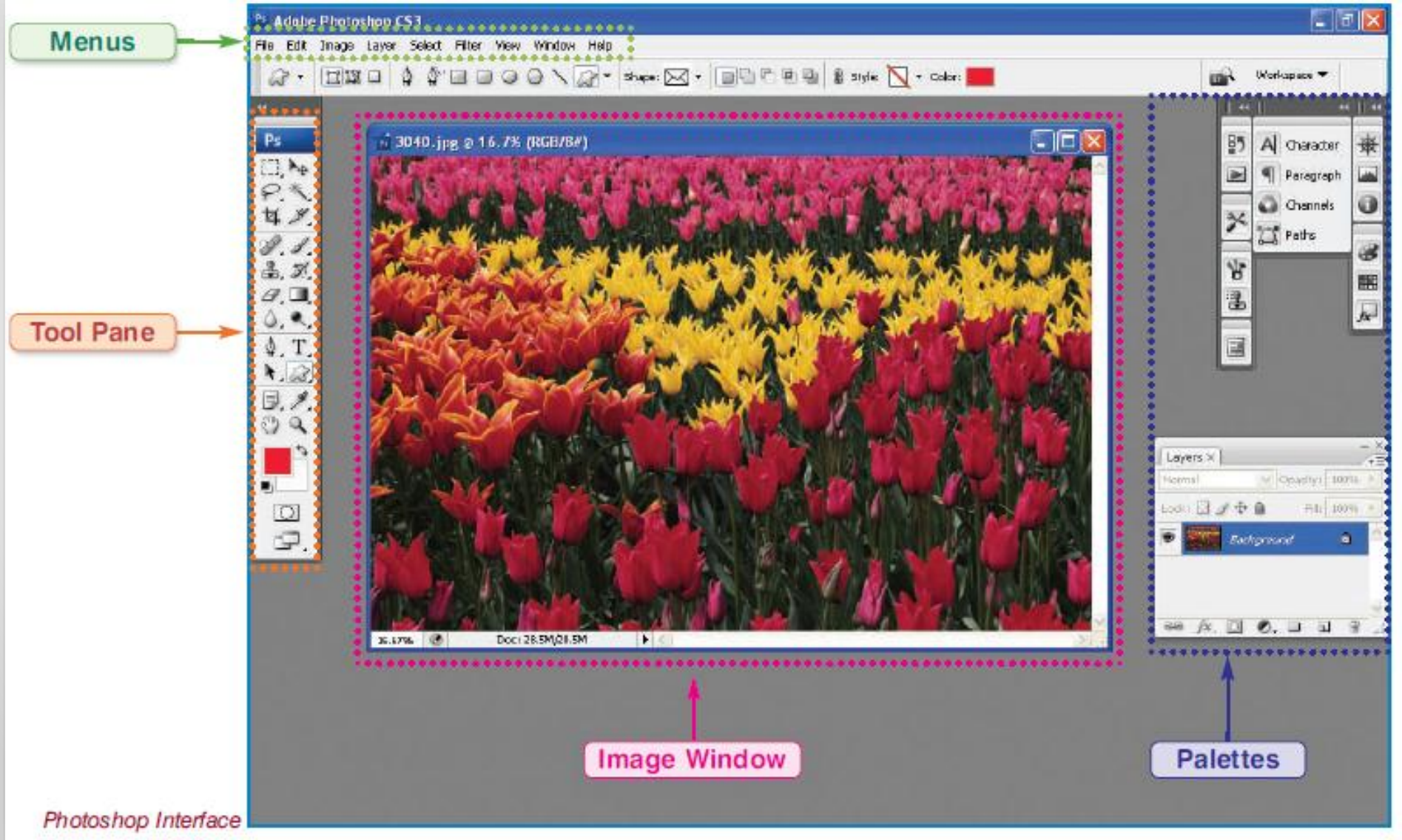
Introduction

- **Adobe Photoshop** is one of the most powerful image modification programs published by Adobe Systems. Although Photoshop is a professional software for photographers, graphic designers and web designers, amateur users can use Photoshop easily. The file format of Photoshop is PSD. PSD files keep layer information to maintain the original image for future use.
- Photoshop can work with different color modes: Bitmap, Grayscale, Duotone, Indexed Color, RGB Color, CMYK Color, Lab Color.

Introduction

- There are two kinds of graphics. One is "raster graphics", the other is "vector graphics". Their difference lies under encoding the data file for a graphics image.
- **Raster graphics** describe images as arrays of colored pixels. It is like preparing a mosaic artwork. You place stones with different colors on your canvas to produce different shapes and illustrations. The more stones you place in a certain area to describe an image, the more clear artwork you will have.
- **Vector graphics** based upon mathematical equations to represent images in computer graphics. You can increase the size of your canvas as much as you want without losing the visual quality of your vector image. Vector graphics are mostly used in big format printing. But their ability is limited in Photo editing.

Overview


Menus
Tool Pane
Image Window
Palettes
Photoshop Interface
Adobe Photoshop CS3
File Edit Image Layer Select Filter View Window Help
3040.jpg @ 16.7% (RGB/8#)
Character
Paragraph
Channels
Paths
Layers
Background

Digital Imaging

Color Modes

Pixel

Resolution

Anti-Aliasing

Color Modes

- Each color you see on your computer screen or on a printed document is a mixture of other main colors. To produce a color, you need to combine the main colors in a certain ratio.
- In a PC environment there are two different standards in defining the main colors. These are called the color models.

Color Modes

- Red, Green, Blue: This model refers to a system for representing the colors on a computer screen. Red, green, and blue are combined to produce other colors.
- Color values vary in the range 0-255. Red=0, Green=0, Blue=0 produces black color and Red=255, Green=255, Blue=255 produces white color.
- In RGB red plus green produces yellow, red plus blue produces magenta, blue plus green produces cyan. Figure 1 shows the three colors used in the RGB color model and intersection of the colors.

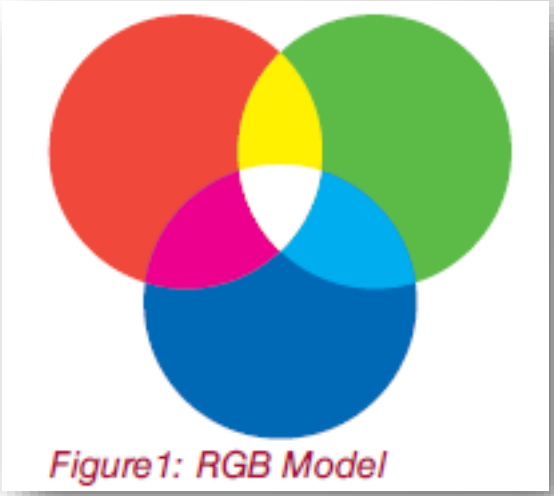


Figure 1: RGB Model

Color Modes

- Cyan, Magenta, Yellow, Key (Black): The CMYK model is commonly used for color printing. If you are using your image editing programs to prepare printing materials, you have to work with CMYK. In CMYK, magenta plus yellow produces red, magenta plus cyan produces blue and cyan plus yellow produces green.
- Figure 2 shows the four colors used in the CMYK color model and the intersection of the colors.

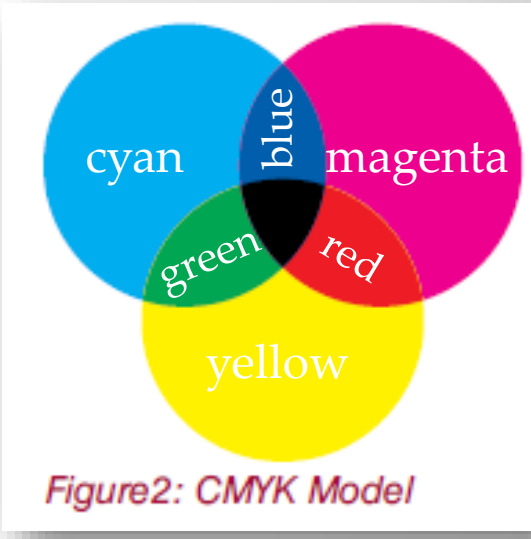


Figure2: CMYK Model

Pixel

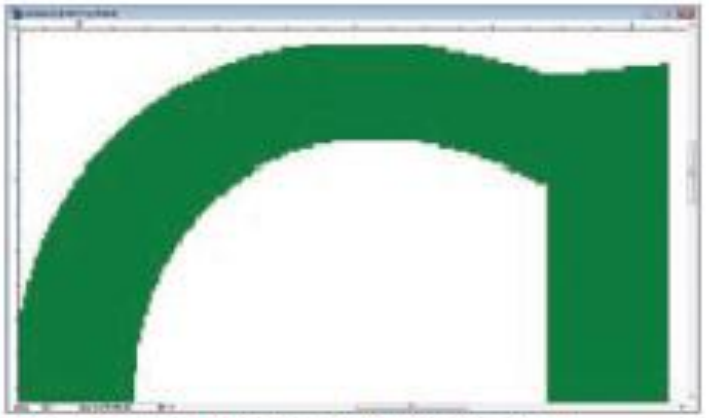
- A **pixel** (picture element) is a single point in a graphic image. Digital images consist of collocated pixels. The intensity of each pixel is variable; in color systems, each pixel has typically three or four dimensions of variability such as red, green, and blue, or cyan, magenta, yellow, and black. It means a pixel can have only one color.

Resolution

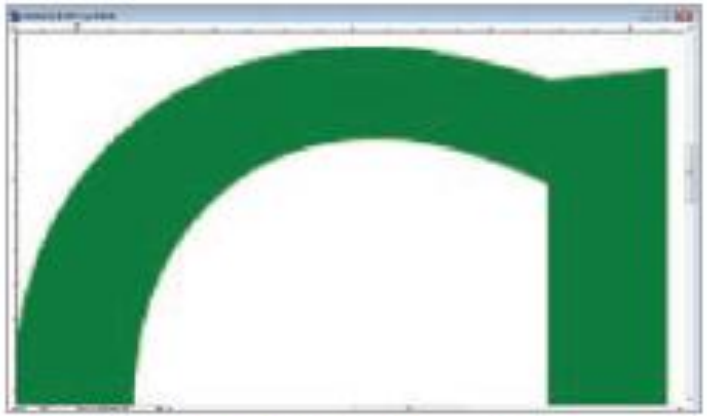
- **Resolution** refers to the sharpness and clarity of an image. Resolution is the number of pixels on a specific area such as a computer screen or a paper. It is most often used to define monitors, printers, and images. The higher the resolution you have means the more pixels you use in defining the image and getting a sharper and clearer result.
- **Pixels Per Inch (PPI)** is a measurement of resolution of a monitor displaying an image.
- **Dot per inch (DPI)** defines the number of dots will be put on a specific surface when printing.

Anti-Aliasing

- One of the most important techniques in making eye-catching and smooth graphics is anti-aliasing. In the context of rasterizing images, **anti-aliasing** refers to the reduction of the jagged borders between colors.
- **Rasterizing** is the process of converting vector image to raster images.



Rendered Without Antialiasing.



Rendered Using Antialiasing.

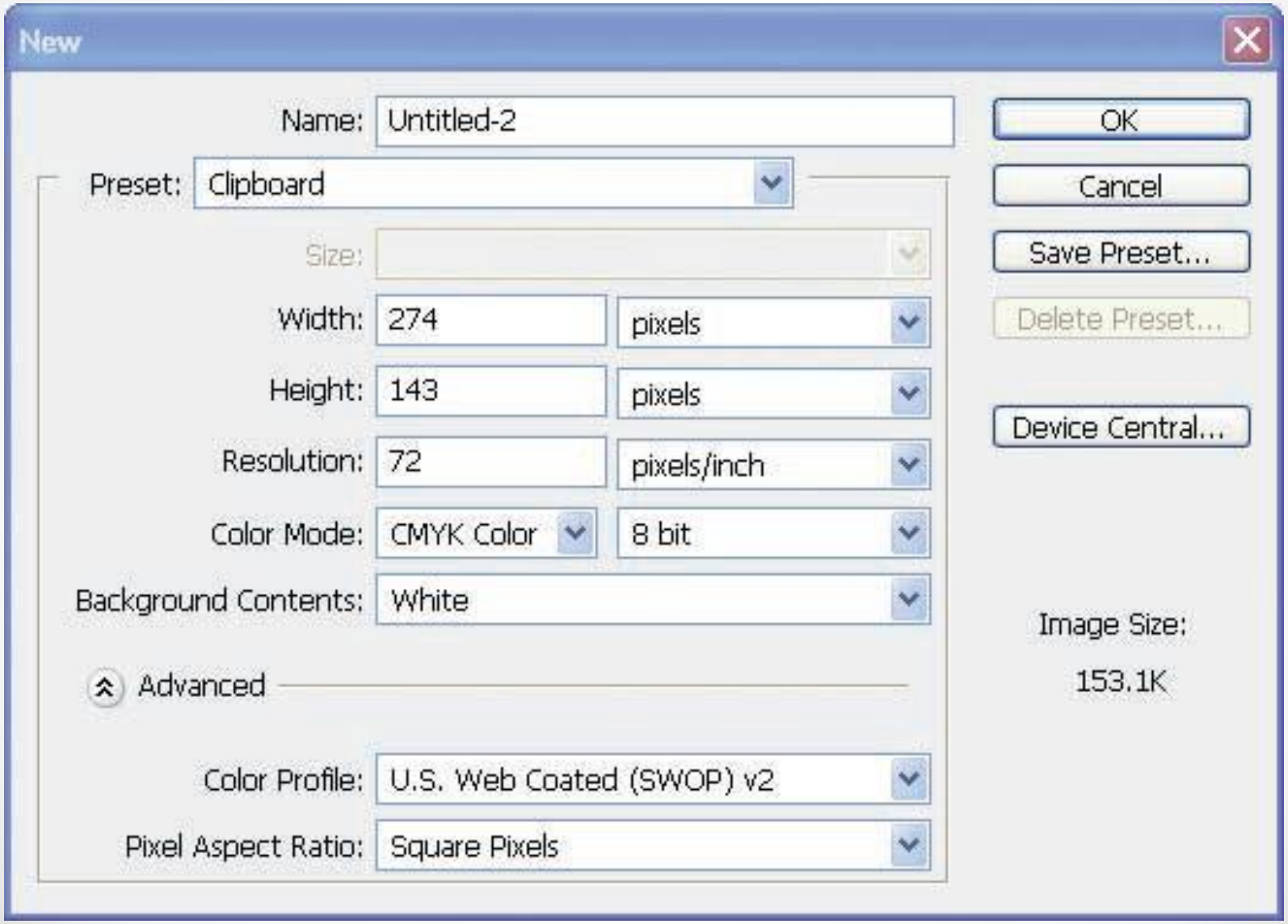
File Operations

New Image
Color Mode
Background
File Formats
Opening and Saving Files

New Image

- When you run Photoshop for the first time, you need to use the *New File* dialog box to create a new file.
- To create a new file:
- Select *File -> New*. The New dialog box opens.
  - **Name**: Write the name of the image file
  - **Preset**: To specify the size of image you may either use preset or width - height options.
  - **Resolution**: Resolution refers the number of pixels per inch. Generally image resolution is 72 dpi, which is well enough for web images. But for printing purposes we need to create our document at 300 dpi. Increasing dpi of a image increases the size of the file too. Therefore we use 72 dpi or web graphics to open the web site immediately on the Internet.

New Image

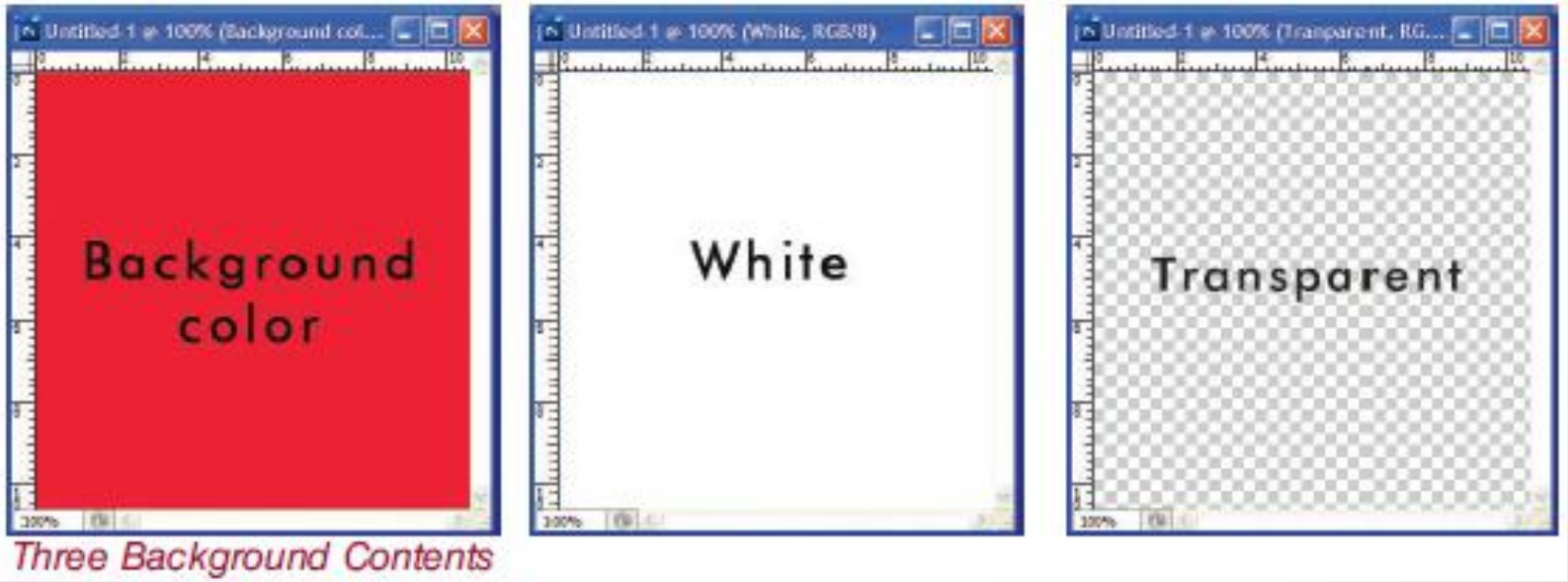

New
Name: Untitled-2
OK
Preset: Clipboard
Cancel
Size:
Save Preset...
Width: 274 pixels
Delete Preset...
Height: 143 pixels
Device Central...
Resolution: 72 pixels/inch
Color Mode: CMYK Color 8 bit
Background Contents: White
Image Size:
153.1K
Advanced
Color Profile: U.S. Web Coated (SWOP) v2
Pixel Aspect Ratio: Square Pixels

Color Mode

- **Color mode** shows how the colors are recorded in the file. For example ;
  - **RGB** : Red, Green, Blue
  - **CMYK** : Cyan, Magenta, Yellow, Black
  - **Grayscale** : 256 shades of gray

Background Contents

- Every image by default has a background layer. It is different than any other layer that we work with.
  - **White** : Background color will be white
  - **Background color** : You can set background color on the toolbar
  - **Transparent** : Background will be transparent (No color)



Three Background Contents

File Formats (1)

- You can save a file in about 20 different file formats. The most common formats and their usages are listed below.
  - **PSD** : PSD is the default file format of Photoshop. PSD files keep layers information to maintain the original image for future use.
  - **BMP** : Windows bitmap file format.
  - **EPS** : The most popular file format for publishing.
  - **GIF** : Due to it's low file size, gif is a common web file format and suitable for animations.
  - **JPG/JPEG** : The most used photo and web images format. Difference between GIF and JPG is supported color. GIF can include 256 colors, JPG more than 16.7 million colors.
  - **PDF** : Adobe's Portable Document Format.
  - **TIFF** : TIFF and EPS are the two most accepted file formats for publishing. TIFF also keeps layers information like PSD.

File Formats (2)

Format	Layers	Usage
PSD	Yes	General (Photoshop format)
BMP	No	Windows applications, Wallpaper
EPS	No	Publishing
GIF	No	Web design, animation
JPG	No	Web design, Photo
PDF	Yes	E-book
TIFF	Yes	Publishing

Usage of File Formats

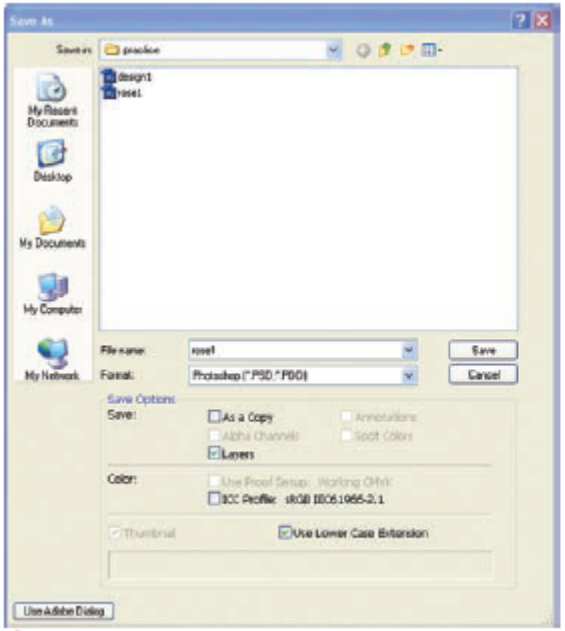
File Formats (3)

Format	Quality	Size
PSD	Uncompressed	4050 KB
BMP	24 Bit	672 KB
EPS	1bit/pixel	1197 KB
GIF		126 KB
JPG	Maximum	302 KB
JPG	High	120 KB
JPG	Medium	69 KB
JPG	Low	57 KB
PDF		3469 KB
TIFF	Uncompressed	4194 KB
TIFF	LZW (No layers)	448 KB

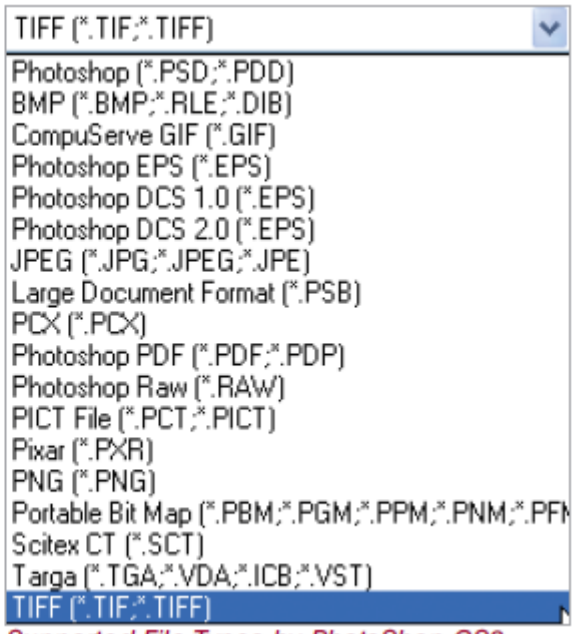
Size of the Picture Formats

Saving Files

- Saving a file is very important for Photoshop. In Photoshop, you can save a file in two different file formats to use in the future. **PSD** and **TIFF** are the most important file formats to keep layer information. You have to save your project in the **PSD** format to edit in the future.
- Select *File -> Save As* and then choose the file format according to your need.



Save As Dialog Box



Supported File Types by PhotoShop CS3

Opening Files

- To open an existing file choose *File -> Open*. Find the picture and click on it. The appearance of the picture will be in the preview window. Click open if it's the file that you need. You may also make multiple selections by pressing the CTRL Key to open more then one file.

Practice 1

- Create a new page according to the following criteria:
  - Width: 500 pixel
  - Height: 300 pixel
  - Resolution: 72
  - Color mode: RGB
  - Background contents: White
  - Save as yourname.jpg

Practice 2

- Open **grapes.jpg** file.
  - save as PSD, BMP, EPS, GIF, PDF and TIFF
  - put all the files in a folder
  - compare their sizes
  - Thick if **MS Paint** can open or not

	Size	MS Paint
JPG		
PSD		
BMP		
EPS		
GIF		
PDF		
TIFF		

The End
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