

File and Folder Naming Conventions

Any digital assets you create should be stored so you can find them in the future, possibly among a vast collection of other assets. Digital asset makers must choose the best file type for their work, and take care that it is named and stored properly so it can be easily located, used and enjoyed in the future. When working for a client, proper file management will also be a job requirement. Proper file management involves at least the following three fundamentals:

File Types

Digital assets can be created and saved in various formats, or file types. Each file type has specific characteristics, strengths and weaknesses. The file type that works well for creating a complex digital illustration may work poorly for saving a high-resolution photo. The file type that is perfect for creating a poster with photos and text may not be the file type that a printer needs to print copies of the poster.

The most common image file formats, the most important for cameras, printing, scanning, and internet use, are JPG, TIF, PNG, and GIF. As you continue reading, notice how file choice depends on issues such as file size, colour requirements, printer requirements, compression and detail. You can research other file types, but you should make your choices based on issues such as these.

JPG is the most used image file format. JPG is the file extension for JPEG files (Joint Photographic Experts Group, a committee of ISO and ITU). Digital cameras and web pages use JPG files, because JPG heroically compresses the data to be very much smaller in the file. JPG uses lossy compression to accomplish this feat, which has a strong downside. A smaller file, yes, there is nothing like JPG for

small, but this is at the cost of image quality. However, this compression degree is optionally selectable (with an option setting named JPG Quality in your editor), to be **lower quality smaller files**, or to be **higher quality larger files**. Small file size and high image quality are opposites. Your digital camera offers that choice too, the menu usually called Image Quality (you do want to select best quality in the camera). In general, today, JPG is rather unique in this regard, of using lossy compression allowing very small files of lower quality, whereas almost all other file types use lossless compression (with larger files).

JPG is used when small file size (for transfer or storage, web pages, email, memory cards, etc) is more important than maximum image quality. But a High Quality setting to create JPG is good enough in most cases, if we don't overdo the compression. Perhaps good enough for some uses even if we do overdo it (web pages, etc). But if you are concerned with maximum quality for archiving your important images, then you do need to know two things: 1) JPG should always choose higher Quality and a larger file, and 2) do NOT keep editing and saving your JPG images repeatedly, because more quality is lost every time you save it as JPG (in the form of added JPG artifacts... pixels become colors they ought not to be - lossy).

TIF is lossless (including LZW compression option), which is considered the highest quality format for commercial work. The TIF format is not necessarily any "higher quality" per se (the same RGB image pixels, they are what they are), and most formats other than JPG are lossless too. TIF simply has no JPG artifacts, no additional losses or JPG artifacts to degrade and detract from the original. And TIF is the most versatile, except that web pages don't show TIF files. For other purposes however, TIF does most of anything you might want, from 1-bit to 48-bit color, RGB, CMYK, LAB, or Indexed color. Most of the "special" file types (for example, camera RAW files, fax files, or multipage documents) are based on TIF format, but with unique proprietary data tags — making these incompatible unless expected by their special software. Web browsers cannot show TIF files.

TIF format is very versatile. There are many TIFF formats for all kinds of data and compressions. CCITT data for standard text document storage, which supports multiple pages in one file. Standard

fax is another TIFF format. Designers can be assigned special data tags to declare other data and compression types. One case is that some camera Raw files are actually TIF format, but with unique proprietary data tags for their special purpose, which then is no longer compatible with TIF viewers.

GIF was designed by CompuServe in the early days of computer 8-bit video, before 24 bits or JPG was used, for video display at dial up modem speeds. GIF discards all Exif data, which because GIF was designed for video screen purposes, GIF does Not retain printing resolution values. GIF always uses lossless LZW compression, but it is always an indexed color file (1 to 8-bits per pixel). GIF can have a palette of 24-bit colors, but only a maximum of 256 of them (which colors depend on your image colors). GIF is rather limited colors for color photos, but is generally great for graphics. Repeating, don't use GIF with indexed color for color photos today, the color is too limited. GIF does offer transparency and animation. PNG and TIF files can also optionally handle the same indexed color mode that GIF uses, but they are more versatile with other choices too (can be RGB or 16 bits, etc). But GIF is still very good for web graphics (i.e., with a limited number of colors). For graphics of only a few colors, GIF can be much smaller than JPG, with more clear pure colors than JPG).

PNG can replace GIF today (web browsers show both), and PNG also offers many options of TIF too (indexed or RGB, 1 to 48-bits, etc). PNG offers an 8-bit mode to replace indexed 256 color GIF files, or a 24-bit mode for a possible 16.7 million colors for photos. PNG was invented more recently than the others, designed to bypass possible LZW compression patent issues with GIF (which never actually became an issue). And since PNG was more modern, it offers other options too (RGB color modes, 16 bits, etc). One additional feature of PNG is transparency for 24 bit RGB images. Normally PNG files are a little smaller than LZW compression in TIF or GIF (all of these use lossless compression, of different types), but PNG is a bit slower to read or write. That patent situation has gone away now, but PNG remains excellent lossless compression. Less used than TIF or JPG, but PNG is another good choice for lossless quality work.

Camera **RAW** files are very important of course, but RAW files must be processed into regular formats (JPG, TIF, etc) to be viewable and usable in any way. Make no mistake, Shooting Raw is a

philosophy, not just a setting. RAW involves a little extra work, but offers substantial benefits, one of which is we can choose our settings AFTER we can actually see the image, and see what it needs, and see what helps it, and can still change our minds and try something else. Some may debate it, but many cannot imagine NOT taking advantage of the greater opportunities of RAW.

We could argue that there really is no concept of RAW files from the scanner (scanners are RGB). Vuescan does offer an output called RAW, which is 16 bit, but RGB, not raw like from cameras. The difference is that it only defers gamma correction until a later pass. And its file can include the scanner's fourth Infrared noise correction channel data if any. Vuescan itself is the only post-processor for these Vuescan raw files (except any Photoshop-like Levels can adjust gamma). But scanner color images are already RGB color, instead of Bayer pattern raw data like from cameras.

Camera RAW images are not RGB, and must be converted to RGB for any use (our monitors and printers expect RGB images). The idea and big advantage of camera raw is that all camera and JPG processing options (such as white balance and contrast) are deferred until later, when we can see the image to decide what it precisely needs without having to undo JPG processing. That makes it better, and much easier to get it right. Then the converted RGB image can be saved only one time as high quality JPG (no JPG artifact issues). When and if the image needs additional processing, we discard that JPG copy and resume from the raw archive original.

It is recommended to always archive your original unedited image from camera or scanner. Especially for JPG, archive the first pristine copy (which is automatic with Raw files). Your download folder should be your permanent archive location of the camera's unchanged original file, and edited copies go elsewhere. Good practice is when editing that image, always save any change to a different file in a different location, always. Never overwrite or delete your only original file. Always keep your pristine original, because you can't otherwise go back. Or else there could be times when you realize the edited image is damaged, especially important on the really special ones. JPG especially, each JPG compression is lossy. If you did edit that original JPG file a few times, for white balance, brightness, resampling or cropping, JPG quality suffers with each new JPG compression

(lossy), and it is irreversible if the original image is lost. **You can't go back, so don't risk destroying your pristine original image.** Any work should only make a copy. Beginners tend to worry about the disk space used by that archive, but this is just the nature of the game, JPGs are small anyway, and disks are inexpensive (a 4 TB Western Digital USB 3.0 external drive is about \$100 USD). Disk space becomes a trivial concern. Retaining your original image is not trivial. Make a frequent backup too, onto another disk. It's a choice of being safe now, or sorry later.

File and folder names

Cameras and image-manipulation software automatically name new files, but you will have to replace these file names. You must not leave the naming of your important images up to a piece of software! You will also have to create or use a folder structure to store your files so they can be easily located later.

- **Be consistent!**

Whatever file-naming system you use (whether it is one you create or one that your teacher or employer requires), use it to name all your files. It may seem unnecessary to include each part of a file name for every file, but this will enable you to locate specific images and versions as your folders fill with files.

- **Include enough information**

When naming your files, include information about the file itself as well as the project, job or collection it belongs to. This may mean that you repeat a folder name in each of its files' name. File names like these can seem long, but they will be helpful if you ever have to identify what a particular image was used for.

- **Control length of file names**

Descriptive file names can be fairly long, but they should not be more than 30 characters. Use abbreviations and shortened titles to reduce length but be sure that you do not leave out important information.

- **Go from general to specific**

When naming folders, always start with the most general folder or directory, and make its subfolders more specific. Folders inside those subfolders should be even more specific, or narrowly focussed. For example, a nature photographer might use this folder structure to store images of turtles photographed in the wild:
 \nature\animals\wild\reptiles\.

File names should also start with general information and lead into more specific information. Think of these as levels, and use the underscore character to separate them. Levels of information can include dates (year, month, day format, following the general-to-specific rule) and version numbers. For example, a retouched photo (version 2) taken at the SPCA on Sept. 20 of the fifth dog photographed might be named, spca_dog05_20Sep14_v02.

- **Use simple, safe characters**

Some computer systems and programs do not recognize spaces or certain characters in file names. Avoid possible problems by following these rules when you name files:

Do not use "special characters," including ! @ # \$ % & * + = { } < > ' " : | / \.

Do not use spaces.

Use the underscore character between levels.

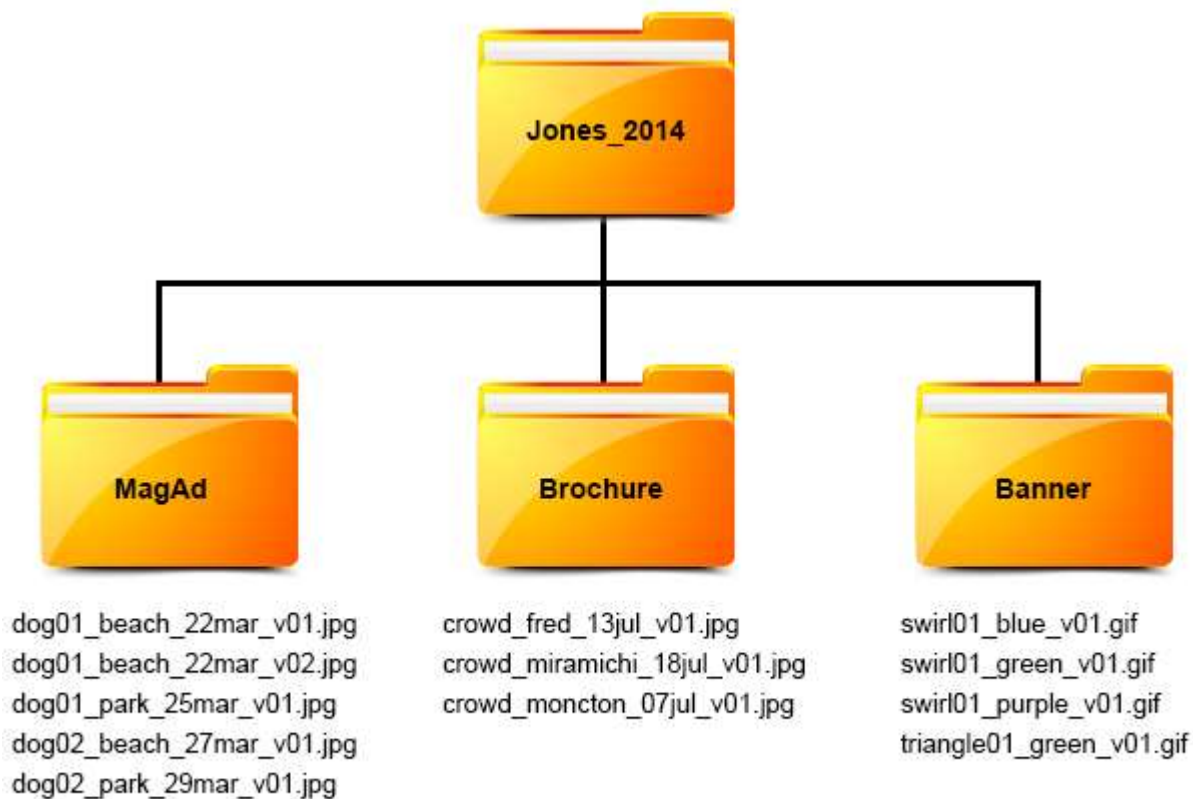
Rule	Good	Bad
Do not use spaces	vacation2014.jpg	vacation 2014.jpg
Use an underscore between levels	vacations_pei_2014.jpg	vacations pei 2014.jpg
Do not use "special" characters, including ! @ # \$ % & * + = { } < > ' " : / \	TomAnn_camp_2014may	Tom&Ann@camp <May 2014>.jpg

File storage

One reality in the digital world is that computer drives can crash and files can suddenly disappear. When you create digital assets that are important to you, you should reduce your risk of losing them by saving backup copies to a location outside your computer. Saving copies to a DVD, Flash drive, external hard drive, other computer or "the cloud" can save the day if your primary computer lets you down. Be sure to label DVDs or Flash drives and save them where you can find them when they are needed.

File and Folder Structure

Let's say you have a client named Jones for whom you are creating digital images for three different projects this year: a magazine advertisement, brochure, and banner advertisement. Take a few minutes to analyze this example folder and file structure. Can you figure out the system used for the file names?



See if you can name the file path for these images:

1. On the 3rd of April, you took another picture of the second dog you're using as a model for the magazine advertisement. This time, the dog is in a chair. What is the file path for this image using the established structure?
2. On the 25th of July, you made some digital enhancements to the Moncton crowd image. What is the file path for this image using the established structure?
3. You're adding another type of swirl shape as a possibility for the banner design and it is red. What is the file path for this image using the established structure?

Select of the number of the term that matches each of the descriptions shown below.

To change the scale of an image _____

The amount of white or "light" in an image _____

The intensity of colour in an image _____

To delete unwanted areas of an image _____

The amount of colour difference in an image _____

A programmed combination of RGB _____

1. Hue
2. Brightness
3. Contrast
4. Resize
5. Crop
6. Saturation

Select of the number of the term that matches each of the descriptions shown below.

A basic unit of programmable colour _____

Pixels per inch - pixel density. A resolution and quality measurement for images _____

Red, green blue - each pixel in an image is coloured with a programmed combination of RGB _____

To display more PPI _____

To display fewer PPI _____

1. Zoom in

2. Zoom out

3. Pixel

4. PPI

5. RGB